The Scientific Diplomacy of Medical Diasporas: A Case Study of Foreign Medical Doctors In Texas

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The purpose of this paper is to offer an qualitative perspective on foreign Medical Doctors (MDS) in the US using a life story approach to analyse their migration processes. We use in-depth interviews with 17 MDs working in the health hub of Houston, Texas and who come from the following countries: China, Colombia, Lebanon, Mexico, Peru and Romania. While previous literature shows that medical migration is a problematic and emblematic case for brain drain theory, our findings demonstrate the positive consequences of health migration when seen from the perspective of individual growth on a professional level, therefore sustaining brain circulation theories.

An Introduction to Scientific Diplomacy

In our globalized world, science has acquired an outstanding networking role and can be found at the basis of international cooperation of all types. On the one hand, the internationalization of science is a basic requirement for ensuring global access to science (Mahroum 2005) and covers world scientific organizations, cooperation programs, and cooperation agreements between research institutions and personal contacts, among others. On the other hand, politicians and diplomats need scientific knowledge to make decisions and formulate their arguments. Scientists, as opposed to politicians who depend on re-election, are used to participating in long term projects, data analysis and risk assessment (Gottstein 2003). As a consequence, international scientific cooperation in science opens new channels of communication between political systems and countries. The advancement of knowledge essentially positions scientific culture on a par with the culture of diplomacy since scientific institutions are now playing a fundamental role in world policy making. This role is exemplified by their direct and indirect involvement in the decision making processes of politicians or

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the development of alternative types of cooperation (track II diplomacy) that are not the exclusive preserve of the state.

As a direct consequence of the internationalization of science, scientific diplomacy (SD) has become a non-official means of conducting international relations and refers to communication between scientific institutions, governmental departments and economic actors such as companies. SD may also be considered a type of public diplomacy in which scientific actors improve the image of their countries of origin. Such is the case with medical diasporas that often form part of educational elites representing the knowledge of their country abroad, as opposed to low skilled workers that may project an image of poverty and deficient education. SD may also work as cultural diplomacy since it opens dialogue where politics would fail. For instance, Gottstein shows that while US culture is poorly perceived in Islamic countries, its science and technology are quite popular.

This internationalization of science and SD constitute the cause and effect of the circulation of worldwide talent, as is the case of medical diplomacy promoted by medical diasporas. Despite previous assumptions that medical migration is often unethical from the point of view of the development and wellbeing of countries of origin, it can be shown that medical migration may benefit both countries of origin and destination countries through the formation of knowledge networks and even a system of virtual patient treatment. Medical diasporas also undertake voluntary and involuntary efforts of image promotion for their places of origin, especially when they come from developing countries believed to produce unskilled and therefore less valuable human capital.

The working hypothesis of this paper is that medical diplomacy as a type of SD may be a fruit-ful way of implementing the cascade model of science (Carrier 2004), in which democratic science and corporatist science (Shiva 1997) come together in an effort to stimulate scientific cooperation between countries of origin and destination. In the particular case of medical diplomacy as promoted by medical diasporas, foreign medical doctors (MDs) are the active agents that network knowledge and institutions beyond borders, thereby making the case for a circulation of knowledge theory.

This paper studies the medical diasporas of foreign Medical Doctors (MDs) in the US and the impact of their cooperation back home. Our work is

structured as follows: 1) Literature review of brain circulation and medical diasporas; 2) Methodology used; 3) Medical migration to the US; 4) Multiple case studies of foreign MDs in the medical hub of Houston, based on original qualitative research conducted in 2016-2017; 5) Conclusions.

1. Literature Review: Brain Circulation and Medical Diasporas

There is a very rich background of theoretical research preceding our study. Firstly, there is the literature on medical migration written in the first decade of the 21st century, which analysed the costs and benefits of this type of movement along with the specific ethical problems that accompany it. To begin with, a study by Pang, Lansang and Haines (2002) outlines the adverse effects of medical migration on developing countries, which tend to predominate over benefits such as remittances, improved training, and the forming of long term professional networks.

Given the increasing demand for health workers in developing countries, needed to care for aging and isolated populations, there has been a long discussion of a code of ethical recruitment for health migration. In 2004, the World Health Assembly proposed the creation of a voluntary Code of Practice for the international recruitment of health personnel. A study by Buchan (2005, p. 210) provides examples of a code of ethical recruitment implemented in Great Britain. The National Health Service in Britain cannot actively recruit in developing countries unless an agreement between the two governments has been signed. However, as Buchan notes, this code has been imperfectly put into practice, citing the example of the reported recruitment of nurses from so-called "proscribed" countries in sub-Saharan Africa.

Authors such as Dwyer (2007) ask whether health workers have the right to migrate at all. When health care workers migrate from poor countries to rich countries, they create problems of social justice in the countries they leave, Dwyer states. He shows that a substantial number of foreign MDs in the main countries of reception, such as the US, Canada and Australia, are from low- and middle-income countries with relatively high instances of disease. In the United States, for example, over 60 percent of immigrant physicians come from low- or middle-income countries. Over forty thousand are from India, over seventeen thousand from the Philippines, and almost ten thousand from Pakistan, according to Dwyer (p.37).

His point is that health workers should assume the responsibility for care in the societies where they have been educated with the use of public money. ¨People are free not to study; they are free not to exercise their skills; they are even free to leave a society. But at least in many circumstances, when people choose to acquire professional skills and rely on public resources and institutions to achieve that goal, they also acquire some social responsibilities.¨ (Dwyer 2007, p. 38). For him, medical migration or the medical brain drain is a constructed social problem of international justice. In this way, underserved populations in rural areas or individuals in the prisons of developed countries receive medical attention from foreign educated doctors, when poorer countries with bigger health threats and less resources need these doctors to raise life expectancy in third world populations.

In a similar vein, Hooper (2008, p. 684) argues that wealthy countries have a moral obligation to reduce the flow of healthcare workers from the developing to the developed world. Hooper appreciates the brain drain affects all aspects of society, but that it is especially damaging when it affects healthcare systems since it causes serious disruption to their capacity to provide healthcare in countries with the greatest burden of global disease: ¨...a major cause of the so-called healthcare brain drain results from the unscrupulous and deeply hypocritical behaviour of Western governments which, while wringing their hands about the state of healthcare in the developing world, systematically poach healthcare professionals from these very same countries.¨

Hooper divides his analysis into three parts: a) The mutual benefits for migrants themselves, the residents of recipient countries and the residents of donor countries; b) The burdens on donor countries as they lose people who may be an engine of growth while ¨footing the bill for educating their health-care professionals¨ (p. 685); and c) Counter-arguments related to dependence theory and moral duties. Hooper states that: ¨becoming dependent on exporting healthcare professionals is one with being dependent on cash crops such as cocoa, coffee and cotton (...) Healthcare workers who are trained using taxpayers' money have an obligation to those same taxpayers to provide a service to them. Poor people in poor countries do not pay taxes to train healthcare workers in order that they may leave the country to find a better life. They pay taxes in order to benefit directly from the knowledge and skills of those they train. Taxpayers have rights too.¨ (Hooper 2008, p. 685)

Following this rather pessimistic view of medical migration, OECD world health reports (2010 and 2017) allow us to distinguish differences in a variety of international work flows of doctors and nurses. Research by the OECD/WHO on health migration offers four main findings: 1) A significant proportion of international movement is between OECD countries; 2) The outflow of health personnel from large origin countries such as India or Russia –large in absolute terms – remains low compared to the size of their total workforce; 3) The situation is, however, quite different in the case of certain smaller countries and African countries , where there are as many doctors born in these countries work-ing in OECD countries as there are working in their home countries; and 4) The need for health workers in developing countries, as estimated by the WHO, largely outstrips the numbers of immigrant health workers from those countries working in OECD countries. (OECD 2010, p.5).

Furthermore, a third type of literature focuses on how to deal with the harm that may be caused by medical migration. Ahmad (2005, p.44) proposes different types of solutions for countries of origin and destination. For developing countries, the list should include investment to improve the working conditions of health professionals; the requirement for publicly funded trainees to commit to a specified period of national service; policies that emphasize the development of science and technology research; and the entering into bilateral agreements with receiving countries to control the skill flow and receive some compensation.

For developed countries, strategies would include: making a genuine commitment to train more health professionals; developing and implementing a code of conduct for ethical international recruit-ment; limiting recruitment from countries with clear staffing shortages; issuing non-extendable visas geared towards acquiring skills that benefit the source country; implementing policies that facilitate the re-entry of skilled professionals into the host country after a period in their country of origin; and pay-ing compensation to source countries through bilateral arrangements (Hooper 2005, p. 44).

A more recent study by Kaelin (2011, p. 494) indicates that the systemic nature of medical recruitment in response to the demand for paid care work is the result of an aging population, better medical treatment, and transformed family structures.

To respond to such problems and to reverse technological transfer Clemens (2015) proposes a global skill partnership, as an ¨ex ante public-private agreement to link skill formation and skilled migration for the mutual benefit of origin countries, destination countries, and migrants¨. Clemens actually bases his argument of evidence from medical migration of nurses and medical doctors who cannot find satisfying jobs in their countries of origin, either because there are underpaid or underused professionally.

To prevent negative consequences of brain drain, Clemens believes there should be a pre-migration agreement between two countries, in order to have a joint financing process of the education of postulated migrants. This type of cooperation would meet the needs of more health personnel in aging developed countries, while giving proper jobs to health migrants from poor countries that cannot hire those people. ¨Well-designed partnerships would eliminate and even reverse fiscal drain from origin countries due to new migration, while preserving workers' mobility and providing needed skills at the destination¨, says Clemens.

Another paper by Walton-Roberts (2015) finds that medical migration is actually induced by educational systems that produce internationally oriented healthcare workers. Lastly, Groenhout (2012, p. 6-8) applies the ethics of care developed by feminist theorists using two main ideas: the notion of particularity, and the need to be attentive to particular cultural circumstances and contexts. Her proposal offers two types of solutions to health migration: a) Liberal solutions, that tend to rely on state action, such as increased payments to MDs, improved working conditions (number of hours and locations), delivery of medical education in the local language (when medical migration needs to be restricted) or English (when it is to be promoted); the creation of different licenses for different contexts to make emigration more difficult, and b) Libertarian responses that place a much heavier emphasis on preserving economic freedom thereby promoting these responses as increased places at medical schools.

While this brief literature review serves to acknowledge previous research and findings on health migration, we also note that it is mostly focused on analysis at the political and ethical levels. We will therefore offer a different type of study to complement and verify more general research from the individual perspectives of foreign medical doctors who work in the US and, more specifically, in the health hub of Houston.

2. Method

To understand the particularities of medical migration, in particular the migration of doctors, to Houston, Texas, this study uses qualitative field research conducted in the US. It contributes to the literature by isolating medical migrants from other skilled professionals since doctors are health workers but also scientists. The purpose of the qualitative research is to identify individual stories of migration while understanding how the interests and assessments of migrants may be used for public policy. This is not a study of the effects of medical diaspora in their countries of origin, unlike previous studies like Williams, N. (2018), but one that analyses the diaspora perceptions regarding the immigration process and its engagement with the countries of origin. All the interviewed MDs are first generation migrants. We chose in-depth, semi-structured interviews as a way to document each story of migration. This interview format permits an appropriate balance of open and closed-ended questions, depending on the individual's availability to talk, but also allows the asking of new and unplanned questions that may arise in each individual case study. Information was collected on five main topics of interest:

a. Personal (age, place of origin, years abroad, education, and marital status);

b. Story of migration (year and conditions of arrival in the United States, reasons for outmigration, and individual versus family migration);

c. Integration into the U.S. labour market (certification requirements, job satisfaction from a professional and financial point of view, experiences of discrimination, comparison with other migrant worker groups);

d. Participation in associations and networks with other migrants for professional or leisure purposes; and

e. Desire to return to their country of origin (to confirm the myth of eternal return the dream the migrant has of returning to their home country but never comes true (Counihan 2008) as opposed to failed return—when migrants either return early from a position abroad or leave their host organization while on assignment—which some would avoid).

3. Medical Migration to the USA

A report by the OECD (2010) shows that changes in the share of foreign-trained health workers reflect the cumulative impact of past migration flows, sometimes with a delay due to the time taken for full registration. Attracting foreign-trained medical doctors has been a major trend in the 21st century, partly to attend the needs of aging populations in several OECD economies. Table 1 shows that other coun-tries such as New Zealand more that double the percentages of foreign trained doctors when compared to the US, with 73.4% against 33.3% in 2016. However, the US is the first receiver of foreign Medical Doctors in absolute numbers, with 647335 individuals in 2016.

Table 1. Data on Domestically and Foreign-trained Medical Doctors in Selected Countries (2016)

	Country of destination	Domestical-ly trained-doctors	For-eign-trained doctors	% of for-eign-trained Mds
1	New Zeal-and	9086	6678	73.4%
2	Norway	14043	9157	65.2%
3	Australia	55727	28283	50.7%
4	Switzerland	24275	11900	49.0%
5	United King-dom	116470	49818	42.7%
6	United States	647335	215630	33.3%
7	Canada	73198	23560	32.1%

Source: Data extracted on 17 Dec 2018 13:42 UTC (GMT) from OECD.Stat
To put in the words of a Romanian doctor interviewed for this study:

> ¨America offers the advantage of the walked path, we know exactly what to do practice medi-cine here (...) Comparing medical wages in the entire world, America pays best. ” (Medical doctor born in Romania, 47 years old, 17 years in the US, female)

According to the American Immigration Council, the medical specialties were foreign-trained doctors seemed to be more representative were geriatrics (52%), endocrinology (40.9%) and internal medicine (38.6%). Most importantly, according to data by the OECD, the first countries of origin of foreign-born MDs in the US are India, Pakistan and Grenada (see table 2).

Table 2. Main Countries of Origin of Foreign Medical Doctors in the US

1	India	45830
2	Pakistan	12454
3	Grenada	10789
4	Philippines	10217
5	Dominica	9974
6	Mexico	9923
7	Canada	7765
8	Dominican Republic	6269
9	Russian Federation	6021
10	China	5772
11	United Kingdom	4635
12	Egypt	4379
13	Syria	3922
14	Nigeria	3634
15	Israel	3483
16	Iran	3038
17	Lebanon	3022
18	Netherlands	2870
19	Poland	2833
20	Colombia	2646

Source: Data extracted on 17 Dec 2018 13:42 UTC (GMT) from OECD.Stat

The majority of foreign-born doctors who study in the United States as medical residents use J-1 visas, a visa category that requires the individual to return home for at least two years after finishing their training (Partnership for a New American Economy 2015).

In a similar position to other developed countries, the U.S. will have an estimated shortfall of 130,000 doctors by the year 2025 (Palmer). While in 2014, almost 15 percent of the U.S. population, or 46 million people, were living in rural counties only 6.1 percent of physicians were practicing in those areas due to difficulties in attracting and retaining foreign and native born physicians. Another explana-tion for this understaffing is that the majority of American physicians are opting to become "specialists" when the most urgent need in the U.S. is for primary care physicians, according to Witte and Khan (2013).

The total number of professionals employed in medicine and the health Sciences in the US was 4,879,173 in 2014, according to the American Medical Association. International Medical Graduates mainly serve Critical Access Hospitals (those with fewer than 15 beds), rural underserved areas, patients on Medicare, Medicaid and No-pay patients in a greater proportion than American physicians.

More specifically, Texas is one of the top ten states with the largest number of counties without active physicians. 20 of its counties (7.9%) have no physicians and the state is experiencing a shortage of Spanish speaking doctors and health care related translators Palmer (2013).

While Houston is an important recipient of foreign doctors, mainly from India, Lebanon, and China, very few are from Latin America. This is in spite of its geographic proximity and the potential for Mexican doctors to provide care for the growing Hispanic population in the state.

4. Case Studies

The goal of this research is to identify the individual perspective on medical migration, including the reasons why MDs choose to migrate and stay in the US, along with the professional networks established with their countries of origin. In addition to identifying the reasoning behind their process of migration, we also try to establish whether they actively participate in diaspora or professional associations.

We conducted in-depth, semi-structured interviews with 17 foreign MDs working in the health hub of Houston, Texas from six different countries of origin: China, Colombia, Lebanon, Mexico, Peru and Romania, during the period September 2016 to February 2017. In this study group, four of the respondents were women and thirteen were men.

This high masculinization of the group reflects a more general international background where women tend to be a minority among migrating MDs, in contrast to the situation of nurses where they are a majority. As such, the migration of female health workers may be interpreted as a joint type of "care drain": health care and family care (Eckenwiler 2014 and Dumitru 2014). Even though it is not the object of this study, it should indeed be interpreted in terms of gender difference: firstly, in terms of access to education in the country of origin, and secondly, due to the long term process of certification at odds with the role of women as mothers and housewives. Two testimonies serve to support these findings.

The first of these is from a female MD born in Lebanon. She is 50 years old and had been working at a famous clinical institution in Texas for 20 years at the time of the interview. As she recalls:

> ¨I'm not sure exactly what made me feel that I really wanted to go to school, but the simplest and silliest part of it is that I didn't want to get married because I knew that if I stayed home I would be an easy target or victim. (...) I wanted to study medicine because I wanted something that would continue for a long time, because a thing that ends somewhere means that I would have to struggle again with the marriage business. Eventually I got married and I had kids, but I wanted to do it on my own terms.¨

A second opinion comes from another medical doctor, this time a man, who tries to explain why there are less female than male MDs from Mexico: ¨Among the Mexican MDs that are here, I only know one woman. I believe that in Mexico we still don't have a culture where a woman can go by herself to study in a foreign country. It is a family problem, but also a personal option¨ (MD from Mexico, 49 years old, 25 years in Texas)

Apart from gender segregation, we were able to prove several hypotheses during our field research and discussions related to the following: a) Push factors, such as conflicts at points of origin; b) The process of integration

and certification in the US that leads to professional success; c) Integration into the medical labour market; d) Perspectives on return; and e) The opinions of MDs concerning the medical brain drain.

a) Fleeing from ¨conflicts¨ back home

Similar to Sirkeci and Cohen (2016), our study demonstrates there are various cultures of migration that push people to leave countries suffering wars, insufficient economic development, or poor living conditions that serve to complicate professional development, especially in relation to high level re-search in medical science. Sirkeci and Cohen explain migration based on a very deep understanding of the concept of conflict. According to a classical definition, conflict embraces a range of simple tensions, contests, competitions, disputes, explicit and latent tensions as well as violent clashes and wars arising from incompatible differences in relations. (Dahrendorf 1958).

We found that the MDs we interviewed, despite being from different countries and of different ages, but all of whom migrated during a period stretching from the 1980s to the second decade of the 21st century, indicated similar reasons for leaving their home countries. These reasons included: limited economic support when compared to better salaries abroad, political corruption, violence and war, and a hiring system based on personal networks rather than on merit. We also found that conditions for outmigration for this group were often the same as those for remaining abroad, i.e., migrants' perspectives of their country of origin do not change once they are abroad and they do not regret having migrated.

Quoting again from the American Lebanese doctor mentioned previously:

> ¨I lived through the civil war between the ages of 10 and 26. And that's a big challenge because in the civil war you basically place your whole life on hold. When you don't even think of school, you don't think of the future (...) I'm Muslim and we lived almost all our lives among Christians, and during the civil war there was segregation, so we had to leave everything behind, and that was the first financial loss of the house and the restaurant and of everything. So during this whole time, my mother decided to send all my brothers, one after another, to Brazil ... she was afraid that they were going to be killed. And so I always felt that I really needed to

> keep doing something and that something, for me, the easiest path, was just going to school. And I do remember the first time I told my mother and my brothers that I wanted to go to high school. For them it was like, go to high school to do what? Because if you're in the midst of civil war and poverty you cannot think ahead and imagine that school might get you to college, and college might get you to a better job.¨ (Medical doctor born in Lebanon, 50 years old, 20 years in the US, female)

Another medical doctor from Colombia, aged 48, says he studied medicine in his country of origin and did not have plans to migrate at the start of his career. However, after a number of economic crises he left for the US along with his wife, an odontologist. They both felt that in Colombia their careers had reached a dead end. ¨We arrived with no plan¨, he recalls. The first few months he worked as a translator and would take any job to survive. He was even ready to work in valet parking, if necessary. Still, his objective was to specialize and he later received an invitation from the epidemiology department at MD Anderson. At the time of the interview, he had spent 17 years working in the health hub of Houston.

Even though not all the MDs interviewed planned their migration, most of them completed a process of specialization in the US. After these studies, the great majority decided to stay due to the better research opportunities in their new country and the long hours of medical attention that awaited them back home, long hours without the financial resources or time to conduct research.

b) ¨The most difficult exam of my life¨ or Achieving Certification

Given that the main reason MDs migrate is professional achievement, they all made huge efforts and sacrifices in order to be able to practice in the US. A Mexican doctor, now a world renowned figure for breast cancer treatment, recalls: "While my friends at the university were looking for their white wedding dresses, I was looking for my white lab coat." In other words, she postponed having a family in order to study oncology. While she doesn't consider herself different or better prepared than colleagues at the National Autonomous University of Mexico, she does think her success is due to having studied for her master's degree and certification exams abroad. She is also thankful to her family, who supported her long-term

study plans. "The certification exam was one of the most difficult exams in my life...But then, the stars lined up for me," says Dr W. She received her medical degree from the National Autonomous University of Mexico in 2003, and currently practices and teaches at MD Anderson Cancer Center in Houston.

One way to practice medicine in the United States is to pay a fee to take the exams, which usually means that interested people must come from a family in Mexico that is financially able and willing to assume the expenses. Another way is to get a medical degree in the United States, which might mean repeating studies that have already been completed abroad and which require a considerable investment of time and money. According to the foreign MDs interviewed, this may be quite stressful for many health care workers as it is similar to starting a new degree, especially when their knowledge of scientific and/or medical terms in English is limited. Therefore, many Latin American doctors prefer to specialize in Spain, where they do not face language or cultural barriers, according to the information provided by the MDs interviewed.

As a general observation, if medical doctors do not migrate at an early stage of their career, they are more reluctant and unlikely to study again and retake their exams to receive certification to practice in the United States. If for some reason they fail the certification process, they usually find employment in the administrative areas of hospitals, in the pharmaceutical industry, or even in areas completely outside the medical field.

c) How the Stars Lined Up; or Success Explained (Integration into the US Medical Labour Market)

This study confirms the results of previous qualitative work on brain circulation. In a similar vein as Saint-Blancat (2018), we found that medical doctors in the US did not plan to emigrate for good, they just took up an opportunity to do research abroad and gain experience, sometimes because they saw little chance of a career in their countries of origin. Another common finding is that medical doctors who look for research opportunities abroad, mainly seek recognition.

The MDs in our study group acknowledge the privilege of practicing in the US and being at the top end of medical research. They think it is a combi-

nation of the right circumstances, personal effort and people who believed in their potential at the right moment. In professional terms, they find a significant difference between where they came from and where they are now. According to another Mexican MD working at one the most important oncology centres in the world, based in Texas:

> ¨It was very difficult to do research in haematology at the time I studied. This is one of the most important institutions for cancer research in the world. I have a lot more patients than I'd have in Mexico. I work with 10 of the most important leukaemia authorities in the world. I am in an ideal situation. Things turned out so well that I sometimes wonder: Am I not dreaming?¨

d) Networking but no return: ¨my added value is here¨

All of the MDs interviewed are willing to give something back to their countries of origin, since they have generally benefited from public education there or because they have a certain affection for their country of birth. This is an opportunity for future collaboration and a reason for ongoing cooperation between Mexican and U.S. health research institutions.

The MDs interviewed are recognized experts in the United States and in their countries of origin and maintain professional networks with colleagues back home. They try to visit their home countries periodically for conferences and academic events.

A Chinese doctor who didn´t renounce her Chinese nationality recalls about how she and her husband, also a Chinese scientist, didn´t visit China at all during their first 8 years in the US because they had to work hard. Even though the Chinese medical system has radically improved since she left, they still don't consider going back because of their daughter, who decided to stay. She even had to pay a fee to the Chinese government because she decided to stay abroad.

> ¨I don't feel guilty, but at my age right now, I do try, I want to give back. This is why I also take the visiting scientists here, because they have a lot of good things here (take the Chinese visiting scientists here). And so I try to help, (...) to share some concept or knowledge here. I also try to help my hometown and the people there.¨ (Medical doctor from China, 55 years old, 17 years in the

US)

Regarding professional and cultural integration, Texas seems to be an easy place for Latin American migrants to live, given the existence of multicultural and bilingual environments, which, one would assume, foster tolerance. According to a Colombian American doctor:

> ¨...as a Colombian and Hispanic, Houston is one of the best cities to live in the US. When people ask me where I am from, I don't say I'm from Colombia, I say I'm from Houston, since we've been here for such a long time. We have spent more time here as adults than back there.¨

He is not interested in returning because it would interrupt his career as a doctor, but he is interested in networking with Colombians for conferences, work visits, and expert advice. Similar to other colleagues, he finds it difficult to network with colleagues in his home country, not because of a lack of interest, but due to the bureaucracy of huge institutions there, which involves competition among scientists and therefore makes cooperation more difficult. He feels that going back to Colombia would effectively nullify the investment of time, money and efforts put into certification in the US. ¨It makes absolutely no sense to return. My added value is being here, at MD Anderson¨. (MD from Colombia, 48 years old, 17 years in Houston). In fact, this is just an example of a more generalised take on the medical systems in countries of origin, that are not able to include intensive departments of research, due to the high demand of patient treatment and clinical service.

In general, the MDs interviewed do not form medical associations with colleagues from their home countries since they either have no time or, in the majority of cases, such associations do not exist. Apparently, few people have time to invest in the creation of these associations, although we did find webpages for the Chinese American Doctors Association of Houston and the Indian Doctors Association of Houston.

A previous study by Ortiga et al. (2015) underlines the epistemic differences between migrant academics and home country counterparts, that hardens long-term collaboration for research. According to their findings, to make knowledge networks of migrants and colleagues work, we need similar systems of research and medical practice. In that way, collaboration

may be easier.

Medical doctors at advanced research centers abroad may even suggest a research agenda back home that is less local and more relevant internationally; if something has already been discovered they may try to avoid repeat a product or a topic already clarified.

Another important question arises as to whether these MDs plan to return to their countries of origin. The repatriation aspirations of the individuals interviewed do not necessarily depend on the number of years spent in the United States but on the relationships they have maintained with their home countries. This became evident during a number of interviews, and here we highlight the case of a doctor of Mexican origin who decided to return to help renovate the Mexican health system, despite personal considerations.

This doctor worked for 23 years in the area of transplants and cardiovascular training. When he was 45, he began to consider helping his country of origin, Mexico. He had an eminent medical career, with articles published in the most important academic journals of his field, he was winning prizes and traveling all over the world. He started asking himself whether he should continue growing his own career of rather return to Mexico to change the health system of the country.

> I didn´t feel guilty at all, but I have always felt a responsibility to do something for with Mexico. I thought ... they do not really need me here (in the US). There are very capable people who can do what I do. Afterwards, they hired five people to do what I used to do all by myself. I believe that I can contribute to Mexico because I have a legitimate interest to help, I have arrived at a point in my career where I do not need people to prize me. That doesn't happen all the time, sometimes in your career you need to be applauded a lot. I have already fulfilled that area of my life. (Medical doctor from Mexico, 55 years old, worked for 23 years in the US)

His testimony shows that age and experience matter for networking talents abroad. Despite the common sense belief that identifies ¨talent¨ with young people in the diaspora, our field work shows that young people abroad are striving for building their own career, therefore they are not in a position to help back home. It is later in their professional life, with a wider curriculum

and stronger scientific background that they can actually give back knowledge and cooperation with their home countries.

In the above mentioned case of the Mexican doctor who returned, he intends to change the medical profession in Mexico so that more people have access to private medicine and all medical doctors have more similar abilities, improving medical attention to patients. Says he, laughing with irony: ¨you can find some MDs in Mexico who could kill the zetas (drug cartel) faster than our former President Calderon with the army¨. He is now working on a model of academic practice of medicine, where doctors get to discuss their cases in mixed research teams. In this way, they get better professional training, update their scientific record and patients benefit with more sophisticated treatments. His model is to integrate academic training with medical practice and also promote dialogue between public and private medical institutions.

The lack of real opportunity for research and professional careers in countries of origin reminds of several proposals of brain circulation by international institutions, among which I remind the ones coordinated by UN Agencies such as UNDP, ILO and IOM. Noteworthy, initiatives such as MIDA and TOKTEN combine migration and development approaches and seek the temporary return and volunteerism of experts in the diaspora (Dumas 2017). Other such as Diasporas of Highly Skilled and Migration of Talent come from the World Bank. One of the challenges of the above mentioned international brain circulation programs is that we lack updated official information of their results, therefore an evaluation of their impact is rather difficult.

5) The Medical Brain Drain, Explained by Medical Doctors

Our case studies show that the medical brain drain, from the perspective of medical doctors, means making a choice between the underutilization of research abilities back home or migration to make use of those abilities. In their home countries, these MDs would dedicate themselves mostly to patient care due to the lack of resources for medical research and the abundance of patients requiring care.

However, this general finding depends on the context of migration, that is, on the size and medical system of each country from which these medical doctors migrate. Quoting the previously mentioned Lebanese doctor:

> ¨We don't have any resources in Lebanon. We don't have oil, we don't have factories, we just have a beautiful country. As a Lebanese, I received an education, and I have the ability to continue my education, but how am I going to apply my education? If I become a chemical engineer, I don't have oil, so I'll have to go work in Saudi Arabia or somewhere where they have oil. If I become a doctor there's a limit to how many hospitals that need me there. (…) the case of Lebanon is completely different from that of other countries because Lebanon is very advanced medically speaking. Almost everything that I do at MD Anderson I can do in Lebanon but I cannot do this in Oklahoma or Mississippi. Also, some states are so behind when it comes to medicine that I cannot entrust my patients to them. But I trust sending them to Lebanon. So, do I feel that my country needs me? No. Because there's a surplus of doctors there, they keep telling me "we don't need you".
>
> So it's different for each country. We occupy a very interesting point in the world. If you look at a map you aren't going to be able to see us because we are a dot. But if you think of Mexico it would be different because they do need their doctors, and need to send them to the United States and bring them back to develop a system that will parallel what is going on in the United States.¨

The same doctor makes a distinction for African countries that may need their doctors abroad, in spite of their underdevelopment in medicine, or precisely because of that. In certain medical specialties -such as her own, radiation oncology– many African countries would have little, if any, equipment to practice this type of medicine. So she ends by saying: ¨Globalization has helped bring anyone interested to the same level. What is lacking in many countries is the infrastructure or the money to practice what they've learned.¨

5. Conclusions

The case of foreign MDs in Texas confirms previous research showing that highly valuable foreign talent contributes to the advancement of research and economic development in the United States in general and in Texas in particular. Based on evidence from the interviews with migrants working in the medical field, we found that the MDs interviewed are interested in

sharing the knowledge acquired in the United States with their countries of origin; they participate in both epistemic groups (binational networks of health experts) as well as academic events in back home. We therefore prove our working hypothesis that medical diplomacy is a type of scientific diplomacy that involves both doctors who do basic and applied science, cooperate with public and private institutions at home and abroad, fostering multilateral scientific cooperation.

Medical migration, then, is beneficial for the countries of origin, which receive the experience and knowledge acquired abroad; for patients in the countries of destination, who receive quality care based on the latest findings in medical research; and for the individuals themselves and their families, as they improve their quality of life. These doctors share their know-how in the global health system, proving that international global networks of care may actually be more of a brain gain than a brain drain.

Evidence collected during field work suggests that foreign professionals abroad, sometimes referred to as "talents" or "brains," do not like to be labelled as such and they often refuse to be considered a loss for their country of origin. Even though many of the interviewees do not consider the possibility of returning to their home country permanently, there are some who do not aspire to obtaining U.S. citizenship either; this is something that can perhaps be considered a "mechanism of resistance." Identity is very important in symbolic terms and may definitely be useful for networking with professional diasporas.

Professional and highly skilled expats may be considered cultural ambassadors as they represent their countries of origin abroad. At the same time, their experiences abroad could also provide on-the-ground knowledge that may be useful for policymakers in their home countries when designing public policy that may affect their fields of work. They possess key intellectual capital and a more cosmopolitan view of their profession and the world that enables them to evaluate their country of origin from abroad. Problems identified by skilled migrants need to be addressed by public policies in general, par-ticularly in relation to migration. In this way, skilled migrants and diasporas may be the subjects of public policies but also sources of information for decision-making back home.

Policies regarding skilled migrants are different for countries of origin and

countries of destination. From a developmentalist, neoclassical point of view, skilled migrants may be considered a gain for the U.S. economy because they contribute to economic growth and research, and a loss for their countries of origin, especially if they were educated using public resources. Major receiving countries such as the United States may look to attract migrants based on their skills, while major sending countries may look for ways to invite or coax them to return to their home countries or stimulate more net-working with professionals back home. The ideal model for managing talent is one in which the professionals circulate between countries of origin and destination, knowledge is shared, and both economies benefit.

Brain circulation is not a substitute or solution for brain drain, but two processes that may occur simultaneously. While some countries such as the African or Latin American one may indeed still need their doctors who work abroad, above all, for immediate patient care, their return depends on better wages at home, that most of the governments of origin cannot afford to pay. In this way, brain drain abroad or brain abuse at home, that is the massive loss of human capital due to outsourcing and low payment, are similar processes where medical capital is lost for research.

This paper proves that medicine is a profession naturally internationalized, where networks of knowledge have always been strong and globalized. Advanced medicine is a cosmopolite profession, that is why brain circulation is more probable, especially in medical research. Therefore, medical brain circulation (that is, medical knowledge circulation and epistemic groups) is very likely to happen and in this way substitute, if not counteract brain drain. This is not an optimistic study that rejects medical brain drain to the US, but an attempt to clarify a particular type of migration and diaspora that is effectively used through naturally occurring scientific working groups. This is also a proof against the artificial diaspora programs proposed by governments, when their vision is too general to focus on the particularities of certain diasporas, such as medical doctors.

References

Ahmad, O. B. (2005) Managing Medical Migration from Poor Countries. BMJ: British Medical Journal, 331(7507), 43.

Bhargava, A., Docquier, F., & Moullan, Y. (2011) Modeling the Effects of Physician Emigration on Human Development. Economics & Human Biol-

ogy, 9(2), 172-183.

Blue, S. A. (2010) Cuban Medical Internationalism: Domestic and International Impacts. Journal of Latin American Geography, 9(1), 31-49.

Buchan, J. (2005) International Recruitment of Health Professionals: We Need to Identify Effective Approaches to Managing and Moderating Migration. BMJ: British Medical Journal, 330(7485), 210.

Carrier, M. (2004). Knowledge and Control: On the Bearing of Epistemic Values in Applied Science in Machamer P. and Wolters, G. (2004), (editors). Science, Values and Objectivity. USA: University of Pittsburgh and Germany: Universitätsverlag Konstantz, pp. 274-293

Chojnicki, X., & Oden-Defoort, C. (2010) Is there a Medical Brain Drain?. International Economics, 124, 101-126.

Clemens, M. A. (2015) Global Skill Partnerships: A proposal for technical training in a mobile world. IZA Journal of Labor Policy, 4(1), 2.

Counihan, C. R. (2008). Private Actors in Highly-Skilled Migration. University of Delaware.

Dahrendorf, R. (1958) Toward a Theory of Social Conflict. Journal of Conflict Resolution 2.2: 170-183.

Dumas, Malina. (2017) Diaspora Volunteerism Case Study: TOKTEN. Posted on February 20, 2012. Revised on December, 14

Dumitru, S. (2014). From “Brain Drain” to “Care Drain”: Women’s Labor Migration and Methodologi-cal Sexism. Women’s Studies International Forum (Vol. 47, pp. 203-212). Pergamon.

Dwyer, J. (2007) What’s Wrong with the Global Migration of Health Care Professionals?. Hastings Center Report, 37(5), 36-43.

Eckenwiler, L. (2014) Care Worker Migration, Global Health Equity, and Ethical Place-Making. Women’s Studies International Forum (Vol. 47, pp. 213-222). Pergamon.

Feder, G., and T. Katz. (1999) Brain Drain and Health Professionals. Jour-

nal of Clinical Epidemiol-ogy52: 631-6.

Godwin, S. K. (2004) Medical Tourism: Subsidising the Rich. Economic and Political Weekly, 3981-3983.

Gottstein, K. (2003) Scientific Culture and Its Role in International Negotiations, in G. Sjöstedt, ed., Professional Cultures in International Negotiations. Bridge or Rift? Lanham, MD: Lexington Books (1-11).

Hooper, C. R. (2008) Adding Insult to Injury: The Healthcare Brain Drain. Journal of Medical Ethics, 34(9), 684-687.

Kaelin, L. (2011) Care Drain: The Political Making of Health Worker Migration. Journal of Public Health Policy, 32(4), 489-498.

Mahroum, S. (2005). The International Policies of Brain Gain: A Review. Technology Analysis & Stra-tegic Management, 17(2), 219-230.

McCabe, K. (2012). "Foreign-Born Health Care Workers in the United States," Migration Policy Insti-tute, http://www.migrationpolicy.org/print/4254#.V-6FXRwUWGs, revised on September 20, 2016.

OECD 2010. OECD Observer. (2010) Policy Brief, February 2010, International Migration of Health Workers

Ortiga, Y. Y., Chou, M. H., Sondhi, G., & Wang, J. (2018). Academic "centres," epistemic differences and brain circulation. International Migration, 56(5), 90-105.

Pang, T., Lansang, M. A., & Haines, A. (2002). Brain Drain and Health Professionals: A Global Problem Needs Global Solutions. BMJ: British Medical Journal, 324(7336), 499.

Partnership for a New American Community. (2015) Life Support the Shortage of Physicians in Amer-ica's Rural Counties and How Foreign-Born Doctors Can Help, New York: September 2015, http://www.renewoureconomy.org/wp-content/uploads/2015/09/lifesupport929-1.pdf, accessed October 31, 2016.

Saint-Blancat, Chantal. Italy: Brain Drain or Brain Circulation?. International Higher Education 96 (2018): 10-11.

Shiva, V. (1997) Western Science and its Destruction of Local Knowledge. The Post-Development Reader, 161-167.

Sirkeci, I., & Cohen, J. H. (2016) Cultures of Migration and Conflict in Contemporary Human Mobility in Turkey. European Review, 24(3), 381-396.

Walton-Roberts, M. (2015). International migration of health professionals and the marketization and privatization of health education in India: From push–pull to global political economy. Social Science & Medicine, 124, 374-382.

Williams, N. (2018). Mobilising diaspora to promote homeland investment: The progress of policy in post-conflict economies. Environment and Planning C: Politics and Space, 36(7), 1256-1279.

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