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**RELOCATION, FLOW OR ESCAPE OF RESEARCH POTENTIAL**  
**The Case of Slovenia after the Act of Independence**

DISSERTATION

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I hereby state that I wrote this dissertation myself, using my own knowledge and the sources that are cited in the dissertation.

Alenka Stanič

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## **RELOCATION, FLOW OR THE ESCAPE OF RESEARCH POTENTIAL**

### **The case of Slovenia after the Act of Independence**

#### **ABSTRACT:**

This dissertation examines the circumstances that have led to the relocation of Slovenian researchers to other countries from 1990 to 2011. A special emphasis will be placed on cases of relocation that occur as a consequence of factors that characterize the Slovenian science and research sectors. The individual life stories of a number of interviewees (referred to as informants), and specifically their decision for either temporary or permanent relocation in a foreign country, are placed in the context of organizations, relationships, and values, as well as the legal and financial framework that shapes the opportunities for work in the field of science in Slovenia. I will also provide quantitative data about the emigration of scientists and researchers after 1990, clarify general concepts of migration, science, and knowledge, discuss the theory of memory and life narratives, and elucidate my interview tactics. In the second half of the dissertation, relevant quotes from the life stories of informants will be contrasted with perspectives on the conditions in Slovenian science that lead to the decisions that are most crucial to the subject of this dissertation: namely, the decisions of young people to leave their family environment, young people who value knowledge that is open, who have been stimulated by learning foreign languages and travelling, and who, following the completion of their post-graduate studies, decide on an academic career. The first relocation to a foreign country often springs from the desire for advancement and is viewed as temporary. However, this often transforms into permanent relocation because of the closed nature of Slovenia's systems of higher education and research, which makes reentry all but possible. When we discuss the loss of Slovenian researchers, it is less a question of escape and more a question of the permanent relocation of research potential. Neither can we

speak of flow in this context because the number of those who return, and the number of foreign researchers, professors, and students who flow into Slovenia, is negligible.

**Key words:**

migration, academic mobility, brain drain, escape and relocation of research potential, circulation of brain, flow of research potential, transnationality, transnational academic field

## TABLE OF CONTENTS

|                               |            |
|-------------------------------|------------|
| <i>Statement</i> .....        | <i>II</i>  |
| <i>Acknowledgements</i> ..... | <i>III</i> |
| <i>Abstract</i> .....         | <i>IV</i>  |

## TABLE OF CONTENTS

|  |           |
|--|-----------|
| <b>1 INTRODUCTION: PRESENTATION OF THEME .....</b>                       | <b>1</b>  |
| <b>2 FOREWORD: “SEASIDE AND MOUNTAINS, HORROR AND NIGHTMARE” .....</b>   | <b>7</b>  |
| <b>3 THEORETICAL FRAMEWORK: “YOU WON’T USE MY NAME, WILL YOU?” .....</b> | <b>13</b> |
| 3.1 Definition of basic terms .....                                      | 13        |
| 3.1.1 Scientist, researcher.....   | 13        |
| 3.1.2 Knowledge, science.....  | 15        |
| 3.1.3 University.....  | 21        |
| 3.1.4 Human capital .....  | 24        |
| 3.1.5 Globalization of science.....                                      | 25        |
| 3.1.6 Mobility among academics .....                                     | 26        |
| 3.1.7 Transnationality.....  | 36        |
| 3.1.8 Brain drain.....   | 40        |
| 3.2 Historical and legal framework .....                                 | 47        |

|  |           |
|--|-----------|
| 3.3 Quantitative research in the period from 1990 to 2009 .....                                | 56        |
| 3.4 Theory of memory and narrative life stories .....  | 64        |
| 3.5 Methodology.....   | 68        |
| 3.6 Choice of informants .....   | 75        |
| 3.7 Research design .....  | 77        |
| <b>4 PERSPECTIVES OF SCIENTISTS AND RESEARCHERS: “YOU HAVE TO KEEP MAKING PROGRESS.” .....</b> | <b>83</b> |
| 4.1 Family .....   | 84        |
| 4.1.1 Formative environment .....  | 85        |
| 4.1.2 Education.....   | 87        |
| 4.1.3 Knowledge of languages .....   | 89        |
| 4.1.4. Expressions about values .....  | 92        |
| 4.2 Abroad .....   | 100       |
| 4.2.1 Departure.....   | 100       |
| 4.2.2. Integration .....   | 107       |
| 4.2.3 Conditions for work in foreign countries .....   | 113       |
| 4.2.4. Brain drain.....  | 126       |
| 4.3 Home .....   | 129       |
| 4.3.1. Conditions for work at home.....  | 130       |
| 4.3.2. Development vision of Slovenia .....  | 149       |

|   |            |
|---|------------|
| 4.3.3. International collaboration .....            | 154        |
| 4.3.4. Reintegration .....                          | 159        |
| 4.3.5. Transnationality.....                        | 163        |
| <b>5 CONCLUSION: “A SHORTAGE OF FLUIDITY” .....</b> | <b>167</b> |
| <b>6 POVZETEK .....</b>                             | <b>173</b> |
| <b>7 SOURCES.....</b>                               | <b>185</b> |



# 1 INTRODUCTION:

## PRESENTATION OF THEME

The globalization of the world economy and the subsequent financial crisis that began in 2007 have transformed the fundamental economic relationships that prevailed during modern industrial society. At the same time, patterns of social and individual behavior are changing, with an emphasis on the fluidity and short-term nature of goods and relationships. Many authors, among them Zygmunt Bauman<sup>1</sup>, make a connection between the fluidity of contemporary identities and the individual's need to create a unique identity. The effort to fulfill this need is often attempted through constant changes in the life environment. Thus travel becomes the primary instrument of redistribution of freedom, with movement and migration opening up new possibilities for creating the ideal life style. Not only is increased purchasing power characteristic of the consumerist way of life, but so is a high degree of mobility. This development poses questions about how the organisation and substance of activities and systems will provide for the efficient and just functioning of society as a whole in the future.

The role of the place and the individual is also transforming in this more fluid environment. Given the increasing connectedness of the world, as described by Arjun Appadurai<sup>2</sup> - in terms of both logistics and information – where one lives, at least in terms of profession and work, has become less important. As a result of the at least formally common European space, the movement of highly qualified professionals within Europe has become relatively simple and this is becoming true of the world as a whole for this segment of the population. This flow of human capital includes researchers. In this dissertation, I will attempt to define the factors that encouraged researchers and academics in post-independence Slovenia to relocate to a foreign

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<sup>1</sup> Zygmunt Bauman, *Tekoča moderna*, Založba / \*cf, Ljubljana, 2002.

<sup>2</sup> Arjun Appadurai, *Modernity at Large: Cultural Dimensions of Modernity*, University of Minnesota Press, London – Minneapolis, 2000.

country and discouraged or even prevented their return to Slovenia. The quantitative research carried out by Milena Bevc<sup>3</sup> among the research community in Slovenia indicates that emigration is continuous and has grown significantly during the period since 2009. Data collected for the period between 2000 and 2004 has been analyzed in terms of the extent and reason for the emigration of researchers, and compares Slovenia with other European countries. A comparative analysis of the legal framework that defines the conditions for advanced research and development activities is also provided. Data was also collected for the previous fifteen years and earlier periods, but the methodology is not uniform and comparisons are difficult. I write about the available quantitative research in Chapter 3.3.

In the dissertation, I try to analyze and explain the reasons for the relocation of Slovenian researchers to foreign countries, focusing mostly on the present time. I am especially interested in the following questions: What significance does research work have in the Slovenian state, is academic research a respected and promising profession, and is knowledge a recognized value in Slovenian society? What are the factors, especially in the last ten years (2000-2010), that influence the accelerated emigration of Slovenian researchers? How does the Slovenian state understand its role in this context? What are the responses of Slovenian professionals in the field of higher education to current global trends and the increasing openness of the academic world?

I will talk about the current conditions in Slovenia (the distribution of wealth and risk, the individualization of social inequality, the changing norms that apply to the industrial modern society, the future of education, employment, and scientific-technological development) in the context of the second modernity or “risk society” as defined Ulrich Beck<sup>4</sup>. Beck describes the period beginning in 1980s as a structural rupture in contemporary society, which has led, under given economic and social

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<sup>3</sup> Milena Bevc, Klemen Koman, and Nika Murovec, *Človeški viri v razvojno-raziskovalni dejavnosti v Sloveniji in primerjava z državami v EU – stanje in emigracija*, Inštitut za ekonomska raziskovanja, Ljubljana, 2006.

<sup>4</sup> Ulrich Beck, *Družba tveganja*, Krtina, Ljubljana, 2009.

conditions, to the ever more frequent confrontation of the individual with both the possibilities and the responsibilities of independent decisions and increased uncertainty. I will attempt to identify the characteristic concepts of the risk society in today's Slovenia, and in this effort I will rely on the conclusions of Veljko Rus<sup>5</sup> and particularly his analysis of the transition from modern to post-modern society. I will also consider the reflections of Anthony Giddens<sup>6</sup> regarding the renewal of social democracy or the so-called "third way," especially in terms of the connection between the state and civil society, which, in Giddens' opinion, occurs as a result of the manipulative cooptation of representatives of civil society into government organs and the paternalistic delegation of state functions to seemingly autonomous foundations and agencies. This in turn leads to the state's colonization of civil society and, in Slovenia's case, reduces the development potential of society as a whole. I also will describe the organization, authority, and responsibilities of various Slovenian agencies in the field of research activities (ARRS - the Slovenian Research Agency, TIA - the Slovenian Technology Agency, and JAPTI - the Public Agency of the Republic of Slovenia for Entrepreneurship and Foreign Investment of the Republic of Slovenia, Ad futura Foundation and Erasmus Exchange programmes), which should play a role in civil society, though, for a number of reasons (for example, the fact that the leaders of these organizations are mostly appointed by the government), this is often not the case. Instead, they become an extension of the government rather than autonomous organizations that are granted certain authorities by the applicable ministry. Here Veljko Rus's<sup>7</sup> observation is particularly germane: he states that "civil society is a condition for the advancement of the knowledge society and, without the former, the latter is condemned to isolation among a narrow circle of 'super experts' and therefore to inefficiency." In this context, Rus also predicted in 2003 that if social conditions in Slovenia did not evolve in the direction of a stronger civil society, we could expect the disorganization of public life and the

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<sup>5</sup> Veljko Rus, "Sociološki vidiki prehoda iz moderne v postmoderno državo," *Teorija in praksa*, Ljubljana, Vol. 40-41, 2003, 5-16.

<sup>6</sup> Anthony Giddens, *Tretja pot: obnova socialne demokracije*, Ljubljana, Orbis, 2000.

<sup>7</sup> Ibid., Rus.

emigration of the most talented members of the younger generation to foreign countries. The transfer of functions from government bodies to civil society organizations, without also transferring authority and budgetary means, would lead to complete inefficiency, which in turn would cause deteriorating conditions for work and life in general. Given the current situation in Slovenian society, I have come to believe that Rus's statement was visionary and that the increasing role of the government and the decreasing role of civil society has indeed functioned as an obstacle in all walks of life.

I will analyze the societal factors that influence the emigration of researchers to foreign countries, by exploring their experiences and life stories, and by attempting to locate the factors that are linked to the qualities of the individual researcher, his or her personal history, interests, values, and motivations. Through analysis of the social context and personal testaments, I hope to define the factors that have the greatest influence on the emigration of researchers from Slovenian during the current period.

The dissertation is composed of the following chapters:

Chapter 1: Introduction, definition of theme, and purpose of research.

Chapter 2: Foreword and presentation of reasons for choosing this particular theme, general background, and working methods.

Chapter 3: Theoretical framework and definition of concepts: migration, brain drain (or escape), integration, reintegration, knowledge, science and the scientist, financing of the scientific and research fields in Slovenia, statistical data related to the emigration of highly educated researchers during the period from 1990-2010.

Given my interest in the life stories of academics and scientific researchers and that I collected data for the dissertation in narrative interviews, I will also introduce in this chapter the theory of memory and narrative life stories: telling and listening to life

stories, intersubjectivity and the narration of life stories. I will also elucidate my interview tactics and the criteria I used for selecting interview participants.

Finally, I will discuss the method used in the dissertation: sources, overview of legislation, overview of statistical sources, and narrative interviews.

Chapter 4: The perspectives of academics and scientific researchers, their experiences and narrated life stories regarding the trajectory of their lives since childhood and family circumstances, their studies and travels out of Slovenia, returns (if they took place) to Slovenia, complemented by their opinions on conditions that define that field of scientific research in Slovenia and society in general.

Informants will remain anonymous, which in fact was the condition set for cooperation by several of the participants. Therefore I chose a fantasy name for each one of them and under this names their citations are marked in the following text. I attempted to place informants in categories based on the circumstances and assign to them certain shared characteristics, patterns, and key distinctions.

Chapter 5: Conclusion, results of research, and suggested areas of future work.



## 2 FOREWORD:

### “SEASIDE AND MOUNTAINS, HORROR AND NIGHTMARE”

I use the above-cited verse by Andrej Rozman Roza<sup>8</sup> (which is a clever play on words in the Slovenian original “Morjé in gore, gorjé in môre”) as the illustrative title of this chapter, because I know of no more concise or picturesque metaphor for the subjective experience of Slovenia as homeland and as cultural-historical space.

We have mountains and seaside: that’s pretty typical when people talk about the quality of life being the best in Slovenia, right? It’s also typical that people half expect when you come back that you say it’s the best here and that it’s wonderful to come home, and if you don’t, it’s strange. If you want to have friendly connections with people in Slovenia, you have to say that life is the best here. Otherwise it doesn’t work. My wife and I learned pretty quickly that things could go wrong with friends, except for the closest ones, if we didn’t say that life was the best here. There are many places in Europe that have the same quality of life as Slovenia, and, really, how many times do I go skiing here during the week? Never, because I don’t have time. You go skiing when there are winter holidays if you can afford it, and for that week I could fly somewhere. So I guess there is a higher quality of life and another class of people enjoy it, maybe a real middle class, but not us. (*the basketball player*)

I am interested by the constant presence of duality: on the one hand, how beautiful Slovenia is with its varied landscape and ideal geographical location, its pleasant population, hard-working, and open: on the other, how the smallness of the country effects the life, behavior, and values of individuals, hampers the functioning of the various systems (for example: judicial, educational, health), slows development and decreases the quality of life in Slovenia. I wonder how this legacy will effect future

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<sup>8</sup> Andrej Rozman Roza, *Kekec kontra Rožletova banda*, Ljubljana, KUD France Prešeren, 2000. The verse from this play is used with the written permission of the author.

generations, and if they will be willing and able to satisfyingly live and create in Slovenia.

As a person with a background in natural sciences, specifically biology, I have always been interested in processes and relationships: first on the molecular and cellular level, then on the level of eco-systems, and later, as a post graduate (masters) student at the Department of anthropology of the Biotechnical faculty, the focus of my interest became the observation of the biological and social aspects of human beings embedded in the natural and social environment. The shift from natural sciences to social sciences, or rather the combination of knowledge from the two fields, is something I use in my research and my professional work, which I have completely dedicated to people, their careers, professional development, and ambitions. At my work, I have had the opportunity to meet extremely interesting people in various professions, and have noted that among them, particularly among the young, there has been a remarkable interest in pursuing professional advancement outside of Slovenia. Because these were mostly university-educated people, often with masters or doctoral degrees, the situation intrigued me, and I began to ask myself why so many highly-educated professionals want to leave Slovenia, often permanently. I also had the opportunity to work at one of the Slovenian universities where I observed that more professionals in the academic sphere seem to emigrate than in the economic or business spheres. It was during this period that I formulated the opinion that forms the basis of my research and dissertation. Namely, I think that:

*“After significant changes that took place in Slovenia at the end of the 1980s, an increasing number of students, in search of the best conditions for study and research work, decide to move to foreign countries to pursue their goals. Emigration, which at first is limited to the period of study, often becomes permanent as Slovenian research institutions very rarely offer competitive conditions for work.”*

The perspective of Slovenian emigrant researchers on Slovenia reveals, often with much affection, the fundamental difficulties that define life in Slovenia:



Slovenia has the unique quality of being a small country where everyone is known to each other and you have to be careful not to step on anyone's toes. That's the mentality you have to accept here, very nice people, but you have to be careful not to turn your back. We would say up here (in one of the Northern European countries) that it is only semi-professional, which sounds very bad, but the rules are different and a person has to take it the way it is. I must say I'm quite pleased not to be dependant on that now. *(the fisherman)*

The quotes I make use of express the impressions my interviewees have about Slovenia from the distance of both space and time. They discuss relationships and the functioning of the whole system, and observe and analyze the smallness of the space and the interconnections of the players in the system, judging this to be one of the key limitations to freer and more efficient functioning.

We're so trapped in social interactions. Let's say someone that knows someone else, who is not good enough in a certain area to get a high-paying job at an institute, but his wife is my doctor. That sort of thing is incredibly important in Slovenia. *(the self-made man)*

The characteristics of the Slovenian society and Slovenians as individuals has been an object of numerous studies, the key conclusion being that the smallness of the country is a limitation and the small number of people a negative factor.

Slovenia is so small that you only realize when you get out if that it is possible to view science and really everything else in an entirely different light, where you publish your work etc. It becomes very different when you come out of that small frame. *(the musician)*

The myth about Slovenians being diligent and loyal citizens who behave according to the rules is a stereotype (quite some papers about this subject were, among others, published by Anton Trstenjak and Janek Musek, both psychologists) that, as Anton Trstenjak<sup>9</sup> notes, has been cultivated from the days of the Austrian Empire until

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<sup>9</sup> Anton Trstenjak, *Misli o slovenskem človeku*, Založništvo slovenske knjige, Ljubljana, 1991.

today. Slovenians take work and education seriously, and humor has little place. Janek Musek<sup>10</sup> discusses suppressed aggressiveness as a Slovenian characteristic that is reflected in the extremely high suicide rate and poor driving habits, and attributes this to the small size of the nation, which prevents it from pursuing its ambitions among larger countries. Ksenija Šabec<sup>11</sup> introduces the ambivalent relationship of Slovenians to “Europe” on the one hand and “the Balkans” on the other, and uses this as an entry to a contradictory self-portrait of Slovenian national identity. This particular self-image leads to an attitude of humility and even servitude, but at the same time to a high level of aggressiveness, domination, a tendency to manipulate others, dogmatism, and even machismo. Šabec’s description of Slovenian national characteristics fits well with the conclusions of Musek and Trstenjak, summoning the picture of the average Slovenian as someone who accepts authority, is not too ambitious, but is hard-working, more of an individualist than a team-player, with a tendency to criticize and be aggressive to those around him and to himself as well.

In conducting research, I used the narrative interview method. I talked with ten people with PhDs, choosing informants whose life stories illustrated specific events and helped to clarify the causes and reasons for the decisions that carried Slovenian researchers to foreign countries. I chose to include excerpts from interviews that I believed showed the conditions and work possibilities in the research sphere in Slovenia as experienced by people who are (or were) a part of that community. I tried to draw from their responses the characteristics that have defined the academic research field in Slovenia during the last twenty years.

All interviews were taped. In the Slovenian original of this dissertation, quotes were transcribed directly from the recordings, that is in the way they were spoken, with no attempt to translate them into a more proper written idiom. This preserved the

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<sup>10</sup> Janek Musek, “Slovenci v luči mednarodnih in medkulturnih psiholoških primerjav” In: Erika Kržišnik (ed.), *Seminar slovenskega jezika, literature in kulture* 35, Ljubljana, Filozofska fakulteta, 1999, 181-200.

<sup>11</sup> Ksenija Šabec, *Homo europaeus, nacionalni stereotipi in kulturna identiteta Evrope*, Fakulteta za družbene vede, Ljubljana, 2006.

authenticity of the utterances. In the English translation, all quotes are translated into more or less standard English.

I conducted the interviews for the dissertation during the period from June 2010 to August 2011.



### 3 THEORETICAL FRAMEWORK:

#### “YOU WON’T USE MY NAME, WILL YOU?”

In this chapter, I will go over the relevant literature in the fields of migration and the history of science and knowledge, as well as provide an overview of the laws and documents that define the field of science, technology, and higher education in the observed period in the Republic of Slovenia. I will also introduce some quantitative data about migration drawn from existing studies on the subject. I will discuss the historical framework and key events in the period under study. I will define used methodology and how I selected informants, and I will describe the research design.

#### 3.1 Definition of basic terms

##### 3.1.1 Scientist, researcher

In my research, I use the terms scientist, researcher, and academic. This usage calls for a detailed explanation and definition of terms. In western countries, and I am thinking specifically of the United States here, the term “scientist”<sup>12</sup> includes researchers in the natural sciences such as physics, mathematics, and biology. Researchers in the field of humanities and social sciences are not called scientists, but fall in the category of “arts.” In Slovenia, the term “scientist” is used more widely and is almost synonymous with the concept of “researcher” or “academic” as there is no distinction in the terms between the natural sciences, social sciences, and the humanities. Rather, the term is indicative of the type of work - academics and research - regardless of the specific field in which it is pursued. But the terminology

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<sup>12</sup> The neologism “scientist” was coined by the English philosopher and historian of science William Whewell who used it in 1834 in a review published in *Quarterly Review* of the work of Mary Sommerville’s “On the Connexion of the Physical Sciences,” <http://en.wikipedia.org/wiki/Scientist>. As Sašo Dolenc reports, Whewell publicly used the term “scientist” before, namely on June 24, 1833 in Cambridge, at the 3<sup>rd</sup> conference of the British Association of the Development of Science, <http://www.kvarkadabra.net/article.php/iznajdba-besede-znanstvenik> accessed October 10, 2011.

is not uniform: for example, there are differences between scientists, philosophers, and engineers.

In the European Union, there has been an effort to formally standardize the terminology on the basis of recommendations made by the OECD<sup>13</sup> whereby the term “human resources in science and technology” is used for people who fulfill one of the following two conditions: they have appropriate (tertiary) education in the appropriate field or work professionally in science and technology. In this context, “science and technology” is understood very widely and covers all the fields mentioned in the previous paragraph (both natural and social sciences). In this dissertation, I also use the terms scientist and researcher in the broader sense, although most of my informants are professionals in the natural sciences.

And I must also say this: being a professional researcher is quite frustrating because there are more unsuccessful days than there are successful days. If we knew what we were doing, then we wouldn't be researchers. (*the photographer*)

The above quotation from one of my informants is self-deprecating and ironic, expressing the internal contradiction of scientific research - that is, the effort to define the very nature of scientific work. Relevant literature describes the scientist as someone who systematically acquires knowledge; defined more narrowly, the scientist is someone who systemically acquires knowledge using the scientific method. Plato's definition of knowledge is “justified true belief”. This definition is contradicted by the argument of Frank L. Gettier:<sup>14</sup> namely, that knowledge is not comparable with belief and is not a special form of belief. However, according to other philosophers, Gettier's argument does not apply to scientific knowledge,

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<sup>13</sup> OECD, Frascati Manual, Paris, 2002,  
[http://www.uis.unesco.org/Library/Documents/OECDFrascatiManual02\\_en.pdf](http://www.uis.unesco.org/Library/Documents/OECDFrascatiManual02_en.pdf) accessed on October 13, 2011.

<sup>14</sup> Edmund L. Gettier, “Is Justified True Belief Knowledge?”, *Analysis*, 23, 1963, 121-123,  
<http://www.ditext.com/gettier/gettier.html> accessed on September 29, 2011.

because scientific knowledge represents an intersubjective base of knowledge.<sup>15</sup> Scientific knowledge is defined as the sum of relevant situational beliefs, reality, and non-contradictory compatibility with the paradigmatic knowledge base: the intersubjective verifiability of claims.

### 3.1.2 Knowledge, science

Among many other authors, Andrej Ule<sup>16</sup> states that the individual achievements of researchers represent societal achievements because - through the system of peer review and criticism - they become the achievements of the entire scientific community in individual scientific disciplines. One of the definitions of knowledge that Ule promotes is the collective definition: "Scientific knowledge is collective and transpersonal, as it is also dependent on the social context of knowledge. Nevertheless, this does not mean it is uncertain or relative. It is reliable and precise within the framework of the specific scientific paradigm from which it emerged. The person who has scientific knowledge is a representative of collective knowledge, not a personal carrier of knowledge or a subject of knowledge. That is why there is no absolute scientific knowledge because it is by necessity trans-historical and trans-social." This sentiment is also echoed in the following statement made by one of the informants who emphasized that ideas, rather than individual scientists, are the carriers of knowledge. Ideas need to develop and live their own life and, from this perspective, the mobility of the scientist is important to the flow of ideas on the global level.

At this level, once students get their PhDs, now, I still think that they cannot work their whole career in Slovenia. Because that's how I see science, that you're a carrier of ideas. Science isn't people, science is ideas, and we must allow that evolution to take place in our brains, and that will only happen if we

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<sup>15</sup> The primary source has no author cited, [http://www.zofijini.net/online\\_znanje.html](http://www.zofijini.net/online_znanje.html) accessed on September 29, 2011.

<sup>16</sup> Andrej Ule, *Znanost, družba, vrednote*, Maribor, Aristej, 2006.

are part of a flow and that flow takes place in the whole world. Slovenia is a small part of that, and we must be sure that we are part of the flow. (*the artist*)

In the effort to define science and knowledge, one should among other authors also consider the concepts of Daniel Bell<sup>17</sup>, who defines knowledge as “a set of organized statements of facts or ideas.” According to Bell, knowledge has become the primary productive force replacing capital, labor, and natural resources as the fundamental factor for the creation of values and wealth. This change, in his view, means that contemporary society is now “post-industrial” or “post-capitalist.”

What then is the nature of scientific thought and how valuable and trustworthy are the conclusions of scientists? For example, Samir Okasha<sup>18</sup> deals with this question in his historical overview of science, touching on issues such as methods of deduction and induction, Hume’s critical inductive methods of intuition and faith (not in the religious sense), and how they affect the premises and conclusions of scientists. Okasha states that one of the most important goals of science is to explain what is happening in the world. Sometimes reasons are sought for practical goals, in other cases because we want to satisfy intellectual curiosity, to understand the world around us.

A glance back through history reveals that a new form of knowledge, known as science, was created during the seventeenth century, with different structural characteristics from other areas of culture. It created its own institutions and its own methods of communication that became inseparably connected to each other. Every claim had to be made publically, then monitored and verified by others in the community, and exposed to possible refutation. Scientists are professionals who realize that others may put forward evidence and proofs that will show that their conclusions were erroneous. Therefore, the validity of scientific claims is not simply

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<sup>17</sup> Daniel Bell, *The Coming of the Post-Industrial Society: A Venture in Social Forecasting*. Basic Books, New York. 1973.

<sup>18</sup> Samir Okasha, *Filozofija znanosti*, Založba Krtina, Ljubljana, 2008.



dependent on the reputation of the person who makes the claim. This is a legacy that, according to Paolo Rossi,<sup>19</sup> Europeans still regard as an indispensable value.

The pursuit of knowledge is an exceptionally dynamic and rapidly changing activity. The dynamics of scientific changes have been at the center of many philosophical debates. Is the development of science a linear process or it is, like evolution, characterized by longer, seemingly uneventful periods, interspersed with periods of great change that overthrow what has hitherto been valid and create new paradigms that in turn lead to new cycles of discovery? Thomas Kuhn<sup>20</sup> writes about this cycle and about the dynamics of scientific (r)evolutions: namely, that there are periods when research is conducted on the basis of generally accepted paradigms, adding new details, filling in missing elements, out of which there eventually emerges new assumptions that no longer support the accepted paradigms, and this causes a period of increased lack of trust. At this point, there follows a search for radical new explanations, until sufficient scientific proof has been gathered, and new paradigms are accepted and become the basis of continued research. The dynamics of scientific process is therefore not a linear one, but one of alternating periods of stability and transformative change. As Kuhn points out, the acceptance of new paradigms by scientists is not always a rational process. It is sometimes an act of faith (again not in the religious sense) and a consequence of dynamics in the scientific community. If a new paradigm has influential advocates, it is more likely that scientists will quickly accept changes and replace the previously valid paradigms. Samir Okasha comments on Kuhn's contribution to the development of science as being "essentially focused on the social context of science." For Kuhn, "science is a social activity and the existence of a scientific community that is linked by a commitment to a collective paradigm is a pre-condition for the normal functioning of science."

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<sup>19</sup> Paolo Rossi, *Rojstvo moderne znanosti v Evropi*, Založba /\*cf., Ljubljana, 2004.

<sup>20</sup> Thomas Kuhn, *Struktura znanstvenih revolucij*, Založba Krtina, Ljubljana, 1998. Published in 1962 with the original title *The Structure of Scientific Revolutions*, this book is often said to be the most important work in the field of the philosophy of science in the last fifty years.

In terms of the connection between science and society, Andrej Ule also introduces the concept of scientific knowledge as a social category, as the collective knowledge of the scientific community. Scientific knowledge has merged with new forms of work and capital directly, and itself has become an input to production, thus transforming society into a “knowledge society.” Of course, as Ule emphasizes, changes are dependent on people and their capabilities, on whether they are sophisticated enough to avoid technocratic and other manipulations that occur in the process of globalization. Veljko Rus expresses the same concern, though formulated differently, when he speaks of the importance of civil society for the development of society as a whole, the importance of civil society as a force that prevents the dominant role of the state. These concerns are justified as regards the current incarnation of the state—through its policies and its subservience to the interests of capital.

Samir Okasha discusses the question of the choice of values in scientific research, and states that it would be illusory to expect that scientists impartially conduct research for the sake of the research itself, and do not become engaged with the potential practical values of the research. The fact that private companies with clear commercial interests finance many scientific researchers adds credibility to Okasha’s concerns.

In his discussion of the “knowledge society,” Ule also discusses the conclusions of Karin Knorr Cetina<sup>21</sup> who observes that knowledge is like the process of production with its own characteristics. She also believes that the “knowledge society” is not only a society with more specialists, more technical instruments, and more interpretations by experts, but it is a society that is permeated with the “knowledge culture.” The knowledge culture is a total system of structures and mechanisms that serves knowledge and is developed through the articulation of knowledge. This conclusion is in keeping with the views of Veljko Rus.

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<sup>21</sup> Karin Knorr Cetina, *Epistemic Cultures. How the Sciences Make Knowledge*, Cambridge, Harvard University Press, 2003, in: *Ibid.*, Ule.

Ule<sup>22</sup> states that knowledge is a good that emerges because of its distribution<sup>23</sup> among many individuals and, through its distribution, it develops and multiplies. Knowledge emerges and is constructed as the organized community of researchers. We can no longer conceive, for example, of geniuses, such as Aristotle and Leonardo da Vinci, who are generalists and universalists, in today's scientific communities. One of my interviewees had a similar thought regarding the team organization of science and leadership in science:

In contrast, I also think that it is necessary to engage in international work, work that is not connected only to the narrow research framework. We no longer live in the days of Galileo and Newton, when two gentlemen correspond with each other, and one of them reflects on their ideas and then there is some great discovery that has enormous long-term consequences. Of course, that might still be possible, I don't deny it, but today cutting-edge research is generally the product of the structured and well-planned efforts of a whole team of people, which in turn means that it is no longer sufficient that people are good researchers, that they have some great inspiration, but that there is also capable leadership that knows how to organize a group, to run a meeting, to coordinate things, to financially manage things. That doesn't mean that everyone in the groups needs to know everything, but rather that functions are divided, so the whole research group works as a team in order to reach the highest goal. Without that, it doesn't work. It doesn't matter if your professor is some kind of ultra-genius with his hair sticking out all over the place and his left shoe always untied. He can't do anything on his own. Okay, once in a while they may put him on television because he's funny, but in reality he's just a buffoon who cannot run organized groups with precisely defined goals that know where they want to be in 15 years and what they need to do to get there. They have a vision; no, they have a vision and a plan.

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<sup>22</sup> Ibid., Ule, 223.

<sup>23</sup> Distribution here means the ongoing processes of giving and taking information, arguments and counter-arguments, the exchange of experiences and doubts in the communication networks that characterize contemporary society.

That's essential. In science today, the organization is the most essential entity." (*the stargazer*)

Scientific communities have extremely developed communications structures that include methods of transferring and disseminating information. Indeed, Andrej Ule<sup>24</sup> believes that the transfer and dissemination of information among these communities is the fastest among all human groups.

Science is a complex activity where success can only be achieved with a combination of individual striving, intensive cooperation, and effective organizational work. Intensive cooperation with other scientists is important for both young researchers and for well-established and prominent representatives in individual fields of research.

Ule<sup>25</sup> also states that "scientific communities are systems of activities where many related activities take place simultaneously, sometimes even in competition with each other, but are by necessity grouped in larger units in which each scientist performs his work in a network of cooperative and competitive relationships with other scientists." Ule emphasizes that scientists are able to compete with each other in a civilized and non-combative manner.

In his work, Pierre Bourdieu<sup>26</sup> discusses the theoretical closure of the scientific space and explains that the logic of scientific battles arises from the dependence of science on two types of sources: purely scientific sources that are incorporated into the process, and financial sources that facilitate the purchase of research equipment and the payment of personnel and researchers. Scientists must ceaselessly struggle to obtain specific means of production in areas where both forms of scientific capital function and are available. According to Bourdieu, the structure of the scientific field is defined by the current power relationship between the protagonists in this struggle,

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<sup>24</sup> Ibid., Ule, 225.

<sup>25</sup> Ibid., Ule, 247.

<sup>26</sup> Pierre Bourdieu, *Znanost o znanosti in refleksivnost*, Liberalna akademija, Ljubljana, 2004.

that is to say by the structure of the distribution of specific capital that scientists accumulated during previous battles. Bourdieu continues that precisely this structure gives researchers their positions, strategies, scientific perspectives, and objective opportunities for success. All scientific choices (the choice of domain, the choice of methodology, the choice of where to publish research results) are therefore a product of the relationship between position in the scientific field and the dispositions (habitus) of those who occupy the field. These choices ultimately have to do with strategic placement with the purpose of maximizing specific social and scientific rewards.

My informants often discussed that smallness of Slovenia as a problem in various contexts: that the smallness of the country allows not necessarily the most capable people, but those who have connection to power structures and interest groups, to acquire and maintain important positions, and to use those positions to defend the status quo:

I would say that there is a feeling that a few roosters rule the roost, and this is not because of their superior knowledge, but because they know how to crow the loudest, and this is always a problem in small countries if you don't have evaluation from outside. *(the fisherman)*

Pierre Bourdieu also refers to power relationships and organizations in the field of science. He claims that the effect of scientific revolutions involves the transformation of hierarchical importance, by which some things that were hitherto unimportant are reactivated because of new scientific thinking, and vice versa. Whole sectors of science can become unfashionable and there is a struggle within scientific fields for what remains current. The field that introduces new legitimate ways of working, can overturn power relationships, and introduce a new era.

### 3.1.3 University

If one returns once again to the historical overview of the development of science, one notes that universities, which were founded in the twelfth and thirteenth

centuries, played a particularly important role. Paolo Rossi<sup>27</sup> especially emphasizes that, during this period, the figure of the intellectual emerged as a person who worked in a trade and was therefore comparable to other members of the bourgeoisie. The emergence of the medieval city-state was important for the development of science because it was a place where not only goods were exchanged, but also knowledge. The first universities in Europe were established at the end of the twelfth century in Bologna, Paris, and Oxford, and elsewhere in Europe in the fourteenth century. Rossi cites Jacques Le Goff<sup>28</sup> to support the claim that universities were privileged sites of knowledge and became worthy of social recognition. Teachers were allowed to teach anywhere (*licentia ubique docendi*) and travelling students contributed to the unity of Latin-Christian culture. As Luca Bianchi<sup>29</sup> put it, the use of Latin as a tool of teaching encouraged the emergence of a “unified market” of instruction. Medieval universities became study centers of international significance among which people and ideas circulated.

Already at the beginning of the Renaissance, Italian universities were dedicated to law and medicine, while those in northern European emphasized theology and the so-called “liberal arts.” Italian students, as Paolo Rossi<sup>30</sup> writes, went to Oxford and Paris to study theology. Many students went across the Alps to Italy to study law and medicine. As a point of interest, Rossi points out that the students at medical colleges received diplomas in “art” or “philosophy,” and could continue their studies in “art and medicine” or in “philosophy and medicine.” The study of art at the time included mathematics, humanities, and moral philosophy.

Historical data about the emergence of universities, their role and importance in society that was recognized by rulers and centers of power, descriptions of the

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<sup>27</sup> Ibid., Rossi, 12.

<sup>28</sup> Jacques Le Goff, *Tempo della Chiesa e tempo del mercante e altri saggi sul lavoro e la culture del Medioevo*, Einaudi, Torino, 1977, 153-170. In: Paolo Rossi, *Rojstvo moderne znanosti v Evropi*, Založba / \*cf, Ljubljana, 2004.

<sup>29</sup> Luca Bianchi, *La filosofia nelle Università. Secoli XIII e XIV*, La Nuova Italia, Florence, 1997, 27. In: Paolo Rossi, *Rojstvo moderne znanosti v Evropi*, Založba / \*cf, Ljubljana, 2004.

<sup>30</sup> Ibid., Rossi, 297.

migration of students and teachers, the role of sponsors, and the meaning of language all offer interesting comparisons with contemporary times. Indeed, the dominant impression is that from the beginning of universities to this day, little has changed, and that the reason for the migration of academics today is essentially the same as it was then. In both cases, it had to do with finding better conditions for work, and the search for an intellectually open place where there is a lively exchange of ideas.

Paolo Rossi reports that 17<sup>th</sup> century universities made an effort to introduce new disciplines that gave priority to practical applications and innovations, thereby widening the circles of those for whom education was intended. It is interesting to compare this perspective with the goals of the Bologna reform for advanced education in Europe, which gave priority to access to study, transferability among programs and institutions, and the employability of graduates, defining them as the primary goals of higher education, in terms of both content and institutional design.

The specific historical conditions of the Netherlands in the 16<sup>th</sup> century provide an important and interesting counterpoint. The long-term battle for independence, the decentralized leadership, and qualities of tolerance and freethinking lent the Netherlands a very different set of conditions than the rest of Europe. Even at this time, the population was a mix of different nationalities, and William Orange I<sup>31</sup> saw the emergence of universities as the means for bringing about national unity. His judgment was largely accepted. Universities were established in Leiden (1575), Gröningen (1614), and Utrecht (1636). The financial situation was favorable, with high salaries attracting many foreign professors. Likewise many students came from foreign countries. Paolo Rossi offers one statistic that is both concrete and illustrative: namely, that 4,300 English-speaking students studied medicine in Leiden

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<sup>31</sup> William of Orange 1533-1584, founder of the Netherlands.

between 1575 to 1835. Just for the illustration: University of Ljubljana was established in 1919<sup>32</sup>.

The claims of Francis Bacon are also relevant to the understanding of the position of the scientist and science in society today. As Rossi<sup>33</sup> paraphrases Bacon: science that advances the glory and power of a specific country is morally less noble than science that works to benefit all of humanity. This view, albeit not as an evaluation of nobility or the lack thereof, is interesting for my study because it reveals science to be both a unified and global activity, as opposed to a local method of increasing the reputation of a specific nation state.

#### 3.1.4 Human capital

Among authors discussing human capital issue, Gary Becker,<sup>34</sup> the 1992 Nobel Prize winner for economics, defines human capital as being characterized by the education, skills, and knowledge of individuals in a given population that can be used to increase the economic growth of a country or a region. Human capital represents the investment of individuals into education, professional training, research work, and volunteer migration. The concept of human capital is not to be equated with the concept of the labor force per se, as the former represents a use of human capital that is only a potential component of the labor force. Andrej Ule<sup>35</sup> states that the shift from an economy based on physical material and energy to one based on knowledge led to a recognition of human capital as basic capital, and as the main driving force behind the new scientific-technical revolution. Ule also states that “the acquisition, development, and efficiency of individual skills is dependent upon values, social norms, and behavioral patterns in the social context. The observation of social

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<sup>32</sup> Univerza v Ljubljani. [http://www.uni-lj.si/o\\_univerzi\\_v\\_ljubljani/zgodovina\\_ul/ustanovitve\\_in\\_razvoj\\_do\\_konca\\_20\\_stoletja.aspx](http://www.uni-lj.si/o_univerzi_v_ljubljani/zgodovina_ul/ustanovitve_in_razvoj_do_konca_20_stoletja.aspx) accessed October 30, 2012.

<sup>33</sup> Ibid., Rossi, 10.

<sup>34</sup> Gary, S Becker, *Human Capital: A Theoretical and Empirical Analysis, With Special Reference to Education*, National Bureau of Economic Research, New York, 1964.

<sup>35</sup> Ibid., Ule, 273.



relationships, interactions, and networks becomes the necessary complement to the observation of the human capital of individuals.”

### 3.1.5 Globalization of science

Globalization in the field of science is among many other authors discussed also by Andrej Ule, who states that it is becoming more common to include universities and university institutes in the international knowledge markets. Researchers establish joint research centers that offer their achievements to interested users outside the narrow academic sphere and are assisted in this effort by interested economic entities. This reduces the need for centralized national institutions that lead or direct scientific and research activities, but increases the need for well-planned national policies whereby institutes offer support and funds for research activities that further selected strategic goals, and compensate for shortcomings in the field of research that the market cannot fill. The role of the government in supporting scientific and technological development is not eliminated, but becomes more selective and therefore more effective. There emerges a more decentralized leadership for scientific research, that takes place in a combination of government, private, and individual research formats, and provides information about the research needs of society. Ule also states that the current period of scientific development leads to the intensive scientification of social practices as a result of information technology and the globalization of the economy. In this period, science is not only a source of scientific knowledge, but it also functions as a social process in terms of its organizational structure. At the center of these changes, Ule observes that all forms of social practices are permeated by scientific work. Scientific work today, like all other kinds of work, demands communication among people and among various partners in different parts of the world in order to preserve the continuity of this kind of work through time. In this context, we have seen the arrival of new forms of social divisions of labor and knowledge that cannot be understood in terms of traditional organizational models of labor and knowledge. These new methods are based on so-called “knowledge management.”

Higher education community is under observation of many researchers among them I mention the approach of Tony Becher and Paul Richard Trowler<sup>36</sup> to a theory of academic relations, studies of the higher education community and culture of academic disciplines. In this context also the work of Clifford Geertz<sup>37</sup> is to be mentioned.

Information technologies, globalization, and the need for regular international cooperation have also changed the possible and necessary organizational methods of labor in science. Political and economic changes have enabled simple transfers from one country to the other and reduced bureaucratic obstacles to migration, all of which has led to the intensified migration of researchers. Slovenian researchers are no exception.

### 3.1.6 Mobility among academics

In recent years several studies have been done, for example by Sonia Morano-Foadi<sup>38</sup>, Heike Jöns<sup>39</sup>, Harald Bauder<sup>40</sup>, Christian Reiner<sup>41</sup>, David Cairns and Jim Smyth<sup>42</sup> and Louise Ackers<sup>43</sup>. Most of the studies are based on quantitative research, one of the most recent ones, that introduces qualitative research methods (interviews) was published by Driss Habti<sup>44</sup>.

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<sup>36</sup> Tony Becher and Paul R. Trowler, *Academic Tribes and Territories: Intellectual enquiry and the culture of disciplines*, 2<sup>nd</sup> Edition, Ballmor, Buchingham, The Society for research into Higher Education & Open University Press, 2001.

<sup>37</sup> Clifford Geertz, *Local Knowledge*, New York, Basic Books, 1983.

<sup>38</sup> Sonia Morano-Foadi, "Scientific Mobility, Career Progression, and Excellence in the European Research Area 1", *International Migration*, Vol. 43, 2005, 133 – 162.

<sup>39</sup> Heike Jöns, "Brain circulation and Transnational knowledge networks: studying long-term effects of academic mobility to Germany, 1954-2000", *Global Networks*, Vol. 9, 2012, 315 – 338.

<sup>40</sup> Harald Bauder, "The International Mobility of Academics: A Labour Market Perspective", *International Migration*, Vol. 89, 2012.

<sup>41</sup> Christian Reiner, "Brain competition policy as a new paradigm of regional policy: A European perspective", *Papers in Regional Science*, Vol. 89, 2010, 449 – 461.

<sup>42</sup> David Cairns and Jim Smyth, "I wouldn't mind moving actually: Exploring Student Mobility in Northern Ireland", *International Migration*, Vol. 49, 2009, 135 – 161.

<sup>43</sup> Louise Ackers, "Moving People and Knowledge: Scientific Mobility in the European Union 1", *International Migration*, Vol. 43, 2005, 99 – 131.

<sup>44</sup> Driss Habti, *Highly Skilled Mobility and Migration from MENA Region to Finland: A Socio-analytical Approach*. Publications of the University of Eastern Finland. Dissertations in Social

In order to study the migration of Slovenian researchers, I decided to look at those with PhDs in science because that group, being the most intellectually potent, would be interesting in terms of its role as cultural or human-social capital, and also because economic need was not the primary motivation for emigration. Those I interviewed came from the middle class rather than from a socially and economically threatened environment, something also discussed by Douglas S. Massey<sup>45</sup> who said that the most frequent middle-class emigrants come from an environment that is experiencing economic and social changes. This conclusion is also interesting in the context of the social changes that were experienced by Slovenian society in the period since independence in 1991, especially after the economic crises that began in 2007.

Joaquin Arango<sup>46</sup> writes about the inadequacy of current theories of migration, suggesting that the majority of them rely on economic push-pull factors while social and political factors are neglected. He also points out that with the emergence of new transnational spaces and communities, the study of migration has entered a new phase that will require new methods of study, and the shift of attention from one set of causes to other dimensions, such as social networks and transnationality. Jure Gombač<sup>47</sup> also describes the complexity of the decision to emigrate, suggesting that individuals choose between different directions and make decisions, based on available information, for combinations that they think will be best. Emigrants therefore actively engage in decisions about migration.

In their discussion of international mobility, Jacques and Anne Marie Gaillard<sup>48</sup> debate the appropriateness of various terms (brain drain, brain migration), and

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Sciences and Business Studies, No. 4, 2012. 248 p. [http://epublications.uef.fi/pub/urn\\_isbn\\_978-952-61-0863-6/urn\\_isbn\\_978-952-61-0863-6.pdf](http://epublications.uef.fi/pub/urn_isbn_978-952-61-0863-6/urn_isbn_978-952-61-0863-6.pdf), accessed on October 25<sup>th</sup> 2012.

<sup>45</sup> Douglas S. Massey et al, *Worlds in Motion: International Migration at the end of the Millenium*, Clarendon Press, Oxford, 1998.

<sup>46</sup> Joaquin Arango, *Explaining Migration: A Critical View*, Blackwell Publishers, Oxford – Malden, 2000.

<sup>47</sup> Jure Gombač, *Esuli ali optanti? Zgodovinski primer v luči sodobne teorije*, Založba ZRC, ZRC SAZU, Ljubljana, 2005.

<sup>48</sup> Jacques and Anne Marie Gaillard, "Introduction: The International Mobility of Brains: Exodus or Circualtion," *Science, Technology & Society* 2: 2 (1997), [www.sagepublications.com](http://www.sagepublications.com) accessed June 17, 2011.

analyze the phenomenon of the migration of highly-educated experts and academics, and the historical-economic conditions that have influenced it in the past and the present. One of the key factors in the discussion is the interest of the ruling elite for knowledge (sciences) and for creating conditions that will attract foreign academics. Rossi<sup>49</sup> draws from historical sources, finding illustrations of sympathetic relationships between leaders and artists: for example, that Ludwig XIV (1638-1715) called them “mes fous” and that Karel V (1500-1558) picked up a brush for Titian. These examples illustrate the changing status of the artist and serve as an illustration of relationships of the powerful to artists and scientists. Taking an example from antiquity, Gaillard notes that 45 of the 60 of the most important ancient Greek scientists, thinkers, and philosophers left the region of their birth, migrating in search of superior conditions for study, education, and research.

In the study of migration, and especially the migration of academics, it becomes clear that language has also played a role as one of the key factors in the transfer of knowledge. So, for example, Sanskrit and Pali, as the key languages at around 600 B.C.E., led to the expansion of universities such Taxila and Nalanda.<sup>50</sup> Similarly, Greek language and Hellenic culture led to the dominant role of Athens and later Alexandria. Arabic, as the dominant language of the Near East, was a condition for the blossoming of universities in Baghdad and Cairo. The growing influence of western Christianity in the Middle Ages led to the wide use of Latin, which in turn played a key role in spreading the influence of scientists and artists in Europe from the 11<sup>th</sup> century onward.

Today English is without doubt the *lingua franca* of the scientific world, especially in the natural sciences and technology. As such, English, in addition to other factors that will be discuss later, has played a decisive role in the flow of researchers from all parts of the world to the United States.

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<sup>49</sup> Ibid., Rossi.

<sup>50</sup> According to some sources, the oldest university emerged in India on territory that now belongs to Pakistan, <http://en.wikipedia.org/wiki/Taxila> accessed January 29, 2012.

In addition to a universal language that is a precondition for communication, there are other driving forces behind the migration of scientists: the individual desire for knowledge, the attraction of certain known cities and communities, the possibility of collaboration and competition with well-known scientists, and the interest of sponsors who finance migration and research itself. Despite the enormous social-economic changes that have arrived with new methods of production and economic relationships in many countries, the reasons that cause academics to emigrate remain fundamentally unchanged.

The ongoing and increasingly permanent emigration of academics and their limited contact with their home academic communities impoverish these communities, which creates a situation that causes more departures. The Nobel Prize winner Gunnar Myrdal<sup>51</sup> confirms that international migration triggers more migration and coined the term “cumulative causality,” namely that causality becomes cumulative, that each case of migration changes the social context within which future emigrants will make their decisions, and thus the next case of emigration becomes more likely.

The mechanism described above also functions in the framework of the migration of Slovenian researchers as is illustrated by the citation below, a statement made by one of my informants. He recounts that the first time he ever thought about emigration was in high school when a schoolmate decided before graduation to leave Slovenia and told his schoolmates and friends about this decision. After graduation, this schoolmate put his plan into action.

The first person I knew who moved abroad was a guy I knew who went to America right after high school. We all teased him in school but it was clear that he wanted to leave. He already had a plan. He didn't even know if he wanted to study medicine or economics, just that he wanted to leave. And that's something that, if it happens in your narrow circle, stays in your head, that it's an option that you can go somewhere, even right out of high school. It wasn't so serious but things started to change slowly, because Bežigrad

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<sup>51</sup> Gunnar Myrdal, *Economic Theory and Undeveloped regions*, Duckworth, London, 1957.

High School had an international baccalaureate program and what happened was that about 20 students in their junior and senior years were - I don't know the exact numbers but about half of that twenty came from Bežigrad's general program, half of that from our mathematics class, and half from a parallel class. Concentrated in that group were students who all had at least thought about the possibility of leaving Slovenia. (*the self-made man*)

Douglas S. Massey<sup>52</sup> comes to a similar conclusion as Myrdal. He also introduces, as one of the seven social-economic factors that effects emigration, the regional distribution of human capital. He says that emigration is a selective process, in which the most desirable are educated and highly-motivated young people, because of the regional distribution of human capital, are driven from the societies in which they were born, thus impoverishing these regions even further. The ongoing loss of capable people who would otherwise stimulate the economy leads to stagnation and even regression. The host countries, of course, are enriched by the immigration of talented people. Paradoxically a more developed system of schools and higher education only increases the likelihood of emigration and the problems of societies that export migrants, further expanding the likelihood that educated, innovative, productive workers will leave. This conclusion is reflected in the above statement in which a Slovenian intellectual emigrant describes how the ambition of his schoolmates in an internationally competitive high-quality school affected him.

In the study of international migration, it is also necessary to take into account the question of connections between family and friends, because information is exchanged within a network of emigrants, potential emigrants, former emigrants, and non-emigrants. Douglas T. Gurak<sup>53</sup> describes these networks as a series of reciprocal ties that connect all the groups in question. The influence of information transferred within such a network was apparent in my interviews: from information that was

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<sup>52</sup> Douglas S. Massey, "Social Structure, Household Strategies and the Cumulative Causation of Migration," *Population Index*, Vol. 56, No. 1, 1990, 3-26.

<sup>53</sup> Douglas T. Gurak, "Migration Networks and the Shaping of Migration Systems" in Mary M. Kritz, Lim Lean Lim, and Hania Zlotnik (eds.), *International Migration Systems. A Global Approach*, Clarendon Press, Oxford, 1992, 150-176.

brought into a family from academic parents of children who later also decided to emigrate, information exchanged between schoolmates in high school and colleagues in college. Another important factor that eases the doctoral candidate's decision to migrate to a foreign country is the connections his or her mentor has around the world. Arango<sup>54</sup> also writes about the importance of networks in the phenomenon of migration, arguing that the network is among the most important factors. In his opinion, migration networks have a multiplier effect, triggering a "chain reaction":

Somehow the first contact with science abroad took place very early, but what was really serious was when it happened in our circle. It seemed to me that it had a collective effect, what happens early on in your own circle, when you're still in high school. (*the self-made man*)

Within the global academic community, migration is often a search for better work conditions (especially for researchers who work in highly competitive fields) rather than for better economic conditions and personal life. George J. Borjas<sup>55</sup> writes of a sort of the push-pull effect with which host countries compete among themselves, making "migration offers" that potential emigrants can choose. In recent times, Austria has found a successful formula for attracting researchers with the establishment of the Institute for Science and Technology (IST),<sup>56</sup> ensuring balanced conditions for research and teaching work, resources for middle and long-term research projects in selected and highly promising areas of science. In this way, it has managed to attract top researchers from all over the world and create a competitive scientific environment.

It's hard to say, my own experience is limited but I know that the effects, how people move from place to place, are completely non-linear. In the sense that lots of little efforts can make no difference at all. If we could establish a sort of IST, for example, then we would see whether it would work or not. I'm

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<sup>54</sup> Ibid., Arango, 291.

<sup>55</sup> George B. Borjas, "Economic Theory and International Migration," *International Migration Review*, Vol. 23, No. 3(78), 1987, 457-485.

<sup>56</sup> Institute for Science and Technology Austria, <http://www.ist.ac.at> accessed November 11, 2011.

not saying that Slovenia has to do that, but if you want to do something, then that's the kind of thing you should do. It's kind of like a central bank intervening in the market. You have to come up with the biggest bazooka to have an effect. You have to bombard people from all different directions so they'll get the message from all over the place: from colleagues, from the internet, magazines, articles. Everywhere. So if you set up a new institute, it is in every article, every conference. You have to have a lot of money for this kind of promotion. There has to be the 'wow' factor to even put Slovenia on the map. Though I don't know: what would put Slovenia on your mental map.  
*(the self-made man)*

A similar project was launched in Japan with the establishment of the Okinawa Institute,<sup>57</sup> which offered exceptional conditions for research work to offset the geographical distance from more centralized locations.

Now there's Japan, who set up an institute in Okinawa that is like IST here, but Okinawa really is in the middle of nowhere, that's a nice way of putting it, and the whole thing was set up in Okinawa for political reasons and they know that, of course. How else are they going to get people to go there? But they really did it, they set up an institute in Okinawa, as I said for political reasons, and then they gave the people who went there so much money that others could only stare. It's far away, okay, it's far from everything, but a professor gets a half a million dollars just for travel over five years, a hundred thousand dollars a year for plane tickets so he can go wherever he wants without even thinking about money. Okay. I don't know if I'd go to Okinawa, but it isn't all about money. What does matter is that everybody knows about the money. But if there weren't that much money, I'd say no chance I'm going to Okinawa. I mean last year I lectured at summer school there. It was

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<sup>57</sup> Okinawa Institute of Science and technology  
[http://en.wikipedia.org/wiki/Okinawa\\_Institute\\_of\\_Science\\_and\\_Technology](http://en.wikipedia.org/wiki/Okinawa_Institute_of_Science_and_Technology) and  
<http://www.oist.jp/en.html> accessed November 11, 2011.



nice and all, but it's really far. Twenty-two hours by plane from America, four hour lay-over in Tokyo." (*the self-made man*)

Many of the researchers working at IST come from America, where, according to information from certain sources in the academic sphere, the recent sense of decline in the area of scientific research is discernible. My informants as well explicitly mentioned Asia as region that, because of economic growth, was becoming an attractive destination for top researchers from all over the world.

I think that the danger to the West, the only danger, is that the brightest thinkers will go where there is the best motivation to go. And right now the best motivation is in Asia. At the moment, the beginning was slow, but the economy is developing, and the people are incredibly motivated, and there is no longer a need for them to come to the West, while we are a little bit spoiled. We are just spoiled enough to think that it is self-evident that people will come to us. Slovenia has a nice position, potential, because we started at such a low position that things can only get better. We are developing and, as far as science is concerned, so much potential that I think Slovenia could take advantage of it. America is, in any case, going through a period of suffering because it will be increasingly difficult for it to maintain its position. There's a little impatience in America, but I'm still glad I came because there is still more competitiveness among Americans. Just look at how far they've come. But it's no longer the same atmosphere, full of motivation, and somehow it seems to me that they already realize that this is a period of greater competition and that every scientific community has certain ups and downs, and the best minds will go where conditions are best, where they can pursue their ideas in a place where you do not deal with government bureaucracy and that sort of thing." (*the artist*)

China, following the liberation of the regime and increased emigration, was exposed to the problem of "brain drain." Since 1989, China has systematically introduced various measures and programs that will encourage collaboration with and

connections among expatriates in the fields of science and economics and the Chinese homeland. Among others, David Zweig<sup>58</sup> discusses the reasons for emigration: the lower quality of high education in comparison with the west, the lower quality of research equipment, and the lower quality of instructors. China has suffered from the loss of social capital (that is, the emigration of undergraduate and post-graduate students prior to the conclusion of their education), though, from the standpoint of the national economy, that is still a smaller loss than the departure of highly educated experts or PhD holders. China, however, is a very quickly developing country and is trying to shift the flow of human-social capital in the other direction and thus cultivate and keep knowledge that will be useful at home. The goal of this policy is not to prevent the emigration of human capital from China, but the preservation and enhancement of connections, collaboration, and the flow of knowledge into China. Given the specifics of the country, its particular situation, and the potential of stimulating a feeling of commitment to a homeland, China has instituted a policy called “serving the nation” that is comprised of many activities and measures that are coordinated under various ministries, economic entities, and universities. The goal of these collective policies is that members of the diaspora will be drawn into collaboration by favorable conditions that include financial incentives, doctoral and post-doctoral positions in universities, the establishment of foundations that finance returnees, the establishment of “incubators” and high-tech companies, the simplification of the entry and exit of highly-talented locals and foreign investors into the economy. The purpose of the above policies is not only to encourage repatriation. China, despite its economic flowering, still does not offer and cannot afford the technical infrastructure and equipment needed for high-tech production. It can be concluded from the above that it makes sense to introduce measures for collaboration with expatriate scientists until the point when the conditions in a country are sufficient to take fuller advantage and possibly repatriate its top experts and researchers. If expatriate scientists can be drawn into frequent close

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<sup>58</sup> David Zweig, Siu Fung Chung, and Han Donglin, “Redefining the Brain Drain: China’s Diaspora Option,” *Science, Technology & Society*, Vol.13, No 1, 2008, 1-33, [www.sagepublications.com](http://www.sagepublications.com) accessed March 3, 2011.

collaboration, their potential can be used despite the fact that they remain abroad. A statement by Michael Zielenziger, one of the authors of a report on scientific progress in China, is quoted in an article.<sup>59</sup> Specifically, he claims that in the coming years an anticipated 80,000 PhD holders will return to China from Europe and the United States to work in laboratories where research costs only one-fifth of what would be needed for the same research in the United States. From this sort of data, it is not much of a stretch to expect China to take over world leadership in science by the year 2020. Chinese investment in science supports this strategy. In 2001, China invested almost €75 billion into science, and it is anticipated that by 2015 this investment will be increased to some 2.2% of the annual GDP. Segments that are given priority are nanotechnology, clean energy, and research of the stem cells. Emigrant scientists are lured back with permanent professorships, well-equipped laboratories, and sometimes even a one-time sum of €100,000. There is a special effort to attract Nobel Prize winners and leading experts in the natural sciences, and to develop elite research and educational institutions housing the most important research laboratories. The development of these institutions currently absorbs more than two-thirds of government funds invested in research.

Zweig also mentions that the older members of the diaspora (those between 36 and 50 years old) are more willing to collaborate with the Chinese homeland, which is understandable since these are people who have achieved advanced professional, leadership, and academic positions. They have influence, are well connected, and have access to information. They are key decision makers, while at the same some continue to feel a strong affiliation to their homeland. What is noteworthy is the greater willingness to collaborate with the homeland of those emigrants who have completely settled their status in the foreign country where they live (they have permanent visas or even citizenship) than those whose status is not yet settled, or who have not even reached a final decision regarding where they will permanently reside. This tendency was confirmed by one of my older informants who had lived in

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<sup>59</sup> Mišo Renko, "Pobegli možgani se vračajo domov", *Delo*, August 8, 2011, 3.

a foreign country with his Slovenian family for many years, had completely integrated into his new surroundings, and had taken the citizenship of the foreign country. This informant showed a greater interest in a professional connection to Slovenia and had even found a way to work at one of the Slovenian universities for several weeks each year. Earlier he had once tried to return permanently but, despite the fact that he was an assistant professor at one of the oldest and best European universities, the University of Ljubljana did not give him so-called ‘habilitation’ (the license to teach locally):

Already as an assistant professor at a foreign university, I first asked for habilitation at Ljubljana University and I remember that were three eminent people in the commission - one of them still occupies a high position, a very high position in the Slovenian scientific system - and they wrote that I didn’t have the proper credentials because I didn’t have pedagogical experience teaching in the Slovenian language. (*the fisherman*)

Given the complexity of migration and the factors that affect it, we can observe migration not only as a system but also from a dynamic perspective, as it includes both a network and individual decisions that arise from personal and family environments. We also need to look at migration in the context of political and cultural influences.<sup>60</sup> These will be discussed in the fourth chapter and particularly how they influenced the interview subjects in this study.

### 3.1.7 Transnationality

Transmigrant<sup>61</sup> is a term, greatly developed by the work of Nina Glick Schiller<sup>62</sup>, which is used to describe mobile subjects that create and sustain multiple social relations that link together their societies of origin and residence. These mobile

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<sup>60</sup> Stalker’s guide to international migration, Networks and systems, [http://pstalker.com/migration/mg\\_theories\\_3.htm](http://pstalker.com/migration/mg_theories_3.htm) accessed May 5, 2011.

<sup>61</sup> <http://en.wikipedia.org/wiki/Transmigrant>, accessed on October 28, 2012.

<sup>62</sup> Nina Glick Schiller, Linda Basch, Cristina Szanton Blanc: “Migrant or Transmigrant: Theorizing transnational migration”, *Anthropological Quarterly*, Vol. 68, No. 1, jan 1995, 48 – 63, [www.sscnet.ucla.edu/history/faculty/henryyu/Hist597/Schiller\\_et\\_al.pdf](http://www.sscnet.ucla.edu/history/faculty/henryyu/Hist597/Schiller_et_al.pdf) accessed October 28, 2012.

subjects are now viewed as transnational migrants or transmigrants to distinguish them from migrants and immigrants.

In her study on migration, Peggy Lewitt<sup>63</sup> uses the concept of transnationality, which is also mentioned by Elizabetta Zontini,<sup>64</sup> and is defined as belonging to several social fields or to life in the social fields of two or more societies at the same time. Transnationality is becoming an increasingly frequent phenomenon in the 21<sup>st</sup> century. According to Lewitt, transnational migrants: “work, pray, and express their political interests in more contexts than a single nation state.” Although not all emigrants are active in the transnational sense, their contributions are cumulative and need to be added to the experiences of those emigrants who actively participate in various ways in two or more countries. The author emphasizes that assimilation or integration on the one hand and transnationality on the other are not mutually exclusive. The use of the transnational perspective for understanding migration demands the relaxation of methodological nationalism or the expectation that social life automatically takes place within the framework of a nation state. Instead emigrants are observed within the transnational social field. This widens the analysis to include those who emigrated as well as those who remain at home but are connected to emigrants in transborder social networks.

I will try to use this approach in providing an analysis of the contemporary academic world: transnational researchers are those that relocate to other countries and also those that remain at home but continue to have intensive communication with academics outside the country. It is more difficult to draw a dividing line within the scientific community wherein the migration of a small part of the academic population effectively integrates all the researchers in the global academic community. I will use the term “*transnational scientific field*” in this larger sense.

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<sup>63</sup> Peggy Lewitt, *Transnational Migrants: When Home Means More Than One Country*, Migration Policy Institute, Washington, 2010, [www.migrationinformation.org/Feature/print.cfm?ID=261](http://www.migrationinformation.org/Feature/print.cfm?ID=261) accessed July 22, 2010.

<sup>64</sup> Elizabetta Zontini, *Transnational Families*, University of Nottingham, Nottingham, 2007, [http://wfnetwork.bc.edu/encyclopedia\\_entry.php?id=6361&area0All](http://wfnetwork.bc.edu/encyclopedia_entry.php?id=6361&area0All) accessed July 7, 2010.

Lewitt defines the social field as a set of multiple, overlapping networks of social relationships according to which ideas, practices, and sources are organized, and through which they can also be transformed.

The perspective of the social field, as Peggy Lewitt writes, reveals the difference between “ways of being” and “ways of belonging.” Ways of being refer to the actual social relationships and practices of individuals, and include institutions, organizations, and experiences on different levels, which in turn generate categories of identity that are attributed to individuals, but that individuals choose for themselves. To the contrary, ways of belonging refer to an identity that is marked by an individual’s conscious connections to a specific group. These choices are not symbolic, but concrete, for example, the wearing of religious signs, the hanging of the flag, or the choice of a certain type of food. Such a perspective calls for the re-articulation of the concept of society, which is no longer coterminous with the borders of a single-nation state. Emigrants are included in multi-layered, multi-sited transnational social fields that encompass both emigrants and those who remained at home. With this re-articulation of the concept and redefinition of the borders of social life, Peggy Lewitt and Nina Glick Schiller<sup>65</sup> emphasize that the inclusion of individuals in a nation and the simultaneous establishment of transnational ties are not mutually exclusive.

In the introduction to the book “Transnational Lives,”<sup>66</sup> Akira Iriye and Rana Mitter write that: “transnationality does not necessarily depend on geography, on moving from one part of the world to another. It can also be a vicarious experience, that is to say, when one writes or reads about a transnational human being, one's own thinking may become transformed.” The editors of this collection also claim that individual lives transcend national borders.

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<sup>65</sup> Peggy Lewitt and Nina Glick Schiller, “Conceptualizing Simultaneity: A Transnational Social Field Perspective on Society,” *International Migration Review*, Vol. 38, No. 145, 2004, 595-629.

<sup>66</sup> Delsey Deacon, Penny Russell, Angela Woollacott (eds.), *Transnational Lives: Biographies of Global Modernity, 1700 to present*, Palgrave Macmillan, New York, 2010.

In any case, the concepts of multiculturalism and assimilation will no longer suffice for an understanding of contemporary migration, because today's emigrants live transnational lives, cross borders, belong to many cultures, speak different languages, and are loyal to many places. Among many other authors Mirjam Milharčič Hladnik<sup>67</sup> claims that it is necessary when thinking about multicultural dialog to assume that migration is not a sign of crisis, is not a characteristic of industrial societies, and does not necessarily imply the modernization of an economy. Instead, she points out that people have always moved and are still moving. The reasons for migration are complex and intimate, and the consequences of migration are seen in all countries, both those from which people emigrate and those to which people immigrate. This strikes me as an important observation: that the person that leaves his or her country is both an emigrant and an immigrant, and the choice of terminology is entirely dependent on the point of observation.

In longitudinal studies of migration habits, it can be seen that during periods of extraordinary events (either crisis or opportunity) those who would normally not be included in transnational practice often mobilize and become active. An illustration of this phenomenon can be found in a study of Slovenian post-graduate students living in Great Britain during the time of Slovenian independence. The study was conducted by Jana Valenčič.<sup>68</sup> One of my informants reports about his experience from that time:

I would say that I never felt homesick, but during the euphoria of 1993 and 1994 it struck me that I might want to go back. During that whole period, I worked for the Slovenian congress. I was a contact for Denmark. I can proudly say that the first normal country to recognize Slovenia was Iceland. That was my domain at the foreign ministry, but that was only because there weren't better people back then. But that time quickly passed and better people came along and I didn't have any contact with those people anymore.

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<sup>67</sup> Mirjam Milharčič Hladnik, "Migracije in medkulturni odnosi," *Organizacija znanja*, Vol. 12, No. 4, 2007, [http://home.izum.si/COBISS/OZ/2007\\_4/html/clanek\\_03.html](http://home.izum.si/COBISS/OZ/2007_4/html/clanek_03.html) accessed November 3, 2008.

<sup>68</sup> Jana Valenčič, *Slovinci v Londonu 1991-1994*, Arhiv RS, Ljubljana, 2011.

Except for two guys from the ministry I got together with once in a while. War comrades. (*the fisherman*)

### 3.1.8 Brain drain

The understanding and evaluation of the relevance of the concept of “brain drain” is completely individual and, despite the long years of use since the term’s introduction, each person essentially uses it his or her own way, depending on value systems and precision of expression. A similar phenomenon can be observed in the literature that tracks the development of the concept over time. The standard Slovenian dictionary<sup>69</sup> explains it with the terse phrase: the flight, or escape, of brains from one country to another. The English dictionary Merriam-Websters<sup>70</sup> defines the phrase as follows: “the departure of educated or professional people from one country, economic sector, or field for another, usually for better pay or living conditions.” Neither of these two definitions captures the complexity of the phenomenon or makes mention of the geo-political conditions that often give rise to it.

The term “brain drain” was first used in 1963 in a document penned by the Royal Society in London<sup>71</sup> that reported a discussion on the departure of scientists from Great Britain to the United States, which offered scientists better conditions and higher pay. At that time in Europe, the migration of scientists was characterized as potentially negative as Europe had been the world center of science until that time and itself had attracted scientists from all over the world.

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<sup>69</sup> SSKJ, Slovar slovenskega knjižnega jezika, [http://bos.zrc-sazu.si/cgi/a03.exe?name=sskj\\_testa&expression=beg+možganov&hs=1](http://bos.zrc-sazu.si/cgi/a03.exe?name=sskj_testa&expression=beg+možganov&hs=1) accessed November 11, 2011.

<sup>70</sup> Merriam-Webster. Slovar, <http://www.merriam-webster.com/dictionary/brain+drain?show=0&t=1307606957> accessed on November 11, 2011.

<sup>71</sup> Definition of the term “brain drain” Wikipedia, [http://en.wikipedia.org/wiki/Brain\\_drain](http://en.wikipedia.org/wiki/Brain_drain) accessed November 11, 2011.



As many, among them Jacques and Anne Marie Gaillard<sup>72</sup>, explain, in colonial and post-colonial times, it was common for the local elite of a colonized country to send its children to the country of its colonizer for school so they would be raised and educated in the administrative leadership system and could thus become leaders in what would one day be independent countries. Is that pattern repeating itself in the present time if we look, for example, at the United States? It is the contemporary colonizer of the world, has favorable immigration policies, fellowships, and excellent conditions for research work, thus luring the best intellectual potential from all over the world.

In the 1970s, largely because of the use of advanced technologies in industry, there was a substantial flow of human capital from south to north. This enabled countries that did not have developed systems of higher education and industry to send off their young people to obtain much needed knowledge. These countries encouraged migration and study in foreign countries, of course under the assumption that the young emigrants would one day return to their home country and contribute the knowledge they acquired to its progress.

After 1990, two new phenomena began to affect migration among academics: because of political changes in Eastern Europe, the fall of communist regimes, and the subsequent economic and social changes, many scientists from former communist countries relocated to the West. At the same time, there was a return flow of emigrants from Southeast Asia, who had lived and worked in the United States, back to their native countries (mostly South Korea, Taiwan, and Singapore). This return flow was encouraged by the economic boom that these countries were experiencing at the time, and that reduced the differences in work and life conditions in the home countries and the countries to which scientists had emigrated.

In addition to migratory flows from south to north and from east to west, there were also discernible flows from north to north (and west to west), as Gaillard points out,

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<sup>72</sup> Ibid., Gaillard.

namely from Great Britain, Switzerland, France, Sweden, and Canada to the United States.

For migrations among European countries we can no longer use the term “brain drain” since the emergence of the European Union because, due to the free flow of capital, goods, and people, movements within this space are considered internal migration, which also means that the concept of “flight” is no longer applicable, as movement is voluntary and free. However, from the standpoint of the individual country that loses human capital because of emigration and does not replace it with immigrants from other countries, or does not succeed in persuading its own emigrants to return, the phenomenon is nevertheless negative. Countries can be distinguished from each other as net recipients of high-quality professionals or as net losers. The phenomenon is not limited to developing countries, but also developed countries in the West recognize the possible long-term consequences of these flows, and for this reason employ a variety of policies to encourage expatriates to return, or at least policies that will establish a closer collaboration with them. Ingo Forstenlechner<sup>73</sup> takes note of the following programs that encourage the return of researchers to their native country: Great Britain (Wolfson Foundation Research Award - ensuring that scientists will receive higher salaries scientists when they return to Britain), Italy (Rientro dei Cervelli), Spain (Ramon y Cajal), and Austria (Brainpower - financing travel and relocation).

In the past, the approach of individual countries to the inflows and outflows of research potential has been varied, depending on historical, political, and economic factors. Anne Marie and Jacques Gaillard<sup>74</sup> look at the case of Japan where laboratories, in the 1960s, were practically closed to foreigners. During the same period, Japan strongly encouraged its own researchers to go abroad, seeing this as an

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<sup>73</sup> Ingo Forstenlechner, “Brain Drain in Developed Countries: Can Governments do Anything to Bring Expatriates Back?”, *Public Policy and Administration*, Vol. 25, No. 156, 2010, [www.sagepublicatons.com](http://www.sagepublicatons.com) accessed March 8, 2011.

<sup>74</sup> Jacques and Anne Marie Gaillard, “The International Circulation of Scientists and Technologists: A Win-Lose or a Win-Win Situation?” *Science Communication*, Vol. 20, No. 1, 1998, 106-115.

“extension” of domestic research. Conditions in Japan changed in the 1980s and the beginning of the 1990s when the Japanese scientific community opened up and began to welcome foreign researchers, especially from South Korea. Arjun Appadurai<sup>75</sup> suggests that the Japanese have a reputation for being hospitable to new ideas when it comes to products, but is stereotyped as being inclined to export (all) and import (only some) goods, and as being notoriously closed to the immigration of human capital, as are other countries such as Switzerland, Sweden, and Saudi Arabia.

Virtually all developed countries have experienced the outflow of research potential. The Gaillards discuss the example of France and Great Britain from which scientists relocated to the United States where they found better conditions for their research work because the United States actively cultivated an environment that would attract the best researchers in the world. In recent years, it has been observed, especially in the United States, that the presence of a large percentage of foreign researchers, along with a fall in the interest of domestic youth for jobs in research and development, can be a two-edged sword, as changing global conditions can create a situation where large numbers of international researchers decide to return to their native countries or to third countries that offer better conditions for research work. For research laboratories that employ only immigrant scientists, an unforeseen change in the environment that leads to the return of such scientists to their home countries, can threaten the work and research projects of whole groups. Generally the diversity of cultures in research groups is viewed as an advantage, but there are cases where laboratories employ exclusively foreign scientists. The quote below discusses the nationalities employed in a laboratory in Germany:

And what I really like about where I am now is that this really is a city of students, half the city is a university, and there are many foreigners, which means there is a great intermingling of different cultures. Also in our laboratory, there are a lot of people from all over the world and there is a high level of tolerance toward people who are different. In our laboratory, we

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<sup>75</sup> Ibid., Appadurai, 37.

are exposed to many cultures: we have Japanese, Chinese, Americans, Argentineans, Italians, Spaniards, Greeks, and the pulse of the laboratory is already different from one at home where you have ten Slovenians who are all alike. (*the musician*)

In terms of regions and countries where the outflow of human capital has been a serious problem for decades, first and foremost are India and Africa because of weak infrastructure, unfavorable economic conditions, and a poorly developed scientific sector. Neither has managed to create a return flow of emigrants or even to establish closer collaboration between domestic and foreign-based scientists. Still, there are success stories triggered by exceptional individuals. One of the examples of a returnee is Sam Pitroda<sup>76</sup> who came back to India from the US in the early 80s and pioneered indigenous telecoms technology and established the Centre for the Development of Telematics. In the context of India's own development as an IT power - and the downturn in the US economy, a lot more information/software scientists have either come back voluntarily or have been lured by excessive salaries. In terms of the IT industry there is a lot of collaboration. Microsoft's second largest R&D centre outside of Seattle is located in Hyderabad. The Indian Institutes of Technology and Indian Institute of Science have been involved collaboratively with top US and European institutes for a number of years. However it may be different in other science-related areas where there has not been a return flows.

In contrast to India and Africa, South Korea, Singapore, Taiwan, and, after political reforms, China as well, are all countries that have successfully lured back many expatriate scientists.

Two factors must be in place for successful repatriation: first, close links between a propulsive local scientific sector and the scientific diaspora, and second, long-term economic growth. Repatriation is therefore possible and successful only under conditions where home countries provide expatriate scientists with comparable conditions for research work and the transfer of the newest technology into the

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<sup>76</sup> Sam Pitroda, <http://www.sampitroda.com/index.php?lang=en>, [http://en.wikipedia.org/wiki/Sam\\_Pitroda](http://en.wikipedia.org/wiki/Sam_Pitroda) accessed October 24th 2012.

economy. The Gaillards<sup>77</sup> introduce data from Taiwan, Singapore, and Hong Kong, indicating the significant growth in the number of scientific publications from these countries, specifically a doubling between 1989 and 1994, which was the direct result of the repatriation of scientists. The scientific production of the best universities in these countries is now comparable with universities in the West. Likewise, it is telling that out of the 193 companies that were established in the Taiwanese Hsinchu technological park, a full 81 were founded by Taiwanese engineers and scientists who had returned home from the United States. In addition to the abovementioned consequences of repatriation, it was also observed that Chinese scientists returning to their native country were more willing to do serious work, to be more efficient, use more creative scientific methods, prepare better scientific plans, and mastered foreign languages better than their domestic counterparts who had never emigrated.

Opinions vary as to whether the migration of scientists from one country to another should be considered a loss for one and a gain for the other. In the past, when the dominant flow was more clear (because of the developed west / north and the undeveloped east / south), there was a general consensus that the countries to which scientists migrated gained, the ones from which they emigrated lost. Now with the development of the world economy - in the sense of globalization, the emergence of the single market, the free flow of people, goods, and capital - this phenomenon has become so complex that it is more difficult to evaluate. Current theory, policies, and the actual experience of individual countries indicate that proactive scientific policies, the development of the economy, and the recognition of the significance of research work can help an originating country make use of their scientific diaspora. As a result of this, the phrase “brain drain” in literature and discussion has started to be replaced with more appropriate terms such as “brain flow” or “brain exchange”, “brain circulation” and even “brain gain.” Today, many poor countries that are cut off from their intellectual elite in foreign countries are faced with the question of

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<sup>77</sup> Ibid, Gaillard.

whether a new intellectual elite could even emerge under local conditions. The possibility of return remains an open issue, along with the social and economic consequences of the repatriation of scientists and intellectuals to their originating country. Only the resolution of these issues will give answers to the question of which country gains or loses with the emigration of scientists. Stephen Castles<sup>78</sup> emphasizes that migration is always the consequence of economic and social factors and that some environments offer development and encouragement while others put up obstacles that increase inequality. Yet, given how other authors have looked at migration, given the somewhat narrow view of the abovementioned push-pull factors in the study of migration, explanation such as Castles' no longer satisfactorily explain contemporary migration. Castles believes that the effects of migration are dependent on the nature of migration and how individual countries and other interested public entities react to the situation. Castles also engages with questions of characterizing internal and international migration - looking at specific cases of internal (such as within the European Union) and international migration. Paradoxically, the former may involve relocation to a geographically quite distance place with a completely different cultural environment, while the latter may involve moving to a nearby country with a similar history, culture, and language. Drawing from all these many different patterns, the author concludes that a precise definition of migration is neither possible nor objective, and in any case will always be the consequence of specific national politics and economic conditions.

The world-systems theory as described by Immanuel Wallerstein<sup>79</sup> suggests that international migration is a by-product of global capitalism. Contemporary patterns of international migration tend to be from the periphery (poor nations) to the core (rich nations) because factors associated with industrial development in the First World generated structural economic problems, and thus push factors, in the Third World.

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<sup>78</sup> Steven Castles, "International Migration at the Beginning of the twenty-first century: global trends and issues," *UNESCO*, Oxford, VB, Malden, MA USA: Blackwell publishers, 2000.

<sup>79</sup> Immanuel Wallerstein, *Utopistike; Dediščina sociologije*, Ljubljana: Založba / \*cf., (rdeča zbirka), 1999.

### 3.2 Historical and legal framework

In the elucidation of the historical framework, I will limit myself to a discussion of the basic events that occurred at the time of Slovenian independence and will not return to the previous Yugoslav period, that is thoroughly discussed by Peter Vodopivec<sup>80</sup> and Božo Repe<sup>81</sup>. By way of introduction, I will quote my oldest informant, the only one who went to school and attended institutes of higher education during Yugoslav times.

And again I would say it was something of an adventure, and a little bit because of the fear of the smallness of Slovenia, Yugoslav communism, the totalitarian system, whatever, but mostly it was so bloody poor here, and we noticed that even more when we started to travel. When Milka Planinc<sup>82</sup> was in power, we actually had to leave deposit when we left the country, that's how economically hopeless it was. I called it authoritarian but that was wrong. If we had been smarter, we would have seen that the system was in its final convulsions in the 1980s, that collapse was inevitable, but we had no idea that things would ever improve." (*the fisherman*)

Because of these circumstances, the uncertainty of his future, and the desire to widen his professional horizons, this informant left Slovenia:

I have to say that then, in 1986, when we left, when I ran away and my passport wasn't valid, I had no idea that the system would ever change. When we returned in 1988, and then in 1989 when there were the first demonstrations in Prague, and the Hungarians were crossing over the Austrian border, it was an unbelievable shock. And I must also say that given the break-up, the agony of Yugoslavia, I thought it would go on forever, and now I am extremely grateful that things are the way they are in Slovenia,

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<sup>80</sup> Peter Vodopivec, *Od Pohlinove slovnice do samostojne države*, Modrijan založba, Ljubljana, 2006.

<sup>81</sup> Božo Repe, *Jutri je nov dan: Slovenci in razpad Jugoslavije*, Modrijan založba, 2002.

<sup>82</sup> Milka Planinc (21 November 1924 – 7 October 2010) was an ethnic Croatian Yugoslav politician. She served as a Prime Minister of Socialist Federal Republic of Yugoslavia from 1982 to 1986. She was the first female head of government in the history of real socialism.

[http://en.wikipedia.org/wiki/Milka\\_Planinc](http://en.wikipedia.org/wiki/Milka_Planinc) accessed June 28, 2012.

independence, such rapid progress. It's really good, though it is a small country." (*the fisherman*)

Nineteen ninety-one was a turning point for Slovenia, as it acquired the status of an independent country for the first time in its existence. As Božo Repe<sup>83</sup> claims and the historical record shows, Slovenia did not have a significant national program of independence until the second half of the 1980s. The secession of Slovenia from Yugoslavia was the consequence of a growing rift between Yugoslavia and the developed world, the unwillingness of Yugoslavia to modernize and be included in European integration, and finally to give national rights to its constituent republics. Repe also emphasizes that, in Slovenia, the fear of Italians and Germans was replaced by a fear of Serbs, and that independence came as a combination of liberal ideas and nationalist sentiments.

The independence of Slovenia would not have been possible without the changes that took place as a result of the collapse of global communism, the end of the bipolar world, and the political, economic, and interethnic crisis in Yugoslavia. As Repe writes: "without the external changes, the so-called Slovenian spring would probably have ended with the defeat of alternative movements and civil society, the settling of accounts with opposition groups, and the forced exit of reform communists from the political scene."

After international recognition of the independent Republic of Slovenian by the international community in 1991, Slovenia became a member of the United Nations in 1992 and of the International Monetary Fund and the Council of Europe in 1993. In 2004, Slovenia entered the European Union and NATO. In 2007, it joined the Eurozone and, at the end of the same year, became a part of the Schengen border agreement.

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<sup>83</sup> Božo Repe, "Pot v samostojnost", [www.ff.uni-lj.si/oddelek/zgodovina/wwwrepe/intervju.pdf](http://www.ff.uni-lj.si/oddelek/zgodovina/wwwrepe/intervju.pdf) accessed October 5, 2011.



Božo Repe also analyzes the relationship of the political elite to the new country and concludes that the management of Slovenia is quite traditional, and is comparable to the situation of developed countries in the 1960s. Thus the advantages offered by a small, flexible, socially cohesive society were used to advance the development of the new country. This historical process includes some darker aspects such as the case of the “erased,” the political parties’ interpretation of power as a means of dividing loot rather than serving the people, the absence of developed participative democracy and civil society (which Slovenian had enjoyed in the 1980s), the reduction of the social cohesion among people, and the transition being understood as an opportunity for enrichment. The rise of unbridled political power and money became the main criteria for success. Repe emphasizes that this can no longer be interpreted as the blundering of a new country, but represent errors in the very construction of the independent Slovenia.

In providing an overview of the historical framework and the social transformations of that period, it is important to mention changes that took place in the universities after 1989, that is after the fall of the Berlin Wall, in the newly emerged countries that were the successors to the communist states. The subject was discussed by many, for example Dieter Simon<sup>84</sup> and Péter Darvas<sup>85</sup>. As Ralf Dahrendorf<sup>86</sup> notes, it was easy enough after the fall of the communist regimes to introduce democratic mechanisms, but that didn’t mean citizens suddenly became active, nor did it ensure the emergence of lively political communities. Universities in post-communist countries also had to adapt to the new conditions and undertake reforms that brought them closer to the standards of the West. Ralf Dahrendorf observes that in 1989 the structure of higher education in Central and Eastern Europe was expensive and static. Of all the countries in the former eastern bloc, the only university system that experienced rapid and fundamental transformation and renewal was that of Eastern Germany, and this was only because the Western German system was simply laid

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<sup>84</sup> Dieter Simon, “Westliche Theorie – östliche Identität”, In: *Transit* Vol. 9, 1995, p. 159 - 168

<sup>85</sup> Péter Darvas, “Institutional Innovation in Central European Higher Education”. *TERC*, Vol. 9, Vienna, 1996, p. 74.

<sup>86</sup> Ralf Dahrendorf, *Universities after Communism*, Edition Körber-Stiftung, Hamburg, 2000.

over the existing one. In other countries in the region, higher education slid into a state of “genteel poverty,” in which professors and other academics lost most of their privileges, some their jobs, and did not become promoters of change. Dahrendorf also mentions the general impression that institutions of higher education expected protection from post-communist governments rather than pressure to change—but protectionism leads to stagnation. Paradoxically, they also wanted legislation that would guarantee their autonomy.

Dahrendorf proposes three conditions that should be part of the contemporary system of higher education: to be accessible to all who have the desire and capacity to attend; to be broadly-conceived, encompassing all areas from practical training to advanced research, from general education to lifelong learning; and that institutions of higher education should be open to their immediate surroundings, from businesses to local communities to the wider society. Slovenia was not included in the Hanna Arendt Award project evaluating the reforms of higher education systems in post-communist countries.<sup>87</sup>

Studies show that access to higher education in Slovenia is high, but that a relatively low proportion of students who commence their education complete it. The percentage of Slovenians with higher education is growing, many new institutions of higher education have emerged, many university professors are active in politics, and government ministries have a high percentage of employees with doctoral degrees. One unique feature of Slovenia, when compared with the other post-communist countries after 1989, is that Slovenia had a well-developed civil society in the closing decades of the twentieth century. Academics were often the driving force behind new initiatives and, although there were exceptions, most of these academics were able to keep their jobs at universities and were not treated as dissidents, which was often the case in other Eastern European countries. Not surprisingly, along with political and

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<sup>87</sup> In the years from 1995 to 1999, the Körber Foundation in Hamburg and the Viennese Institut von den Wissenschaft für den Menschen (IWM) gave the Hannah Arendt Award for the innovative reform of higher education in the Czech Republic, Romania, Hungary, and Poland.

economic changes came changes in ways of thinking and working, perspectives, mentalities and values.

Dahrendorf<sup>88</sup> also refers to a speech made by Anthony Giddens at the conferment of the Hannah Arendt Award in 1998 when he stressed that universities must be responsive to dynamic changes in the environment, including globalization and information technologies. Equally important, universities must secure financing from different sources so that they will remain proactive and independent.

In the subsequent section, I will describe the organizations that are active in the scientific research and higher education spheres in Slovenia, and the current position of the Ministry of Higher Education and Technology,<sup>89</sup> which, since the 2012 election, falls under the auspices of the new super-ministry: the Ministry of Education, Science, Culture, and Sport.<sup>90</sup> I will also list public agencies in the field of research and development:

*ARRS*,<sup>91</sup> the Slovenian Research Agency, is to manage professional, developmental, and executive tasks in coordination with the National Research and Development Program and in the framework of the applicable budget memorandum and the state budget. ARRS manages various areas in the public interest in an effort to assure long-term, professional, and independent decision-making regarding selected programs and projects that are financed by the state budget and other financial sources. The following is a partial list of the agency's duties: selecting research and infrastructure programs that serve the public interest in the field of research; securing financing for these programs; managing the program of young researchers as well as other programs; monitoring the relevance, innovation, efficiency, quality,

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<sup>88</sup> Ibid., Dahrendorf, 99.

<sup>89</sup> Ministrstvo za znanost, visoko šolstvo, in tehnologijo, <http://www.mvzt.gov.si/> accessed January 24, 2012.

<sup>90</sup> Ministrstvo za izobraževanje, znanost, kulturo in šport, <http://www.mizks.gov.si/> accessed March 20, 2012.

<sup>91</sup> Javna agencija za raziskovalno dejavnost RS, <http://www.arrs.gov.si/sl/> accessed December 14, 2011.

competitiveness, and professionalism of individuals and organizations that the agency finances; encouraging international collaboration.

*TIA*,<sup>92</sup> the Slovenian Technology Agency, should provide professional, developmental, and executive services with the goal of accelerating technological development and innovation in accordance with the National Research and Development Program and other national programs in the field of technological development and innovation. In practical terms, this involves planning, directing and financing activities for the promotion of innovation and the acceleration of research and development activities and the transfer of knowledge. The agency should provide consultation in individual areas, encourages international collaboration and the transfer and use of international technological knowledge.

*Japti*,<sup>93</sup> the Public Agency of the Republic of Slovenia for Entrepreneurship and Foreign Investment of the Republic of Slovenia, has following tasks: promotion and stimulation of the development of the general business environment and the emergence, functioning, and development of companies, and the encouragement of general entrepreneurship in Slovenia; consulting and informing users, direct financial aid for the development of companies that reach a high level of competitiveness in the Slovenian economy, and efforts to attract direct foreign investment into Slovenia.

*The Slovene Human Resources and Scholarship Fund*<sup>94</sup> was established at the end of 2006 by the Government of the Republic of Slovenia by adopting the Act, with which it transformed the existing Ad futura, Science and Education Foundation of the Republic of Slovenia, Public Fund into the Slovene Human Resources and Scholarship Fund. With the new organizational form the Fund keeps Ad futura programmes and takes over various other programmes until now managed by other

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<sup>92</sup> Javna agencija za tehnološki razvoj RS, <http://www.tia.si/> accessed December 14, 2011.

<sup>93</sup> Javna agencija RS za podjetništvo in tuje investicije, <http://www.japti.si/> accessed December 14, 2011.

<sup>94</sup> The Slovene Human Resources and Scholarship Fund, <http://www.sklad-kadri.si/en/> accessed October 25, 2012.

institutions, as well as develops a variety of new programmes. The Fund is now the central national management institution for scholarships and development of human resources and offers scholarships for study and research, increases international mobility of students and researchers, provides financial incentives to employers for development of human resources, awards excellence as well as provides up-to-date information and helps build a network for minimising obstacles to mobility of students, researchers and employees.

*CMEPIUS – Centre of Republic of Slovenia for Mobility and European Educational and Training Programms* <sup>95</sup>An overriding aim of the ERASMUS program is to help create a ‘European Higher Education Area’ and foster innovation throughout Europe. In addition to exchange actions (‘transnational mobility’), ERASMUS helps higher education institutions to work together through intensive programmes, networks and multilateral projects. Thanks to all these actions, ERASMUS has become a driver in the modernisation of higher education institutions and systems in Europe and, in particular, has inspired the establishment of the Bologna Process. Two key tasks set for the program are (a) to support the achievement of a European Area of Higher Education and (b) to reinforce the contribution of higher education and advanced vocational education to the process of innovation. An overriding aim of the ERASMUS program is to help create a ‘European Higher Education Area’ and foster innovation throughout Europe. In addition to exchange actions (‘transnational mobility’), ERASMUS helps higher education institutions to work together through intensive programmes, networks and multilateral projects. Thanks to all these actions, ERASMUS has become a driver in the modernisation of higher education institutions and systems in Europe and, in particular, has inspired the establishment of the Bologna Process. Two key tasks set for the program are (a) to support the achievement of a European Area of Higher Education and (b) to reinforce the contribution of higher education and advanced vocational education to the process of

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<sup>95</sup> *CMEPIUS – Centre of Republic of Slovenia for Mobility and European Educational and Training Programms*, <http://www.cmeplus.si/en/llp-in-slovenia/erasmus.aspx> accessed October 25, 2012.

innovation. An overriding aim of the ERASMUS program is to help create a 'European Higher Education Area' and foster innovation throughout Europe. In addition to exchange actions ('transnational mobility'), ERASMUS helps higher education institutions to work together through intensive programmes, networks and multilateral projects. Thanks to all these actions, ERASMUS has become a driver in the modernisation of higher education institutions and systems in Europe and, in particular, has inspired the establishment of the Bologna Process. Two key tasks set for the program are (a) to support the achievement of a European Area of Higher Education and (b) to reinforce the contribution of higher education and advanced vocational education to the process of innovation.

Legislation covering the field of higher education, as well as research and development activities, underwent significant changes since Slovenia became an independent country in 1991. The following two strategic documents were perhaps the most important at the time of this writing (second half of the 2011) to the fields of higher education, and research and development:

*The law for higher education*<sup>96</sup> deals with status issues and general conditions effecting higher education. It defines the role of public services in the field of higher education and arranges for methods of financing. The law also deals with status issues of libraries, institutes, and other entities that are necessary for the realization of the goals of higher education, including entities that are part of universities and student dormitories.

*The law for research and development activities*<sup>97</sup> defines the principles, goals, and methods of executing policies in the field of research and development that are financed from the state budget and other sources (such as European programs and funds, local communities and companies), and also directs activities that lead to the

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<sup>96</sup> Zakon o visokem šolstvu, [www.uradni-list.si/1/content?id=76475](http://www.uradni-list.si/1/content?id=76475) accessed October 10, 2011.

<sup>97</sup> Zakon o razvojni in raziskovalni dejavnosti, [www.arrs.gov.si/sl/akti/zak-rrd-jan08.asp](http://www.arrs.gov.si/sl/akti/zak-rrd-jan08.asp) accessed October 10, 2011.

achievement of goals related to social and economic development in Slovenia. This law also determines the organization of research and development activities, the conditions for carrying out these activities, and generally supports the transition to a knowledge-based society that places a development priority on research and development activities.

Along with this law, the Republic of Slovenian also passed the EU Council directive 2005/71/ES on October 12, 2005 that defines the special procedure for allowing entry to citizens of third countries who would forward the goals of scientific research (UL L 289, November 3, 2005, p 15).

*The law for working conditions*<sup>98</sup> defines general work conditions as set out in a contract between employers and employees, in accordance with the text of the abovementioned directive of the EU Council. The goals of the law are including employees in the work process, assuring the harmonious flow of the work process, preventing unemployment, and respecting the rights of employees to free employment, the dignity of work, the protection of the interests of employees, and the safety of work conditions.

*The law for taxes*<sup>99</sup> defines the amount and payment of taxes, duties, and income tax.

*The law for the payment of employees in the public sector*<sup>100</sup> defines the system of pay for functionaries and public servants in the public sector, the rules of establishing pay levels, calculating pay levels and payment, and rules for determining the extent of resources available for salaries. This law determines the procedure for establishing and changing salary ranges in the public sector. It introduces the principle of equal

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<sup>98</sup> Zakon o delovnih razmerjih, [www.mddsz.gov.si/si/zakonodaja\\_in\\_dokumenti/veljavni\\_predpisi/zakon\\_o\\_delovnih\\_razmerjih/](http://www.mddsz.gov.si/si/zakonodaja_in_dokumenti/veljavni_predpisi/zakon_o_delovnih_razmerjih/) accessed October 6, 2011.

<sup>99</sup> Zakon o davkih občanov, [http://zakonodaja.gov.si/rpsi/r09/predpis\\_ZAKO49.html](http://zakonodaja.gov.si/rpsi/r09/predpis_ZAKO49.html) accessed October 6, 2011.

<sup>100</sup> Zakon o sistemu plač v javnem sektorju, [www.uradni-list.si/1/objava.jsp?urlid=200795&stevilka=4738](http://www.uradni-list.si/1/objava.jsp?urlid=200795&stevilka=4738) accessed October 6, 2011.

pay for equal work positions, titles, and functions, as well as methods for assuring the transparency and the reward elements of the pay system in the public sector.

Two other key strategic documents in the fields of higher education and research and development are: *Research and innovation strategy for Slovenia 2011-2020*<sup>101</sup> and the *National Program for higher education 2011-2020*.<sup>102</sup>

The authors of both documents, passed by the Slovenian parliament on May 24, 2011 with the joint title of “Drzna Slovenija” (Bold Slovenia), outline what is necessary for Slovenia to become a knowledge society, that will be capable of successfully answering the challenges of the current era and becoming a competitive society in the future.

In 2010, a new science council<sup>103</sup> was founded under the auspices of the Office for Slovenians Abroad. In addition to the presidents of all Slovenian universities and four of the largest scientific institutes, a number of the most successful Slovenian scientists working in foreign countries were invited to sit on the council. The goal of the council was to define policies for the Slovenian government that impact the Slovenian research sphere and to cooperate in the preparation of new research and development strategies for Slovenia. Despite early enthusiasm, the project has not produced visible results.

### 3.3 Quantitative research in the period from 1990 to 2009

In addition to data from the Statistical Office of the Republic of Slovenia<sup>104</sup> (SURS) measuring changes in the fields of science, technology, research, and higher

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<sup>101</sup> Raziskovalna in inovacijska strategija Slovenije 2011-2020, [www.uradni-list.si/1/content?id=103975](http://www.uradni-list.si/1/content?id=103975) accessed October 6, 2011.

<sup>102</sup> Nacionalni program visokega šolstva 2011-2020, [www.uradni-list.si/1/content?id=103885](http://www.uradni-list.si/1/content?id=103885) accessed October 6, 2011.

<sup>103</sup> Odbor za znanost, [http://www.uszs.gov.si/si/znanost\\_mladi\\_gospodarstvo/znanost/odbor\\_za\\_znanost/](http://www.uszs.gov.si/si/znanost_mladi_gospodarstvo/znanost/odbor_za_znanost/) accessed December 12, 2011.

<sup>104</sup> Statistical office of the Republic of Slovenia, [www.stat.si/eng/index.asp](http://www.stat.si/eng/index.asp) accessed December 12, 2011.



education, a number of related quantitative studies have been undertaken in Slovenia since 1990, some of which include comparisons with other countries in the European Union. This segment has received a lot of attention recently, which means that in coming years more high-quality sources of data will be available. I will now introduce some of the most important past studies which were carried out in several works by Milena Bevc and co-authors<sup>105, 106, 107, 108, 109</sup> and by Sonja Kump and co-authors.<sup>110</sup> In this chapter, I discuss the key data and main conclusions of the relevant studies. More detailed quantitative analysis exceeds the frame of this dissertation. For those interested, more detailed data can be found in the cited literature.

Milena Bevc<sup>111</sup> cites key findings that show the conditions and trends in human resources in development research, science, and technology in EU countries. In terms of incentives for human resources in research and development activities, the European Union countries lag behind its largest competitors (the United States and Japan). On the basis of current conditions and trends, there will be too few European graduates in the fields of science and technology, and salaries and work conditions in

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<sup>105</sup> Milena Bevc, Klemen Koman, and Nika Murovec, *Človeški viri v razvojno-raziskovalni dejavnosti v državah Evropske unije – stanje, trendi in politika*, Inštitut za ekonomska raziskovanja, Ljubljana, 2003. This study represents the first phase of the research sub-project entitled “Human resources in research and development activities in Slovenia (conditions and emigration) compared with other EU countries,” which was part of the larger project entitled “Mechanisms and measures to transfer knowledge from the academic and research spheres into the private sector in light of new innovation paradigms – Status and trends in Slovenia as compared to developed countries in the EU.”

<sup>106</sup> Milena Bevc, Klemen Koman, and Nika Murovec, *Človeški viri v razvojno-raziskovalni dejavnosti v državah Evropske unije – stanje, trendi in politika*, Inštitut za ekonomska raziskovanja, Ljubljana, 2004.

<sup>107</sup> Ibid., Bevc. Milena Bevc, Klemen Koman, and Nika Murovec, *Človeški viri v razvojno-raziskovalni dejavnosti v Sloveniji in primerjava z državami EU – Stanje in emigracija*, Inštitut za ekonomska raziskovanja, Ljubljana, 2006.

<sup>108</sup> Milena Bevc, Marko Ogorevc, and Klemen Koman, *Emigracija slovenskih raziskovalcev in njihova zaposlitvena mobilnost znotraj Slovenije*, Inštitut za ekonomska raziskovanja, Ljubljana, 2011.

<sup>109</sup> Milena Bevc and Sonja Uršič, *Potencialni odliv človeških virov iz RRD v tujino in v druge dejavnosti v Sloveniji ter primerjava s stanjem sredi 90.let*, Inštitut za ekonomska raziskovanja, Ljubljana, 2006.

<sup>110</sup> Sonja Kump, Darka Podmurnik, and Mirna Macur, *Človeški potenciali v slovenski raziskovalno-razvojni dejavnosti (RRD) v obdobju 1990 – 1999, raziskovalna dejavnost na Slovenskem*, Slovenska akademija znanosti in umetnosti, Ljubljana, 2002.

<sup>111</sup> Milena Bevc, “Človeški viri v razvojno-raziskovalni dejavnosti v Sloveniji v zadnjih 15 letih in primerjava z državami EU,” *IB revija* 1/2007, 56-72.

research and development activities will be below standard and not sufficiently attractive to lure the best minds and hold on to them. Bevc also summarizes certain EU recommendations<sup>112, 113, 114</sup> regarding human resources policies in research and development activities, which emphasize the urgency of stimulating interest in the natural sciences, mathematics, and technology in high school, and improved lessons in these subjects, the improvement of work conditions and financing of higher education and research institutes, and thus enhancing the attractiveness of careers in science and technology, and assuring the efficient functioning of laboratories that employ experienced researchers.

During the period of post-independence, politicians have at least rhetorically emphasized human resources in the field of research and development activities as having a central role, and defined development potential as crucial to Slovenia given that the country has few natural resources that make it competitive in the global economy. Everyone who has been involved in the National Research and Development Programs<sup>115, 116, 117</sup> emphasize the importance of introducing internationally comparable indicators of the condition and development of human potential for research and development activities, increasing the numbers and percentage of PhD holders in science, increasing the transfer of scientific knowledge to the economic sector, and finally making necessary changes and improvements to the educational system.

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<sup>112</sup> *Benchmarking National R&D Policies – Human Resources in RTD (STRATA-ETAN Expert Working Group)*, European Commission, Brussels, 2002, [http://ec.europa.eu/research/conferences/2004/sciprof/cd/pdf/at/supplement08\\_en.pdf](http://ec.europa.eu/research/conferences/2004/sciprof/cd/pdf/at/supplement08_en.pdf) accessed October 9, 2011.

<sup>113</sup> *Third European Report in Science & Technology Indicators*, European Commission, Brussels, 2003, [http://cordis.europa.eu/indicators/third\\_report.htm](http://cordis.europa.eu/indicators/third_report.htm) accessed October 9, 2011.

<sup>114</sup> *Key Figures 2005: Towards a European Research Area – Science, Technology and Innovation*, European Commission, Brussels, 2005, [http://ec.europa.eu/invest-in-research/key05\\_en.htm](http://ec.europa.eu/invest-in-research/key05_en.htm) accessed October 9, 2011.

<sup>115</sup> Nationalni razvojni program 1995-2000, [www.uradni-list.si/1/objava.jsp?urlid=19958&stevilka=485](http://www.uradni-list.si/1/objava.jsp?urlid=19958&stevilka=485) accessed on October 9, 2011.

<sup>116</sup> Nationalni razvojni in raziskovalni program 2006-2010, [www.uradni-list.si/1/content?id=67936](http://www.uradni-list.si/1/content?id=67936), accessed November 11, 2011.

<sup>117</sup> Ibid., Nationalni program visokega šolstva, 2011-2020.

Since 1993, SURS has been publishing comparable data on research and development activities according to the Frascati methodology whereby employment is expressed in the equivalent of full-time employment (FTE) and includes only those who are employed in the research and development sector who spend at least 10% of their time working in this sector. This method captures all those employed in the research and development sector regardless of the format of employment, including those who are employed permanently and those who work on short-term projects or on a contractual basis, as well as those who are not researchers per se, but are technologists, management, and general personnel.

I was interested in data that revealed the educational profile of those employed in the academic and research sectors, the number of researchers who relocate to foreign countries (either temporarily or permanently), and the number of those who return to Slovenia.

In terms of the number of PhD holders as a percentage of those who were employed during the period from 1992 to 2004, the number has increased from 14% to 25%, the most educated sectors of the economy being higher education (48%) and the government sector (33%). The number of PhDs employed in the business sector is considerably lower at 5%. In 2004, PhD holders comprised 24% of those employed in the private non-profit sector.

Milena Bevc, in the context of a SWOT analysis about the relative conditions and trends effecting human resources in the field of research and development in Slovenia from 1993 to 2004, comes to the following conclusions: “the principal danger is the continuing lag in Slovenia behind other countries in the EU-15 in terms of both the relative number of researchers employed and the total number of human resources engaged in research and development in the business sector. For this reason, it is a matter of the utmost urgency to increase the flow of human resources into this sector.” Bevc sees the greatest opportunity in increasing the share of researchers as a proportion of all those employed in research and development activities, and in improving their level of education. Bevc also emphasizes the

importance of human resources for Slovenia because it is a small country without significant natural resources. For this reason, she warns that this segment of the population needs to be treated carefully and conditions need to be modified to prevent their departure to other countries or indeed to other segments within Slovenia. She also comes to the conclusion that a significant portion of Slovenian research potential that relocated to foreign countries in the mid-1990s transformed into permanent emigrants, the majority of whom are technical experts and researchers in mathematics and the natural sciences.

Milena Bevc's newest data<sup>118</sup> shows an upward trend in the emigration of Slovenian researchers. Specifically for the period from 1995 to 2004, there were 73 documented relocations (from organizations that participated in the study) on the basis of which we can extrapolate the number for the whole population during this period - 102 researchers. Comparative data for the period from 2004 to 2009 show 88 documented relocations (from the organizations cooperating in the study) on the basis of which we extrapolate the number of the whole population - 128 researchers. In the period from 1995 to 2004, therefore, an average of eight researchers emigrated each year. In the subsequent period from 2004 to 2009, the average number of researchers emigrating each year increased to 17. (Extrapolating this data to the total population, 24 researchers emigrated each year.) Indeed, during the period from 2004 to 2009, fully one-third of all researchers who left Slovenia were young researchers from the two young government programs: MR (young researchers in academia) and MRG (young researchers working in the private sector). Some of these departed researchers do return to Slovenia. Bevc reports that during the period from 1995 to 2004, 21% of researchers who had emigrated returned to Slovenia, though this number decreased to 10% during the most recent period (14-16% of MR and MRG participants). Physicists, economists and chemists are the most likely to emigrate. The preferred destinations are the United States, the Netherlands, and Great Britain.

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<sup>118</sup> Milena Bevc, "Beg možganov med slovenskimi znanstveniki, Spol: moški, starost: 37 let, izobrazba: doktor fizike, ciljna država: ZDA," *Delo*, August 13, 2011, 18-19.

In the article Maja Prijatelj<sup>119</sup> draws from Bevc's data and conclusions, and adds that numbers have increased during the most recent period from 2004 to 2008 and the number of returning researchers has declined. Moreover, the number of researchers employed in the private sector who have emigrated is also on the rise. As the main reason for their emigration, young researchers employed in research institutes cite better conditions for research work, while those employed in the private sector cite better economic opportunities. It is also possible to conclude on the basis of the financing of young researchers that Slovenia has become a favored destination for young researchers from the former Yugoslavia and Eastern Europe. Since 2004, 56 young researchers from these regions have been financed, mostly sponsored by the Jože Stefan Institute.

Statistical data<sup>120</sup> for 2009 indicate the following characteristics about the PhD population in Slovenia: that on December 31, 2009, there were 6,477 PhD holders up to the age of 64 years old, of which 38% (2,443) were women. A little less than 60% of the total were between 35 and 54 years old. The largest number of PhD holders were in the natural sciences (27%), with doctorates from technology and technological fields following in second place (22%). The large majority of doctorates had been received in Slovenia, with only 9% received in foreign countries. This last bit of data supports my hypothesis that there is a strong link between the location where a doctorate is received and the ultimate work place of the person who received it. The statistical data shows that 92% of all PhD holders were employed, two-fifths were professors in institutions of higher education, and only 10% were directors, managers, or high-placed administrators. The data also shows that PhD holders do not change their employment often (68% have not changed jobs for the last ten years), that they are satisfied with their employment, that more than 40% are even "very satisfied" with the independence they have at their jobs, with the intellectual challenges, and the location of their employment. The greatest

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<sup>119</sup> Maja Prijatelj, "Izgubljam doktorje znanosti," *Delo*, August 9, 2011, 1.

<sup>120</sup> *Kariera doktorjev znanosti, Slovenija, 2009 - končni podatki*, SURS, 2011, [www.stat.si/novica\\_prikazi.aspx?ID=3951](http://www.stat.si/novica_prikazi.aspx?ID=3951) accessed September 9, 2011.

dissatisfaction was expressed about the poor prospects of advancement and income for their work. Some 14% of PhD holders had worked temporarily in international settings but most had returned for family or personal reasons. Six percent have the intention of leaving Slovenia within the next year, and cite the main reasons for the relocation as academic and employment related.

SURS does not systemically collect emigration figures for the population of Slovenia or specifically on top experts in scientific fields. In 2010, SURS collaborated for the first time with the international statistical study PhD Careers (2009)<sup>121</sup> and in this way acquired some data about the international mobility of Slovenian scientists. The results of this research revealed that in 2009, 6,477 PhD holders lived either temporarily or permanently in Slovenia. In the period from January 1, 2000 to December 31, 2009, 920 of these PhD holders relocated for at least three months to another country where they did not have permanent residence, to undertake either post-doctoral studies or some sort of research activity. Sixty-one percent of these trips were to other countries in the European Union. SURS bases these figures on administrative information and data regarding the permanent and temporary residence of PhD holders and the yearly changes in emigration trends. Because of laws protecting the security of personal data, SURS can only share partial data about individual PhD holders and, from this data, the identity or name of the persons cannot be ascertained. The most recent data from SURS indicates the international relocation of 11% of Slovenian PhD holders. From this partial statistical data, it can be estimated<sup>122</sup> that there are approximately 12,000 Slovenian researchers and, of the total, 10% reside either temporarily or permanently in foreign countries.

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<sup>121</sup> Statistično raziskovanje karier doktorjev znanosti. Research report, [www.uszs.gov.si/si/znanost\\_mladi\\_gospodarstvo/znanost/projekti/](http://www.uszs.gov.si/si/znanost_mladi_gospodarstvo/znanost/projekti/) accessed December 18, 2011.

<sup>122</sup> For example, the interview with the academic Dr. Boštjan Žekš [www.mojaslovenija.net/politiki/intervju\\_dr\\_bostjan\\_zeks.html](http://www.mojaslovenija.net/politiki/intervju_dr_bostjan_zeks.html) accessed December 19, 2010. The article discusses the views of the minister without portfolio who led the Agency for Slovenians Abroad from 2008 to 2011 and dedicated himself to working with Slovenian emigrant scientists and increasing possibilities for collaboration with Slovenia. During this period, a scientific committee was established in this agency, which began compiling a list of Slovenian emigrant scientists working in foreign countries. In the interview, Žekš uses the term “elite migration” and notes that such emigrants

Drawing on the existing results of statistical research, Milena Bevc<sup>123</sup> uses polling techniques with researchers who work in Slovenia, both those who hold masters degrees and those with PhDs, in order to discover how they evaluate the conditions for research work in Slovenia. Such polling is necessary because statistics alone cannot provide the insight that is crucial for the creation of policies that would improve these conditions and for a general development strategy. In 2005, a polling of researchers was conducted in which researchers responded to questions about work conditions, the hierarchy of their values, the places that best provide these conditions and allow for the realization of their professional goals. Participants were asked about the demand for their scientific skills and their international mobility. The research results give a picture of the Slovenian research sphere as perceived by researchers who live and work in Slovenia and provide an interesting mirror image to the conclusions of my own research, which deals with the perceptions of Slovenian researchers who have decided to pursue their profession outside of Slovenia. From this perspective, one of Milena Bevc's most interesting conclusions is that among the values that researchers find the most important are work satisfaction, a good research infrastructure, the availability of key publications, and professional independence. The majority, some 80% of the polled researchers, believes that their technical equipment entirely or at least partially meets international standards in their field. To the question of whether they believe (whether in Slovenia or elsewhere) that they can better achieve their professional goals in the next five years, the majority answered that they could achieve at least two of their most important goals only outside of Slovenia: namely, good research infrastructure and proper pay for their work. Among the various goals considered important by the polled researchers that could be satisfied in Slovenia, was safety in the workplace. My interviewees did not specifically discuss workplace safety and it did not appear from the narratives that they considered workplace safety, or even a secure contract, as a goal per se. In Milena Bevc's research, another interesting assessment emerged: namely, that

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do not associate with emigrant associations, which is why knowledge about their life and activities in foreign countries is limited.

<sup>123</sup> Milena Bevc, "Razmere v slovenski znanosti – zaznave raziskovalcev," *IB revija*, 1/2009, 25-35.

researchers in Slovenia were often asked to perform tasks that could be done by a less educated employee. Nearly 40% of researchers working in Slovenia reported having the feeling that their supervisors were not interested in the difficulties encountered in their everyday work life. One final point of interest is that among the goals cited as the least important (or relatively unimportant) was the researchers' reputation in society and the standing of the organization for which they worked.

### 3.4 Theory of memory and narrative life stories

In the selection, preparation, and actual process of conducting the narrative interviews and presenting them as the quantitative research in this dissertation, I encountered many situations, some unexpected, others not, connected to the personalities of my informants, their interests, their current mood, and the surroundings in which the interviews took place. At the outset, I would like to emphasize that the goal of the interviews was not to find a single truth, but rather to recognize possible patterns, common themes that appear in the narratives and reveal the context in which the informants live. As Gary Knowles<sup>124</sup> put it, we understand life stories as "life in context": in other words, lives embedded in social, religious, historical, economic, and educational settings, subordinated to the influence of families, communities, and social institutions, dependent on the cultural landscape, personal convictions, intimate events, independent decisions, and the consequences of all the above.

As with any form of communication, the narrative interview brings with it interesting and unrepeatable situations, interactions that come from personal qualities, the passing moment, and the motives of both interviewer and the interviewee / narrator. The underlying assumption, which must not be forgotten, is that no statement of the subject is wrong, because everything emerges from his or her personal experience, is an expression of the experience of the individual in specific circumstances, and

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<sup>124</sup> Gary J. Knowles and Ardra V. Cole, *Lives in Context, The Art of Life History Research*, Altamira Press, Oxford – New York, 2001.



memories of events. Robyn Fivush<sup>125</sup> describes “autobiographical memory” as memories about the self, distinct from ordinary memories, because it also includes information about why a specific event is interesting, important, or even essential to the narrator.

The narrator, from the moment an event occurred in the past to the moment in the present that it is described, changes and matures, as do his or her perspectives and values. A described event is always an interpretation of an actual event but also depends on the condition of the narrator at the time of the telling. It is necessary to realize that every narrator wants to show him or herself in the best possible light, and will present interpretations of past events in such a way that does not damage his or her own self-image, or threaten his or her reputation in public.

Not only is the narrative itself an interpretation offered by the narrator, but the interviewer adds another layer of subjectivity. Regardless of the desire for the most objective understanding, the analysis of a life story is an interpretation of an interpretation. It is a complex process, involving a close reciprocal bond and interaction between the interviewer and the narrator, and the ongoing dilemma of the narrator who must make a judgment as to what the interviewer wants to hear. Narrated life stories therefore are unique and unrepeatable, because in a different setting with a different interviewer, the narrative would be different.

The interaction between the narrator and the interviewer is, according to Kaja Širok,<sup>126</sup> powerfully structured, intersubjective, and a part of the circumstances from which it emerges. Tanja Petrović<sup>127</sup> also writes about the relationship between the researcher and the subject (which I refer to here as interviewer and narrator and

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<sup>125</sup> Robyn Fivush, “Remembering and Reminiscing: How Individual Lives are Constructed in Family Narratives,” *Memory Studies*, Vol. 1, 2008, [www.psychology.emory.edu/cognition/fivush/lab/FivushLabWebsite/papers/mem%20studies.pdf](http://www.psychology.emory.edu/cognition/fivush/lab/FivushLabWebsite/papers/mem%20studies.pdf), accessed October 11, 2011.

<sup>126</sup> Kaja Širok, “Kolektivno spominjanje in kolektivna pozava v obmejnem prostoru: Spomini na Gorico 1943–1947,” dissertation, University of Nova Gorica, 2009.

<sup>127</sup> Tanja Petrović, *Ne tu, ne tam: Srbi v Beli krajini in njihova jezikovna ideologija v procesu zamenjave jezika*, Založba ZRC, Ljubljana, 2006.

elsewhere in the dissertation as informant), stating that the relationship between the two is between two subjects, with well-formed opinions about each other: “Although at first glance, it appears to be a process where one interlocutor is getting information from the other, the dialog between researcher and research subject is ‘a discursive arena,’ that is a dynamic process in which the two interlocutors create a linguistic ideology, maintaining and redefining the reciprocal relationship given the background from each interlocutor comes, given the status of each, and the opinion each has of the other.”

In the case of the research carried out for this dissertation, my informants were scientists with advanced degrees and high levels of intellectual capability. In interviews, they expressed a range of reflections about themselves, their families, and the world. Already during our introductory contact, I was attentive to the fact that the theme of my research was sufficiently attractive to arouse the trust of my informants. During this process, I subjected myself to a considerable degree of self-censorship and presented my research in a broad and non-specific way in order not to “contaminate” their narratives. Although I was fairly reticent in providing information, the response of those I invited to cooperate was excellent. The first contact was made in writing, that is by electronic mail. I wrote each prospect individually and no two invitations were identical. Using personal information about each prospect, I began to establish an individual relationship with each and that continued throughout the length of our contact, from the first meeting through the interviews. This tactic proved helpful as the interviews with the informants, even on first encounter, were relaxed, committed, and open.

It is also interesting that at one point virtually all informants, despite the clear explanation of interview techniques, posed questions to me during their interview, in an effort to switch roles, and find out my position on certain themes: in other words, to direct the flow of the interview toward dialog. These efforts reveal the commitment and immersion of the informants, and also that, as the interviewer, I was also under constant observation and verification. In order to conduct proper interviews according to the defined methodology, I did not allow this reversal to take

place, although I did continue the conversation later with some informants outside of the formal interview framework. It appears that a sort of intimate connection develops between interviewer and interview subject.

All interviews were conducted in Slovenian, which was the mother tongue of all participants, including myself. In the Slovenian original of the dissertation, the transcriptions of interviews faithfully follow the spoken version and the structure of the spoken language is preserved. Because of the requirements of the University of Nova Gorica, the dissertation was also translated into English. In the English version of the dissertation, quotes from interviews are translated into standard English.

Robyn Fivush<sup>128</sup> among other authors discusses the meaning of language and its connection to the process of remembering and memories in general. Fivush concludes that the notion of first memories at around three years of age is a function of the development of language, and reveals the causal relationship between the ability to summon memories of events that were experienced during a certain period when the person (the child) was already capable of putting his feelings about events into words. Fivush continues to say that autobiographical memory is dependent not only on the awareness of the self in the past, but also on the awareness of the other with whom the person shares a common past, and also with others who perhaps remember the past differently. Fivush also debates whether autobiographical memory serves a social and cultural function. Namely: if memory of a specific episode serves to confirm and anticipate the environment, then autobiographical memory means the definition of the self in time and in relation to others. These functions allow the individual to create with others a collective past in which his or her own individual interpretations of the past are also inserted.

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<sup>128</sup> Robyn Fivush, "Culture and Language in the Emergence of Autobiographical Memory," *Psychological Science*, Vol. 15, No. 9, 2004, 674, [www.psychology.emory.edu/cognition/fivush/lab/FivushLabWebsite/papers/psychsci.pdf](http://www.psychology.emory.edu/cognition/fivush/lab/FivushLabWebsite/papers/psychsci.pdf) accessed October 11, 2011.

In his discussion of autobiographical methods, Jens Brockmeier<sup>129</sup> analyzes, among other things, the process of forgetting. He puts forward the argument that without forgetting and the loss of fragments of memories and some details, autobiographical narrative - without gaps, without forgotten or omitted details - would last as long as life itself. As a metaphor, the author notes that such complete memory would be like drawing a map of the world to natural scale. Brockmeier also takes on the issue of collective memory, saying that in the framework of the family, professional associations, graduating classes, or political parties, we belong to various “contexts of cultural participation” and our remembering is conditioned on many different, sometimes overlapping, sometimes contradicting, frames that emphasize different aspects of our lived reality.

Every individual belongs to different categories (physicists / biologists / mathematicians; Ljubljana dwellers / residents of other Slovenian regions; single / married; women / men; religious / atheist) and this was discernible in my interviews with informants. Some felt that belonging in a specific context was clear and decisive; other forms of belonging could be discerned in the undertones of the narratives. In this sense, each informant revealed a completely unique combination, though all of their narratives shared a common base of perspectives, values, and judgments that had not emerged solely in the individual, but were a consequence of the socio-cultural environment shared by my informants before emigrating to foreign countries and afterwards.

### 3.5 Methodology

#### Overview of literature and laws

As part of the dissertation, I reviewed both the Slovenian and the foreign literature in the field of migration, with an emphasis on the migration of academics, the history of

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<sup>129</sup> Jens Brockmeier, “Remembering and Forgetting: Narrative as Cultural Memory,” *Culture & Psychology*, Culture Psychology 2002; 8;15. <http://cap.sagepub.com/cgi/content/abstract/8/1/15> accessed October 27, 2008.

science, sociology, higher education, and the narrative interview as a research method. I also reviewed the current laws that affect the fields of higher education, and research and development in Slovenia.

### Statistical data

In addition to the data introduced in Chapter 3.3 from papers published by researchers who conduct quantitative research on migration in Slovenian science, I also drew from the database of Slovenia's Office of Statistics (SURS).

### Narrative interviews

In the study of life stories from a sociological perspective, the narrative interview is one of the most frequently used methods. It is used by sociologists in Europe, the United States and Japan, whereas, for example, Hermilio Santos<sup>130</sup> has noted that the method is not widely-used in Brazil. The same author emphasizes that the most important value of this method is that it is based on the individual's interpretation of his or her own life story, which can be an important aspect of our understanding of the contemporary world. This is reflected among many others also in the thinking of Ulrich Beck<sup>131</sup> when he defines the individual as the carrier of responsibility in search for the best conditions for his or her own life.

The method was developed in 1970 in Germany, its foundations introduced by Fritz Schütze<sup>132</sup> who based it on the concept of phenomenology. This method was developed further in the research of Gabriele Rosenthal,<sup>133</sup> and I mostly relied on her methodology for my research. In her work, Rosenthal states: "The narrative interview, as conceived by Fritz Schütze, is - with the proper respect and use of

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<sup>130</sup> Hermilio Santos, "Interpretations of everyday life: Approximations to the analysis of lifeworld," *Civitas*, Jan-April 2009, 103-117.

<sup>131</sup> Ibid., Beck.

<sup>132</sup> Fritz Schütze, "Biographie Forschung und narratives Interview," *Neue Praxis*, 13(3): 1983, 283-293.

<sup>133</sup> Gabriele Rosenthal, *Erlebte und erzählte Lebensgeschichte, Gestalt und Struktur biographischer Selbstbeschreibungen*, Campus Verlag, Frankfurt/Main, New York, 1995.

certain rules - not only the most efficient, but the only efficient method for meeting methodological demands.”

The life story interview as a research method is studied by many scientists, beside already above mentioned a significant contribution was made by Robert Atkinson<sup>134</sup>.

The goal of the method is not to acquire objective data - for example about education or the place and date of birth, or the number, age, and gender of siblings, or the professional situation of the interview subject - but rather, to reconstruct a life story on the basis of narratives, as well as the analysis of certain elements, and to comparatively derive a pattern that is repeated in a number of narratives, and conclusions situated in the historical-social context of the narrators. As discussed by many authors and as Mirjam Milharčič Hladnik<sup>135</sup> writes in her contributions to women's studies, the importance of methods or oral history or autobiographical method come from the basic need for “ordinary” women to show their experience and their interpretation of historical and social phenomena. I use the same starting point as the basis for my research into the migration of any group, including scientists. Milharčič Hladnik emphasizes that migration is a gender-marked process and that “in addition to macroeconomic and political processes one must also consider the network of intimate, personal, and friendly connections that effects the decision.” Milharčič Hladnik continues, quoting other authors, that many autobiographical and other qualitative methods have become more frequently used at the beginning of the twenty-first century and that numerous studies enriched our knowledge about the roles, experiences, and behavior of men and women in the context of migration in the past and today.

As a research technique, the narrative interview is conceived as the simple narrative of the informant, during which the interviewer, as a starting point, poses a widely

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<sup>134</sup> Robert Atkinson, *The Life Story Interview*, Qualitative research Methods, Vol. 44, Thousand Oaks, Sage Publications Inc. 1998.

<sup>135</sup> Mirjam Milharčič Hladnik, “Avto/biografičnost narativnosti: Metodološko teoretični pristopi v raziskovanju migracijskih študij,” *Dve domovini/Two homelands*, Vol. 26, 2007, 31-46.

framed question and then does not intervene until the informant has ended his or her narrative.

The interviewer is only allowed minimal gesticulation and non-verbal communication in order to convey active listening and to encourage the interview subject. During the flow of the “main narrative,” the interviewer must not ask any sub-questions or comment on the offered information, because such interventions might disturb the flow of thoughts and thus alter the narrative. By asking sub-questions, the interviewer may also encourage the narrator to comment and observe, which is not the purpose of the exercise, as the interviewer is interested by the flow of the narrator’s lived and narrated life story. Given that the interviewer is pursuing a specific research goal, and he or she must acquire from the informant all narrative themes, he or she is allowed in the second part of the interview to pose additional broad sub-questions, once again intended to stimulate the flow of the narrative.

This method has been developed on the basis of gestalt theory and phenomenology, and attempts to discover differences between how the narrator actually experienced his or her life story, how he or she experiences it now, or in other words, how he or she remembers and presents the life story. As Gabriele Rosenthal writes, the interviewer must not explicitly define what belongs in the narrative, because this would limit the freedom of the informant, and something could be lost in this way, a part of the narrative that could not be reconstructed.

The interview must be conducted live, recorded, and then literally transcribed. Interventions to the structure of sentences, translation into more standard language, and summarizing meaning is not allowed. When listening to the first session of the interview, the interviewer should mark those sections that are relevant to the research theme and that the subject touched on spontaneously. Then in the second session, the interviewer can ask sub-questions to encourage the informant to expand on those themes. Once again in the second session, the questions that are posed must be of the open type so the interviewer does not intervene in the flow of thoughts and the informant’s narrative.

In understanding the relationship between what is experienced and the narrated life story, the following principles, according to Rosenthal, should be respected: the principle of reconstructing experienced and narrated life stories based on abduction; the principle of sequencing temporal and thematic structures of experienced and narrated life stories; the principle of the contrasting structures of experienced and narrated life stories.

In this analysis, one does not begin with a hypothesis. Instead, the technique of deconstruction is used to determine the characteristics of the whole, divide it into certain sequences, interpret and analyze individual parts, and interpret the relationships among them, and in the end create a synthesis of our conclusions.

Relying on the work of Fritz Schütze and Gabriele Rosenthal, Jens Zinn<sup>136</sup> describes the interview process and the analysis of individual cases in the following steps:

- analysis of objective biographical data;
- analysis of text and thematic areas (structure of self-presentation, reconstruction of life story, reconstruction of narrated story);
- reconstruction of life story (as experienced life story);
- microanalysis of individual parts of the text;
- contrasts—comparisons between experienced and narrated life story;
- description of individual types and comparison of cases.

In conducting the narrative interview process, it is necessary to consider and anticipate where the interview takes place and how that might influence the interview process and the acquisition of high-quality research material. From the first contact, the interviewer must create an atmosphere of trust and relaxation, always considering any possible concerns or special qualities of the informant. For this reason, it is

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<sup>136</sup> Jens Oliver Zinn, “Introduction to Biographical Research”, *Social Contexts and Responses to Risk Network*, working paper, Canterbury, UK, 2004/4, 3-11.



essential that the interviewer explains the process and the research method to the informant right at the beginning: specifically, the method of conducting interviews, recording interviews, ensuring anonymity, etc. It is also important to choose an appropriately spacious and peaceful location for the interview where there will be no disturbances that might hinder the process. In the beginning phase, of course, it is necessary to give the informant a broad general description of the field of research, but this description is only intended to arouse the interest and motivation of the narrator, not to guide in any way the direction of his or her narrative, the details included, or the means of expression.

As Carsten Heinze<sup>137</sup> points out, it is necessary during the phase of analysis to realize that autobiography, in addition to the personal past of the narrator, is also a result of contemporary history - that is the current historical moment and the autobiographical perspective of it.

In general, the interpretation of life stories in the context of research is undertaken for one of two reasons: as the basis for a study of life choices and stories in various social contexts, or as a text that expresses methods of constructing personality and personal identity. I undertook the narrative research interviews for the first purpose and in the analysis focused on the content of what was said, rather than the linguistic structure of how it was said. For this reason, it was not essential for the English translation of the interviews to preserve the style of the utterance, as content was the crucial factor in the research.

In the analysis of interviews, I also considered the perspective of Pertti Alsatuarri<sup>138</sup> who, rather than a socio-structural or socio-linguistic approach, recommends a discursive approach that is described as a method through which the personality is revealed and a strategy for maintaining continuity and dignity. Given the complexity

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<sup>137</sup> Carsten Heinze, *Autobiographie und zeitgeschichtliche Erfahrung - Über autobiographisches Schreiben und Erinnern in sozialcommunicativen Kontexten*, Vandenhoeck & Ruprecht GmbH & Co., Göttingen, 2010.

<sup>138</sup> Pertti Alsatuarri, "The Discursive Construction of Personality," In A. Lieblich and A., Josselson (eds.), *The Narrative Study of Lives*, Sage Publications, London-New Delhi, 1997, 1-20.

of personality and the diversity of the environment that combines to create a life story, and also given the specific interaction that emerges between the interviewer and the informant, this approach seems to complement the socio-structural and socio-linguistic approaches, as it takes into account motives, expectations, and the moment at which the interview itself takes place. It recognizes that both the interviewer and the informant consistently construct their own roles, thus achieving their intimate purpose. In my case, this was to learn the life story of the informants in order to reveal their motives for emigration, and also their reasons for remaining in a foreign country and not returning to Slovenia. In addition to this “technical” interest, I was also simply interested in getting to know young Slovenian researchers who are successful outside of Slovenia, to present myself as a trustworthy and serious collaborator, and thus to open the way for possible future cooperation. As far as I can tell, the interests of my informants were as follows: the desire to satisfy their curiosity about the nature of my research, to contribute to a better understanding of the state of science in Slovenia, and to take advantage of an opportunity to express their perspectives, opinions, and ideas. In this sense, they realized that they were not only entering into a relationship with me as their interviewer, but also that their personal opinions, in the form of quoted material, might reach a wider readership, and similarly that their narratives, subject to my interpretation, would be presented to an interested public. From this, I conclude that the basic condition for the successful use of the biographical method and the narrative interview is the high level of mutual trust and respect between the interviewer and the informant: first, that the narrator will sincerely and precisely describe his or her life story, and second, that the interviewer will faithfully, responsibly, and seriously treat the collected (recorded and then transcribed) material, making use of quotes and conclusions in a professionally correct manner.

In the text, I make use of the following terms: interviewer - the researcher who conducts the research (in this dissertation, that is myself) - and informant (or interviewee or sometimes narrator) for the Slovenian academics / scientists who are being interviewed.

### 3.6 Choice of informants

Sampling techniques were argued by many authors, among them for example Martin N. Marshall<sup>139</sup>, and I explain the choice of my sample based on the combination of two techniques that he is describing: *convenience sample* and *judgment sample*. Convenience sample is the least rigorous technique, based on involving the most accessible subjects. It is the least costly in terms of time, effort and money, but may result in poor quality data and therefore lacks intellectual credibility. Elements of convenience sampling are in almost every quantitative study, but more thoughtful approach is to include justified sampling (also referred to as purposeful sample) as well. So I actively selected the most productive sample to answer my research question: this involved developing a framework of variables that might influence an individual's contribution and was based on my practical knowledge of the research area, the available literature and the study itself. I invited to participation in my study researchers (who met the requirements listed on p. 77), that I could reach through my social and professional network, and the subjects were able to recommend useful potential candidates for study as well (snowball effect). Time and resources constraints were playing a considerable role in the process of sampling for this research.

Regarding the question "How many interviews are enough?" in literature beside numeric suggestions by several authors, for example in the paper edited by Sarah Elsie Baker and Rosalind Edwards<sup>140</sup> ranging from one to several hundreds, the unanimous answer by most authors is "It depends." It depends on resources (time, money), on the importance of the research question for the research, or banally, how many are enough to satisfy the committee members that are evaluating the study. More importance as to the quantity of interviews is given to the quality of the

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<sup>139</sup> Martin N. Marshall: "Sampling for qualitative research", *Family Practice*, Vol. 13, No. 6, Oxford University Press, 1996, 522 – 525.

<sup>140</sup> Sarah Elsie Baker and Rosalind Edwards. "How many qualitative interviews are enough? Expert voices and early career reflections on sampling and cases in qualitative research, *National centre for Research Methods Paper*, 2012. [http://eprints.ncrm.ac.uk/2273/4/how\\_many\\_interviews.pdf](http://eprints.ncrm.ac.uk/2273/4/how_many_interviews.pdf) accessed October 29, 2012.

analysis and the dignity, care and time taken to analyse the interviews. Harry F. Wolcott<sup>141</sup> recommends that researcher should keep asking as long as he is getting different answers.

Even as early as the first contact and invitation to participate in the research, potential informants posed questions about their anonymity. This gave the impression, at that time unsupported, that the Slovenian scientific-research community is dominated by relationships and conditions (negative ones as well) that are defined not only by legislation but by the smallness of the country, the limited space, and often the intertwinement of personal stories and interests of the influential players. This, in turn, begs the question of the use of objective criteria in the evaluation of scholarship and the appropriate allocation of funds for research.

You won't use my name, will you? (*the basketball player*)

The above question was raised by an informant not only during his narrative, but even after I had provided him with guarantee anonymity. It reveals a perhaps subconscious awareness of the unhealthy intertwinement of Slovenians, not only in the research community, but in society at large. Only with a guarantee of anonymity, which is in any case recommended by Gabriele Rosenthal, were informants prepared to openly talk about their experiences of and opinions about the Slovenian research sphere. They wanted to contribute because they believed my research was relevant and useful and that their participation would help to create an objective picture of the scientific research sphere in Slovenia. The interviewee who intended to remain outside of Slovenia did not have the same concerns, but nevertheless agreed with the uniform anonymity of all interview subjects.

I even have a name for it, but, I cannot say it because I use it all the time and if you quote me, people will recognize me. (*the literati*)

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<sup>141</sup> Harry F. Wolcott, *Transforming Qualitative data: Description, Analysis and Interpretation*. Thousand Oaks, CA, Sage Publications Inc., 1994.

The criteria that I used when looking for informants were as follows: the subject had to have a PhD, be between 30 and 50 years old, studied and/or was employed at a reputable international organization (either a university or research institute), and have internationally recognized achievements in research using accepted methodology. In order to get a more complete picture, I included informants who had experience in Europe as well as those who had experience in the United States and Japan. Because of logistical difficulties, I was unable to conduct planned interviews with informants in Australia. In their narratives, informants provided descriptions of experiences in the United States, England, Japan, Israel, Italy, Sweden, Finland, Germany, Austria, and the Netherlands. Some of them had lived and worked in many countries. Half were employed at universities and half were employed at institutes.

I included in the sample academics / scientists in the following disciplines: physics, microbiology, biology, computer science, mathematics, law, and economics.

In terms of completed doctoral studies, the sample could be divided up as follows: four in biology, three in physics, and one in mathematics, computer studies, and law. All informants attended non-vocational high schools (gymnasium), and it is worth noting that six of them attended the in the Bežigrad high school, two in the international baccalaureate program, the others in the general program.

Most of the informants were men, only one being a woman. As far as family status is concerned, all informants had partners, and half also had children.

### 3.7 Research design

In the introductory section, I provided an overview of the current available research and statistical data about the emigration of Slovenian PhD holders in the period after 1991, as well as an overview of Slovenian legislation in the areas of higher education, research and development, and I defined key concepts.

According to my hypothesis, the following periods of life are crucial to my research:

- the period of growing up (so-called “Kinderstube”)

- departure from Slovenia (reasons, length of time, integration, work conditions)
- (possible) return to Slovenia (reasons, work conditions, vision of career development, international collaboration, reintegration)

### Research methodology

I used the narrative interview as my primary methodology - specifically the oral testimonies of ten informants.

In addition to basic demographic information, I asked the informants about the following subjects:

- family status and degree of closeness to family,
- education (where, what schools or educational institutions, criteria for selecting specific schools and specializations),
- student period (dedication to studies, extracurricular activities, free time, travel, and exchange programs),
- knowledge of foreign languages (connections to the country of emigration),
- personal values, motivation, and interests,
- perspectives on the Slovenian research sphere (legislation, financing, institutions, agencies, exchange programs),
- opportunities for work in universities and institutes,
- opportunities for integration and reintegration,
- quality of Slovenian research sphere,
- socially critical perspective on work conditions in Slovenia,
- opportunities for researchers who work in Slovenia for professional training in their field and at their level,
- reasons and inducements for the decision to leave Slovenia,
- length of residence in foreign country and possible plans for return.

I conducted the preparation, execution, and analysis of interviews - experienced and narrated life stories - in accordance with the methodology and instructions of Gabriele Rosenthal, requiring that the content, length, and flow of the narrative be dictated by the informants. During the first interview session posing of sub-questions is not expected. Likewise, it is not allowed to interject comments or definitions into the narrative process. The research questions must be formulated as broadly as possible. The interviewer may only gently guide the informants, for example to speak most of all about memories, and not to spend excessive time in argumentation or mere reporting of the events that took place in life. Of course, it is helpful if the interviewer is acquainted with the historical context of the period about which the informant is speaking.

The following are some of the broad research questions posed as a starting point for the narrative interviews:

*“When did you first think about going to study or work in a foreign country?”*

I then reinforced the primary question with the following statement meant to encourage the informant to include personal information in the narrative:

*“Tell me everything that has happened in your life that brought you to where you are now.”*

In the second part of the interview, the interviewer is allowed to ask sub-questions that function as a test of conclusions taken from the initial session. But these sub-questions should also be framed as openly as possible. Posing very concrete questions increases the possibility of getting opinions as answers or anecdotes that have been repeated many times. Open questions encourage interview subjects to speak in a narrative fashion, which is what is hoped for in this methodology.

My primary interest in the analysis of the life stories of my informants was not to establish the details or the connections and causes between the experienced and told

life stories of each individual. Rather, the goal of my research along with the analysis of told life stories was the search for repetitive patterns, and the definition of factors that are decisive in terms of the departure of young Slovenian academics to foreign countries (as well as factors that discourage or prevent their return to Slovenia) and are repeated in the life stories of several informants.

I chose a pseudonym for each informant chosen on the basis of my impression of each as a person. I then attached this pseudonym to each of the quotations taken from individual narratives (*the basketball player, the stargazer, the fisherman, the bicyclist, the literati, the artist, the photographer, the self-made man, the musician, the fast-talker*). In Slovenian, all pseudonyms are used in the masculine form so as not to reveal the single female scientist who participated in the research.

I always prepared for the interview several weeks ahead of time, communicating with the subject by e-mail. The response to my e-mails was always very positive. Almost all informants quickly responded in the affirmative within a few days of my invitation, many adding the comment that the content of my research seemed relevant and that they were pleased to be part of the project. Only very few initial contacts did not materialize into interviews, usually because of the geographical or time restraints of the potential participants. Most interviews took place on occasions when informants, usually because of private visits or holidays, had returned to Slovenia. I conducted two interviews in Austria, one in Graz and the other in Vienna.

At the beginning of each interview, I briefly introduced myself to the informant, and explained in broad strokes the content of the research that I was conducting. Specifically, I followed the methodological instructions and was careful not to limit the narrative flow of informants with my introductory thoughts and explanations. Before the beginning of each interview, I presented each informant with a brief survey and had each sign a statement of confidentiality that also defined the terms of use of the gathered information. We each signed two copies. I keep all statements (along with the recordings and transcript of interviews) in a protected personal archive (in paper and in electronic form).



In this way, I established a relaxed atmosphere of goodwill and reciprocal trust that encouraged the flow of sincere and personal narratives, which I recorded with a dictaphone and then transcribed, without in any way intervening in the content or the linguistic style of the narratives.

Informants generally responded eagerly to invitations to collaborate. Many were very open during the interviews themselves, telling about very personal matters, and thus enabling me to acquire an integrated view of their life story and better understand their environment and the factors that led to their decision to emigrate to foreign countries.



#### 4 PERSPECTIVES OF SCIENTISTS AND RESEARCHERS:

##### “YOU HAVE TO KEEP MAKING PROGRESS.”

In thinking about the possible reasons that lead young researchers to make the decision to emigrate to foreign countries, it appears that a combination of circumstances, coincidences, and systemic solutions that define work and living conditions in the Slovenian environment, all conspire to create an extremely complex and diverse, though nevertheless discernable pattern, although the details of individual stories vary. Breda Mulec<sup>142</sup> writes about recent attempts to enhance the contacts and cooperation with Slovenian scientific diaspora. The common feature throughout the narratives of my informants is best encapsulated in the following statement:

Well, if you take your academic career seriously, then you can't just park yourself in a comfortable job somewhere, however attractive that may seem. If you do, you won't make progress. You're parked there and you become, I don't know what you want to call it, a teacher or a bureaucrat or something. You have to keep making progress.” (*the stargazer*)

When examining the migration of academics, it is not enough to discuss the context of push-pull factors, at least not in the economic sense or in the sense of assuring one's existence. Above all, the decision appears to have to do with the search for better working conditions: well-equipped laboratories, top-level colleagues in primary teams and other teams working in the same scientific field, the possibility of collaborating at conferences, employment in comparable positions, balanced combination of research and pedagogical work, as little administrative work as possible, with a good salary being the least important ingredient.

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<sup>142</sup> Breda Mulec, “Kroženje možganov: nov cilj v povezovanju držav z diasporami”, *Dve domovini*, Vol. 33, Ljubljana, Inštitut za slovensko izseljenstvo in migracije, 2011, 109 - 122.

In this chapter, I will systematically examine the factors that are relevant in the process of the decision of young researchers to temporarily emigrate.

#### 4.1 Family

Literature about migration suggests that the family is an important factor in making the decision for the emigration of one or more members of the family. As described by Oded Stark and David Levhari<sup>143</sup> family functions as an integrated whole with decisions being taken collectively for the common good, the connections between emigrant members and remaining members being an important factor. Financial resources earned by the emigrant for his or her work are sometimes returned to the family in the home country.

With the emigration of academics, the family, or so I conclude from the narratives of my informants, plays a very different role: it represents a micro-environment that has formed, since early childhood, the patterns, values, and ambitions that later become the foundations for making decisions about life. Despite the support of family, the young researcher's decision to relocate to a foreign country usually seems to be an individual one. The material component also does not appear to play a significant role. Young researchers, in general, support themselves, and similarly, their families are generally self-sufficient financially. The family therefore acts, in terms of this important decision, in the sense of providing moral support rather than out of any material interest.

In contrast, the family is a crucial factor in cases where researchers decide to return home - especially when they create their own families and have small children. In these situations, the home country, and the parents of the researcher and his or her spouse, can play an important role in providing partial care for small children. This is often the reason that researchers make a compromise of sorts, sometimes sacrificing their scientific career. I will discuss specific examples in Chapter 4.3, but here I will

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<sup>143</sup> Oded Stark and David Levhari, "On Migration and Risk in LDCs", *Economic Development and Cultural Change*, Vol. 31, No.1, Chicago University Press, Chicago, 1982, 191 – 196.

simply quote one of my informants discussing how the functioning of his family and himself changes when he visits Slovenia:

Let's say, also that I come here, and I become all of a sudden very dependent on my family and friends. Everything here is more collective. In my adopted home, we are more solitary. (*the fisherman*)

#### 4.1.1 Formative environment

The creation of personality, values systems, work habits, behavior patterns all begins in early youth, in the bosom of the family, long before socialization in kindergarten or nursery school. This period, known in German as “Kinderstube,”<sup>144</sup> characterizes a person for his or her entire life, because it is during this period that fundamental values are formed, which are very hard, if not impossible, to change during the course of a lifetime.

The informants who participated in this research came from very different family backgrounds, most from small families with one brother or sister at the most. The education and presence of families was also varied: in some cases, both parents were academics, another came from a single-parent household, two from rural areas, one from a family with well expressed Catholic values.

All of the informants had been active and curious children who, in addition to their regular schooling, had at least one interest or activity with which they were actively engaged (music, computers, yoga, literature, foreign languages, sports, travel), and all received a feeling of support and encouragement from their families. None of the informants emphasized the material aspects of their upbringing, though many mentioned that their parents encouraged them to become financially independent as soon as possible, many of them starting to work and earn even while they were in school. They generally used their earnings for travel and further education. In no case

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<sup>144</sup> *Kinderstube* is a German word with many meanings mostly related to the good habits and values a person acquires during childhood and family rearing, <http://de.wikipedia.org/wiki/Kinderstube> accessed March 23, 2012.

did a family shoulder the whole educational expense; rather it was a combination of scholarships, savings, and the contribution of parents.

So I worked on computers, starting when I was eight or nine. I really pestered my dad, finally convincing him to buy me a computer. He's not a technical guy and it wasn't really obvious to him, but in the end we bought it. I was in the fourth grade of elementary school and put in all my savings, around 100 German marks or something like that, everything I had saved at that time. Later when I was in fifth grade, I went from my local school to a bigger one where there were two sixth grade classes and a computer workshop. But the computer workshop didn't start for a month and a half, and I begged my mother to go to the man who was the technical teacher and ask him when exactly we were going to start that computer workshop. (*the fast-talker*)

Regardless of the socio-economic status of the various families, they all seemed to share a certain openness, an inclination to get to know new places, and to travel. This could be interpreted as an expression of the values of the environment in which the informants grew up: knowledge was a valued commodity, so too was tolerance, self-initiative, diligence, being goal-oriented.

The below quotation reveals that the first impulses felt by the informants to explore the possibility of life outside of Slovenia appeared in early adolescence, at that point on a more or less subconscious level, which later, with maturation and adulthood became conscious and rational. This willingness to explore the very possibility of relocating, along with other factors and reasons at a given moment, was the combination that led to actual emigration.

Aha, I don't know if I remember or not when I first started to think, because of my family situation it was probably quite early, since my parents had also studied outside of Slovenia and I had travelled a lot with them. It was probably at the end of college when I really started to think about what I would do with my future. Umm, it wasn't like I decided to move right then, but I started to look around then. I didn't really know what I wanted to do. I'd

studied mathematics and I had the feeling that I hadn't learned anything, anything really, that I could use. I had learned highly analytical thinking, and really interesting things, but I just didn't see what I had to offer anyone, and I thought I would have to study something else. (*the bicyclist*)

This quotation expresses a process that could be discerned in the narratives of all of my informants: that reflecting on emigration and the final decision to leave Slovenia grew slowly, organically, without any pressure, and the final emigration was experienced as an entirely normal and necessary step in their professional careers. The family as the basic unit (regardless of the quite varied profiles of my interview subjects' families) obviously played a role in this process in terms of defining the way these young people thought about things: out of the box and not restricted by the local environment.

#### 4.1.2 Education

After elementary school, all of my informants continued their education in the so-called general direction, that is in gymnasium rather than in vocational or specialized high schools. Despite the fact that the type of high school, or indeed the specific high school attended, was not among the criteria for the selection of informants, six among the ten subjects attended the same high school: Bežigrad Gymnasium in Ljubljana. The international baccalaureate program run by this high school was frequently mentioned and, in the eyes of many of my informants, the best moment for departure to a foreign country was right after high school. Not all of the informants who graduated from Bežigrad High School attended the international baccalaureate program, but instead attended the general program with a focus on mathematics. All of the informants did their undergraduate studies in Slovenia, half went on to pursue post-graduate studies in foreign countries, half emigrated only after the completion of their PhD in Slovenia.

Like many other authors, Monica Boyd<sup>145</sup> also discusses the importance of the family and personal networks and also my informants stressed the very important role of parents, classmates, teachers, and mentors, each with their own individual approaches, in opening the mind to different ways of realizing goals and the full use of human potential:

Then in high school, I have to say, that even my homeroom teacher let me cut geography and go to the Institute. So I have to say that there were a lot of people who helped me. (*the fast-talker*)

Each life story is particular in its details, but the collective narrative of the informants indicates that it was during the high school or college period that wider perspectives came into view, and especially the idea of work outside of Slovenia. Below is a quote from an informant who left Slovenia for a summer internship at the end of high school and then during undergraduate studies, but had never thought seriously about emigration. The real experience, however, provided illumination on the condition and status of and possibilities for researchers in foreign countries, or more precisely, the recognition that the top level of science is global, not limited by national borders:

I'll put it this way: somehow I had more connections with foreigners or foreign countries right after the end of high school, when I did volunteer work for an international group over the summer. Then in college, I also went on these summer volunteer camps. I also went to international athletic competitions, mostly because I wanted to know more about international circles. I always had the feeling, while I was still in college, that I would pursue my career in Slovenia, and even during the transition, when I first starting to realize that it would be possible to do my doctorate somewhere else, not here, I said to myself, but no, it's really a good life here. If I looked at the generation before me, they really did something, didn't they? And then, when I started my doctoral studies, the first year, and I did some studies outside, in Trieste

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<sup>145</sup> Monica Boyd, "Family and Personal Networks in International Migration: Recent Developments and New Agendas", *International Migration Review*, Vol. 23, No. 3, Special Silver Anniversary Issue: International Migration an Assessment for the 90's, Autumn 1989, 638 - 670.



where they have ICTP, the International Centre for Theoretical Physics, there you really see lecturers that are superstars. Well, that's the first time that I really realized that there is a big difference, you know. Between the cream of the cream, the superstars, and the Slovenian scientific sphere, which of course is fine. But that was a real shocker then, when you see how much is lacking, how much you are lacking, how little you are exposed to those kind of people." (*the basketball player*)

Given the increasing number and success of study-related travels available to young Slovenians, one can draw the conclusion that the Slovenian school system is fairly capable of producing internationally competitive and professionally desirable individuals. The next question is how the outflow of the most capable part of the population affects the country in qualitative and economic terms: from the standpoint of both invested resources and lost human capital. The fact is that a high-quality school system increases the international competitiveness of the perspective labor force but also the potential outflow, which is a net loss to the educating country. On the other hand, it is possible to take this argument in a different direction: namely that the high quality of schools in Slovenia should attract promising potential from less developed countries, and try and keep them. In any case, it would make sense to look for solutions that would benefit Slovenia as a whole.

#### 4.1.3 Knowledge of languages

Ludwig Wittgenstein famously stated: "The limits of my language are the limits of my world." The history of migration among academics reveals the importance of the knowledge of languages in order to acquire appropriate knowledge and the opportunity to pursue a successful international career in science. In Chapter 3.1, I focused on examples from history; here I discuss current examples from my research.

In the narratives of my informants I discovered that the first departure for a foreign country generally had to do with studies. One of the informants stood out in that his first departure from Slovenia was to learn a foreign language and the attraction of the

foreign country. This was the only informant whose first departure was not directly connected to scientific studies.

Well, things got really serious during the second year of college, I got a scholarship to study the Swedish language up north, in Lapland. In the next summer, I went home and I was completely mixed up from Sweden, even more than before, and in the third year I started to work in a laboratory.” (*the fisherman*)

All the informants studied English in the higher grades of elementary school and in all four years of high school. Three of them believe that languages are not their strong point, but that their acquisition of English was still sufficient for the successful completion of specialized studies outside of Slovenia, and later for a successful career. In addition to English, several of the informants also spoke German, and the following languages were spoken by at least one informant: Japanese, Swedish, Finnish, French, Dutch, Russian and Chinese. In general, those who participated in the interviews mastered from one to three languages.

I was fascinated by Munich and I also studied German. I spent one summer in Vienna, one summer in London, and then another in Vienna to study German. (*the artist*)

Since early on, my parents were of the opinion that the more languages you knew, the more you were worth. In nursery school, I already started learning English, and then German, and I must say I really enjoyed it. I like foreign languages and I learn them easily. I speak quite a few of them and definitely, when we had the chance, we always went somewhere.” (*the stargazer*)

In terms of the knowledge of foreign languages, it is necessary to emphasize the dual role of language: first, their usage in research work in which case the working language is generally English as most research groups are multinational; and second, the mastery of the language of the country of residence. The latter is important for social relationships and integration into the local environment, and may impact on the decision to permanently change the place of residence. One of the informants

subtly analyzed the process of acceptance and integration into a new environment through phases of mastering the language:

In what situations do you feel at home, and in what situations are you accepted as a local. This probably has a lot to do with what kind of place you've moved to, what kind of city and environment. If you come to a cosmopolitan center, where it's difficult to imagine some kind of centuries-old autochthonous group of residents, but rather it is a place where the population is more or less cosmopolitan by nature, borderless and globalized, and soon you are in the same melting pot. But even in that kind of environment, it takes a long time before they accept you as one of theirs, especially if there is a language that you have to learn. I know cases of people who very slowly learned some exotic language where they lived, and one goes through individual phases. From the phase where you are obviously a foreigner, to the phase where you are still obviously a foreigner but you are learning the language. Also in Slovenian we have, or rather in Slovenia we have similar stories with foreigners who come and have to learn the language. And there is a point where we say, no, wow, for the amount of time you've been living here, you speak phenomenal Slovenian, but, but, at the same time it is still implied that you are absolutely very good for a foreigner, and the question is at what point will you be more or less accepted in this environment, and even then it will be that you are almost like one of us. But at what point do you really become one of us? (*the literati*)

A similar thought was expressed by another informant who discussed the informal pressure of the environment that expects that in time the immigrant will learn to use the local majority language for rudimentary communication.<sup>146</sup> The below quotation touches the role of English as the official language of many foreign universities - which enables them to attract students and lecturers - and which I will discuss more

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<sup>146</sup> The example is the Netherlands which tried to introduce English as the sole language of instruction at certain universities. In the end, this proposal was not implemented, though English remains the language of instruction for later years of university.

in chapter 4.3 where I analyze the conditions for successful international research and pedagogical work in Slovenia:

No, I didn't know anything, only English, and I still only know English. Yes, I speak a little now, not really well, I can't lecture in Dutch, but after two years in the Netherlands, it started to occur to me that it might be nice if I learned at least a little Dutch. It wasn't a condition since the language of instruction at the university is English. For the first and second year it's Dutch, but there are parallel classes in English, and in the departments everything is in English, all talks, all seminars. (*the bicyclist*)

The following statement relates to the use of the official language in the country where one settles for work and for private connections:

I decided right at the beginning, that I would communicate in German in my surroundings, that is as regards everything that didn't have to do with science. And I really strictly stuck to that, I never spoke English and that seemed fine to me, because I very quickly became adapted to the environment and I never felt any cultural barriers. (*the musician*)

#### 4.1.4. Expressions about values

Values are an important part of personal and social life, and thus represent a basis for making decisions. Basic personal values are acquired in early childhood, do not change significantly with the passage of years, and define the individual. A person who lives in an environment that is in harmony with his personal values will feel accepted, safe, and have the sensation of being an important and appreciated member of society. If the values of the individual are not in harmony with the values of the environment/society, he or she experiences a feeling of dissatisfaction and impotence:

Now I would say, as far as values are concerned, Germans are very, how would I say, very correct and sometimes a little bit too uptight. But otherwise you feel really safe somehow in Germany, everything runs by the rules and everything is clear and, you now what will happen, how things will progress,

and that's why it's somehow easy to live in Germany because there are no ambiguities. Everything is well ordered, and I think that's fine, you can live with that and I can identify with this. I do identify with the fact that I now live in such an orderly country where there's no: oh what if this happens, or what if that gets complicated? Everything is correct, and even in science everything is very correctly done, everything works, and I also identify with this. That's like one value, isn't it? (*the musician*)

My informants emphasized the following qualities in terms of their own personal values: openness, cooperation, tolerance, ambition, diligence, honesty, expertise, professional responsibility, loyalty, transparency, respectfulness, competitiveness, constructive approach to problem solving, and self-criticism. These are also the qualities they look for in their work environment and indirectly in the society in which they live (or would want to live).

When they reflect on Slovenia as a place where they might realize their professional goals, in addition to “administrative-legislative barriers,” they sense other characteristics of the environment that do not accord with their system of values. When they speak of conditions in Slovenia, they use expressions such as: small space, envy, mediocrity, loyalty, general negativity, unprofessional and backstabbing behavior as opposed to healthy competition, intrigue as opposed to transparency. All of these feelings are based on their own experiences or on the experiences of colleagues, both those who remained in Slovenia and those who emigrated.

Regarding general negativity:

What strikes me as very different between the two environments is that here there is a lot of: no no no no no no. In America, it's mostly yes yes yes. Go-getter-ism, right. That seems like a big difference and it is so exaggerated that you have to always compensate, also with social things. The way of criticizing is different here from there. It's typical, let's say, once I finally got rid of those tendencies, that if you have friends here, they typically criticize everything. There I got a different feeling, I didn't always hear people

complain about everything, how bad everything is. You need to decide what things are bad, what things are good. I feel like in my career here, I'm kind of stuck. It's hard to move forward. (*the basketball player*)

Regarding “diligence” in terms of obedience and loyalty:

They say, the boy is smart, he'll learn, what's important is that he works the way I want him to. Loyalty and belonging is more important than anything else. (*the stargazer*)

Informants also reflected on the prestige and reputation of the scientific / research career in Slovenia. Science in Slovenia is a recognized profession, and perhaps even a prestigious one, but there is a connotation of eccentricity, as if people who work in the scientist profession are dreamers, as if they have no connection to reality, and actually no one knows what they do (or research) and what purpose it will serve.

Above all, it seems to me, that we are not perceived as we really are. I don't know if we're seen as being useful. Useful in any way at all. We need universities of course. That's how the world is made, that you have to have at least one university, whatever it does, even if it doesn't do anything, but does a physicist do anything useful? Who knows? (*the self-made man*)

The informants felt a big difference between the evaluation of the scientific professions in Slovenia and abroad. Many emphasized that a career in science is more highly esteemed outside of Slovenia, and is seen as respected, understood, and necessary for the proper functioning and progress of society. Similarly, the perception of knowledge as a value, which is highly esteemed in many foreign countries, is only valued rhetorically in Slovenia, not in fact:

Yeah, the career of scientist is prestigious in Slovenia. But not financially. Otherwise it's prestigious, students look at it better, in a completely differently way than they do in America. Here you're like a god, I don't know why but here students really fears you. I don't know, maybe I look strict but otherwise, I'm not. I prefer to be informal, on a first name basis, there, well... a different method of teaching. So that, it seems to me, you still have a certain amount

of prestige. Knowledge in Slovenia is absolutely not a value, not at all. No, no. I think if you give someone something for free, because you have it, well this is something that is understood in and of itself, but it's very difficult to calculate out here. (*the basketball player*)

It's also linked to tradition, I would say, up here in Sweden, education, the university has a tradition, and it's recognized as something important, a value that has an essential influence on well-being, I would say, more than in southern Europe, that here it is something valued, that the university will educate you and not just take money, but actually returns it. (*the fisherman*)

No, knowledge as a value in Slovenia has not gained its proper place yet. What we need to know, that every successful society is founded on knowledge, and I think that in this context Slovenia has not exactly achieved the level of a developed and successful society, as for example in other countries, as for example in Germany. But in Slovenia, knowledge is not exactly elevated. Services that come from knowledge, are not exactly valued, and the profession of a scientist in Slovenia is a fairly thankless profession. (*the photographer*)

With the increasing union of countries in Europe and the inclusion of Slovenia in that union, Veljko Rus and Niko Toš<sup>147</sup> emphasize the time lag and the non-simultaneous political, economic, and cultural adaptation, that may develop later or slower since it has to do with the convergence of the value systems of diverse populations. Given that value systems are relatively fixed and generally do not respond to changes in the environment, it is completely expected and understandable that national identity expresses itself through values. In terms of the speed and direction of changing values in society, it is important to respect the "cultural historical sediment" as these authors call it and according to them as far as the value system of its population, Slovenia does not belong to the central European post-communist group of countries, but more to the old Austria-Hungarian tradition, which bears similarities to Germany,

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<sup>147</sup> Veljko Rus and Niko Toš, *Vrednote Slovencev in Evropejcev*, Fakulteta za družbene vede, Ljubljana, 2005.

Belgium, Finland, Greece, and Israel. One of the common themes among the informants was that a feeling of exerting control over one's life is one of the main conditions for being satisfied with it.

I wouldn't say, this is now very important. I wouldn't say, that these values are only Slovenian: they are very southern European. I work with Italy and Spain, and I would say that there are many similarities, also with Croatia. It is a very similar mentality, a very similar system of values. But our system (the Scandinavian and the Anglo-Saxon system) are very close - to be objective, in control, right, have responsibility for everything you do, for others, to anticipate the consequences of what you are doing for others, planning the future. Slovenians, Mediterraneans are more impulsive. They control their emotions less, they're quick to pull knife, quick to yell. On the other hand, I would say that we (here I mean Scandinavians) are more boring. People are quieter and think about what they are going to say, control their emotions, don't explode, are rational: rationality above all. Maybe this sense of belonging in the clan system of southern Europe, let's say, this much greater sense of belonging and in terms of you private life, the concern about how everyone will react to it, how everyone will react if you have a new partner, if you make a change at work. You're just more enmeshed. (*the fisherman*)

Among other authors, Ronald Inglehart<sup>148</sup> in his work describes the changing values among younger generations who grew up in a period of relative prosperity and who, in comparison to their parents' generation, have experienced a notable shift in values from "having" to "being." My informants also showed a greater interest, in terms of their motives for relocating, in the success of their career - "being / becoming" top researchers, head of a laboratory, professor - than in merely acquiring material goals. Inglehart includes this phenomenon of reduced interest in higher economic standards in the materially saturated industrial countries in the general concept of "the law of diminishing returns." Especially among the young, there has been a decisive shift in

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<sup>148</sup> Ronald Inglehart, *Modernization and Postmodernization*, Princeton University Press, New Jersey, 1997.



the direction of self-actualization and an emphasis on the integrity of the individual, which Inglehart characterizes as a postmodern syndrome. This helps us to understand the informants who see the quality of their working environment mostly in having educated and competent people around them, rather than in material terms:

What's missing in all these structures is the understanding that in essence you need to have smart people around you, good people. That's something that can really help you, that can raise your standard. The idea that, aha, smart people are competition, that they're going to surpass you, that's not necessarily the case. A lot of people aren't even interested in what you're doing. That's not even what really interests me. I am only going to start getting involved with you if you start to do your work so badly that it gets on my nerves and affects what I do. Otherwise, be my guest, do your work, there's enough work for everyone. (*the stargazer*)

In their research on values, Veljko Rus and Niko Toš also identified the influence of specific factors on the individual's sense of happiness, and concluded that, in addition to personal autonomy, work, though it no longer has as such central a role as in the past, is the main predictor of the quality of life. "Satisfaction with work (or the quality of life's work) is a more important predictor of the quality of life than social capital (as measured by social connections), more important than the socio-demographic characteristics of the respondents or their religious convictions." Rus and Toš also studied the closedness / openness of Slovenian society and concluded that Slovenians are relatively tolerant to other ethnic groups (races and nationalities) and relatively intolerant to groups with other ethics (alcoholics, drug-users). The authors further conclude that multiculturalism has strengthened in recent years, while tolerance to alternative life-styles has diminished. The analysis showed the tolerance among younger respondents is higher, that the nature and extent of xenophobia in Slovenia is similar to the European average, and that it is possible over time that it will fall below that average.

In order to be successful in science, it is necessary to collaborate in groups and laboratories, on both the national and international levels. The citation below about

Nordic countries describes positive changes as a result of overcoming old resentments and establishing cooperation:

And if you're making trouble, you have to do it in a way that nobody sees, but this is for science, if I came back here five years ago, to this little country where nobody trusts each other, where nobody values things as they do up there (in Scandinavia). There's twenty-five million people up there: Fins, Norwegians, Swedes, Danes, Greenlanders, Icelanders. And that's what we always do, more or less. We evaluate, we use people who are not from our countries, because we have an exceptional trust in one another. The problem down here is that we don't trust our neighbors. It's just that kind of place. Maybe things will stabilize some day. In essence, this part of Europe is a little like Scandinavia was three hundred years ago. Danes and Swedes were constantly at each other's throats, going to war practically every year, but eventually it stabilized. (*the fisherman*)

The following is a comment about the atmosphere in laboratories where the group is multicultural and connected in a manner that my interview subjects miss when they are in Slovenia:

It fascinated me, how very connected, like a family, the researchers function in laboratories. And I think, thematically, in terms of research, I felt that these ideas can infect you, that it's not just something you do as work, but you become a sort of slave to the ideas that develop inside these laboratories and that attracts me. It's really great for me. I can put in my CV so that I've worked in a foreign country, but at the time I had the wish that I wouldn't just study something and do some specialization that is historically part of this laboratory, but that I would be a carrier of ideas that develop and then fall into a net, and then you're really someplace in the world. You have a role, you have a feeling that you're connected to some sort of matrix. (*the artist*)

Rus and Toš also conclude that cosmopolitanism generally expands among the elites (scientific, economic, and cultural), but that the majority tends to preserve its nationalist orientation, and thus the chasm between the elite and the masses

inevitably widens. They also research the conditions separating local and supranational identity, and find that more than two-thirds of the respondents in 14 EU countries identify with the place or region in which they live, and only one-quarter with the state or homeland. From these findings, the authors conclude that this might have to do with the process of globalization combined with the modern orientation characterized by identifying with the nation state or country. Globalization attempted to shift identification to some larger supranational unit such as the EU or the world as a whole, and in fact caused the opposite to happen. The authors also emphasize that the phenomenon should not be understood as a return to pre-modern local closedness, as the symbol of contemporary post-modern localism is the “electronic hut” that combines the openness of the worldwide web and local existence in highly urbanized villages:

And then you have to decide whether you're a physicist or a Slovenian. I think I would rather on some level be a physicist and contribute to the international world of physics. (*the self-made man*)

In their 1995 research of Slovenian public opinion, Niko Toš and his colleagues<sup>149</sup> asked respondents certain questions about science and I cite here the most some findings, that are in context of my research: 19.1% completely agree with the claim that we cannot speak of Slovenian science but only of science in an international sense, 12.3% didn't agree. Some 63.4% of those asked also believe that it is most important for Slovenia to train a larger number of average scientists who cover all the main scientific fields and can follow world developments, and only 24.4% believe that it is important to train a small number of top scientists in specific fields who might ultimately be candidates for the Nobel Prize.

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<sup>149</sup> Niko Toš, Mitja Hafner-Fink, et al, “Slovensko javno mnenje 1995/1,” In: Niko Toš (ed.), *Vrednote v prehodu II. Slovensko javno mnenje 1990-1998*, FDV, Inštitut za družbene vede, Inštitut za raziskovanje javnega mnenja, Ljubljana, 1999, 495.

## 4.2 Abroad

In this chapter, I will address the circumstances around the actual departures of young researchers to foreign countries, the ability to integrate into their new environment, work conditions in the foreign country, and the perspectives of the researchers themselves on migration in the academic sphere, which is often described with the term “brain drain.”

Slovenian academics who migrate deviate from the national pattern of career paths, conditioned on tradition, history, language, and (non)mobility. The emigration of academics and researchers represents so-called “elite migration”<sup>150</sup> as distinct from other kinds of migration. Since 2009, there has been a significant increase in emigration to foreign countries, even among the traditionally non-mobile Slovenians, and especially among young Slovenians, though not necessarily only those with higher levels of education.

### 4.2.1 Departure

One of my informants precisely described the complexity of making the decision to pursue his/her studies in a foreign country and the environment that influenced the choice of program and location/country for undergraduate studies.

After high school, I wanted to go and study biology in Munich. Why biology? That was almost accidental. I was also very interested in art, I had done a lot of painting and music, and on the one hand I wanted... But really my strong points were analytical, mathematics and such, and this runs in my family certainly. But it was art that attracted me, it's mysterious, but I have the feeling I'm not good enough for it. (*the artist*)

This utterance reflects the dilemma of a young person with diverse interests and potential, the justified or overly strict self-criticism, self-image, expectations, as well

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<sup>150</sup> Ibid., Žeks.

as the openness to the opinions and values of the family that in the end shape the final decision.

As already mentioned, all of the informants completed their undergraduate studies in Slovenia, and five of them also completed their doctoral studies in Slovenia. In looking at all the personal factors and factors from the environment that influenced the decision to relocate to a foreign country, there was in all cases the immediate impulse that made the emigration actually happen. Often that impulse was the advice of a mentor, in a couple of cases, an invitation from a foreign country for a short period of study during the undergraduate or post-graduate period. In this phase, the most important role is played by the direct impulse of a mentor or the student.

It also has a lot to do with luck. As with all careers, it is important that you are in the right place at the right time. This also means that you meet the right people at the right time, a mentor who sees your potential, who helps to open doors for you, to enter the world of research. (*the photographer*)

Mentors who are themselves engaged in international research projects seem to understand the importance of foreign experience to every scientist very well, and likewise they are prepared to take foreign students from outside of Slovenia into their groups to the extent that a local rigid administration allows them to. In Slovenia, research groups do not function in such an open or fluid manner. Indeed there are many cases where researchers spend their whole career progressing slowly within the same laboratory.

Each laboratory has its own practice, its own principle of working, approach to the task, method of organizing work within the laboratory, and I think it is good for all scientists to work in a few laboratories, at least two or three let's say, in order to take the best from each of them. It may be the way of working, or the way of analyzing results and data, or the way of organizing experiments, or whatever. And at this point, in my area, there are not a lot of laboratories in Slovenia that do that kind of work, so if you want to gain experience in several laboratories, you have no choice but to go to other countries. (*the musician*)

The quote below emphasizes the importance of a mentor's recommendation, and the name and reputation of the educational institution where the researcher receives his or her undergraduate education. When applying to an American university, this informant only later realized that without the intervention of his mentor, his application would not have even been considered. It would have been automatically rejected at an earlier phase because of "the obscurity of Slovenian universities".

But then they told me that my CV, in fact my whole package, was from such a primitive university that it didn't even come to the right people, that it got stuck with some secretary. That's what happens, some secretary throws away more than half the applications, even ones that are really pretty thick.  
(*the fast-talker*)

This example points out the importance of an educational institution's reputation and also the trend that, even in the world of science, the brand name (and also the personal brand name) has become exceptionally important. This phenomenon is noteworthy in cases where a laboratory environment becomes closed and administrative forces set up barriers to entry. Nevertheless the biggest "stars" in science generally have completely open doors for collaboration. As Stephen and Jonathan Cole<sup>151</sup> point out, how much physicists are cited is highly dependant on the university to which they belong, and likewise the symbolic capital of the individual researcher is partly dependent on the symbolic capital of the laboratory in which he works. Here it would be appropriate to quote the statement of the informant who reported how he applied for a position in a foreign university and how the first thing he realized was that coming from an unknown university in a small country is a barrier to desired situations. It appears that once one gains a position in a foreign country, then a doctorate from a Ljubljana university is no longer a "handicap," because his own name was already a "brand name." As he explains, another colleague of his had a similar experience.

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<sup>151</sup> Stephen and Jonathan R. Cole, "Scientific Output and Recognition: A Study in the Operation of the Reward System in Science," *American Sociological Review*, Vol. 32, No. 2, 1967, 377-390.

I'm not good enough to be among the superstars, no, but I see that people who have done pretty much the same as I have, have good positions in foreign country. If I look at it realistically, if I have a doctorate from the University of Ljubljana, that literally does me no good, if I want a better position, because I am not so good that it doesn't matter. Basically, if you really stand out, then it doesn't matter, especially in America. After a while, it's all the same, not completely but almost, because I know .... you're not going to use my name, are you? Because I could speak easier if you don't use my name, like 'Janez Novak<sup>152</sup>,' a professor at one of the best American universities. He told me how he got a professorship, he was there because a big man stood behind him and pushed him forward for a year. When he said he was from the University of Ljubljana, they looked at him a little strangely, but then when things worked, when he started to publish articles in Nature, when he started to earn money, then it was totally irrelevant where he came from. Now he's just 'Novak' without the background. That's just a part of this story. I think if you come from Cal Tech you're seen as being on a different scientific level than if you come from the University of Ljubljana, when in fact it's exactly the same thing. (*the basketball player*)

In terms of the decision of my informants to relocate to foreign countries, it would be hard to speak of the flight or drain of research potential because, as young researchers at the beginning of their career under the protection of their mentors, they hadn't even had the chance to have had a bad experience of the Slovenian scientific sphere. At the moment my informants made that decision, it was merely a career step, made for what was anticipated to be a limited time, usually connected to the length of time of a scholarship. At the time of departure therefore, what was being evaluated was more the destination and not than the place that was being (temporarily) left behind. This is especially true of those who went to a foreign country to do their doctoral studies, less so for those who went to a foreign country after they'd completed their PhD in Slovenia.

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<sup>152</sup> Slovene synonym for "John Doe"

And now, why did I emigrate, I really don't know, I just took the natural path. I never reflected about it, there was only one natural path. I never wanted, I never imagined I would live in a foreign country. Or, that I said, aha, that's my goal. My goal was only ever to work well and honestly. (*the fast-talker*)

And they also financed me, they bought my airlines tickets, gave me some pocket money, enough to survive on up there, and I spent the summer there, and then the offer was renewed. That seemed completely normal. I didn't even think about it. I would never say that I wanted to escape Slovenia. It was great for me at home, but it seemed to me that the things I did went so smoothly, like a natural tendency, and I just followed it. And it seemed to me that doing me doctorate abroad would be really cool. (*the fast-talker*)

While I was here, life for me in Slovenia was completely fine. I never got to the point where I decided that I would have to fight to leave because there were no possibilities for me here. (*the musician*)

Although it is not possible to draw conclusions about the whole phenomenon from only few examples, it is interesting that of all my informants only three returned to Slovenia after their post-doctoral studies and all of those three had completed their doctoral studies in Slovenia. All of the interview subjects who completed their doctorate in a foreign country remained there. This conclusion suggests that the impression of these scientists that Slovenia is a closed system might be justified, that advancement is only possible for those who have built their career gradually (from within the system) from the lowest ranks of the profession to professor or head of a laboratory - always, it is worth noting, at the same laboratory or in the same university. In general, professorial and leadership positions at research institutes in Slovenia are normally not filled from the outside (either from within Slovenia, or from foreign countries). Likewise, one doesn't often see public tenders for such positions. Slovenian post-doctoral students evaluate their status in foreign countries



differently, as discussed by Christine Musselin<sup>153</sup>, since they see this period as an opportunity to widen their horizons, though not necessarily one that will help them find a better position at home. My informants said that after having completed doctoral or post-doctoral studies, the only positions open to young researchers are teaching fellowships, with heavy pedagogical burdens, which makes it difficult to continue high-quality research work and has relatively low salaries. It is also necessary to realize that these are young people often in the phase of starting a family who must generate a living. The reasons therefore for the increasing emigration of young talent are understandable.

As many other authors, Caroline T. Brettell<sup>154</sup> discusses the concept of migration in the sense of departure and return as a process of initiation, linked to values and special behavior (as in rituals such as baptisms or weddings). Looked at from an anthropological perspective, one could think of the departure of young researchers to study in foreign countries in a similar way. Some of my informants, when discussing their decision to continue their studies in a foreign country, saw it as a necessary step that would open the path to “real science”:

Another aspect that I found relevant is that real science happens only when you go somewhere else. Now I see that's the way it is, that's the way it's done, you go to college at one university in one country, and then you go somewhere else to do your PhD, somewhere else for your post-doc. That's true, no, and that's what I actually did. (*the fisherman*)

That's also what I tell students who do their undergraduate studies here in Ljubljana or anywhere in Slovenia and are deciding where to do their post-graduate studies, that there is a big possibility that if you stay home you'll

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<sup>153</sup> Christine Musselin, “Towards an European academic labour market? Some lessons drawn from empirical studies on academic mobility,” *Higher Education*, Vol. 48, 2004, 55-78. Musselin's research shows that in many countries the completion of post-doc programs is an advantage for researchers who want to return to their home country, as studies in foreign countries are one of the conditions to obtain a higher position.

<sup>154</sup> Caroline T. Brettell, “Theorising Migration in Anthropology: The Social Construction of Networks, Identities, Communities, and Globalspaces,” in: Caroline T. Brettell and James F. Hollifield (eds.), *Migration Theory: Talking across Disciplines*, Routledge, New York, 2000, 101.

acquire more or less the same form of knowledge, the same kind of knowledge, the same kind of added value, which is relatively limited, because the professors who will teach you completed their studies in an identical way, probably at the same institution where you did your studies. (*the literati*)

According to older theories of migration, there are two general motivators for moving: fleeing from unsustainable conditions or, in contrast, simply searching for better conditions for life. One could conclude from narrations of academics who have participated in discussions about their career paths that their reasons are not so extreme or single-faceted, and likewise none of my informants migrated only for either the first or the second reason. The departure was actually motivated by a search for better conditions for work - not in all cases because of poor laboratory equipment or less available financial resources. Sometimes there was simply no group in Slovenia that was involved in the area in which the young researcher was interested and he or she had no place in Slovenia to pursue a career:

And now, laboratories that are engaged in the kind of work that I do, are very few in Slovenia, so that if you want experience in several laboratories, you have no choice but to go to a foreign country. (*the musician*)

Often the first departure had to do above all with the acquisition of experience in a different environment and the search for the best possible conditions for research work (high-quality research equipment, laboratory, financial resources, ability to employ students, the possibility of collaborating with experienced colleagues, academic and personal freedom). The ambition for merely better material conditions and personal income did not appear to be a primary motivator for migration, although most of my informants did take note of differences in the salaries received by researchers in Slovenia and those in foreign countries. The first stay in a foreign country, often planned for only a limited period, was extended because of excellent working conditions and later return to Slovenia was no longer an option.

At that time, it was pretty much clear that I would go for only two years, it was a two-year fellowship, and at the beginning I intended to be there for two years and had no thought of remaining longer. But then it turned out that in two years I didn't do everything I was supposed to do and the stipend was automatically extended, because the project wasn't finished and I decided that it would be good to stay. But the longer I lived away from Slovenia, the more I liked it and that I'd like to extend it some more, and now I keep extending it. (*the musician*)

Another example of what happened to one of my informants was connected to taxes and, in this specific case, the tax laws were such that this young researcher who planned a temporary stay away from Slovenia was compelled to cut his ties with Slovenia, something he had neither wanted nor planned.

I think it was then that I applied for the Humboldt scholarship and I got it. It was very awkward because it was right at that time that these problems came up with taxation, and the Slovenian government didn't understand that when you get a foreign fellowship, it's not taxed in the foreign country, and that means that you're basically receiving a net amount, basically that the small amount of money you work for is yours. But the Slovenian government wanted to tax it normally. At that time, I solved the problem by cutting all my ties with Slovenia. I only kept my passport but closed all my bank accounts. All that I had left was my passport and I became a non-resident for tax purposes. That was a somewhat unpleasant experience. I tried to talk to the ministry but it looked like they didn't have much sympathy for my situation. And that's how I solved the problem. (*the musician*)

#### 4.2.2. Integration

In evaluating the individual's ability to integrate, it is essential to keep in mind that successful emigrants, in terms of their qualities, knowledge, and nature, are somehow predisposed to migration and integration - individuals who come from an open environment, who are flexible and adaptable. On the basis of the integrating skills of those who left, it cannot be concluded that Slovenians generally have good

integration skills. To the contrary, given that Slovenian society is fairly closed and has difficulty accepting foreigners, it would not be unreasonable to assume that the majority of Slovenians are less adaptable.

I don't know when I first went abroad, I knew how to talk about films, music, theater. That was the kind of education I got in Slovenia. If you go to university in Slovenia, you just get it by the way if you're a student. Other Eastern European students didn't necessarily pick up culture along the way, that was our civil society and it gave us a lot in that regard. Russians, Romanians, they were totally uninteresting as colleagues because they didn't have any interests. Only after about three years did they fall into that, and then they went completely wild, and, once they figured things out, they didn't want to go back to Romania or Russia under any circumstances. We had that advantage. We were better integrated into the western world than they were. We had also travelled more, we were used to it. We didn't feel less worthy in that way, and we figured things out quickly, were more flexible, were good at integrating in my opinion. (*the bicyclist*)

Listening to the narratives of my informants, I got the impression that academics tend to integrate well to foreign countries because of the micro-environment to which they belong at work - laboratory, research institute, or university - where they often spend most of the day, and also weekends and holidays. They tend to feel good in the research groups and frequently enjoy connections with their colleagues outside of work time as well.

When you come like I did to Japan, and you are included in a certain society, and they accept you, and because you don't have your own family there, it's great. Because you don't feel lost there. And you have the possibility to be included and distracted. The biggest problem for foreigners in Japan is not being included because for that you need to speak Japanese. Otherwise you're limited to the sphere of foreigners. Foreigners tend to be individualists, and so you're alone a lot. If you know the language, it's much easier to be included. It's still difficult to be fully accepted, maybe if you get married but that's a completely different level of communication. I know a lot of foreigners

who never even came close to succeeding at that level of communication. Let's say my job over there, at the accelerator, I was totally immersed in a Japanese-speaking environment. I spoke only Japanese. I gave presentations in Japanese, and, I when I got my next job as a professor, I lectured in Japanese. That's because I knew the language. I didn't need to but I wanted to, so I practiced and was more included. (*the stargazer*)

The oldest of my informants emigrated just before independence and, after many moves, settled with his family in one of the Scandinavian countries. His narrative about the specificities of the northern European environment to foreigners / immigrants is multilayered and deals with many of the aspects of the lives of immigrants. He says that it takes many generations for the environment to truly accept immigrants and for immigrants to integrate. He didn't mention any difference in the social integration of more educated immigrants and that of less-educated immigrants. This same informant observed the differences in values and national mentality of Slovenians and the citizens of Nordic countries, saying that he sees the greatest difference in the acceptance of responsibility both at work and privately (caring for oneself and one's family). He attributes this to the Catholic mentality in Slovenia, the possibility of "indulgence and forgiveness" of sins after death, as opposed to the Protestant faith where responsibility for one's actions is not deferred until the afterlife, but rather one must live honestly and responsibly during the course of one's life. He also noted a great difference in the attitude to work and science and knowledge, and says that in Scandinavia knowledge is an unquestioned value. Scientists are highly-valued by society and at the same time understand their work as part of the (psychological) social contract.

Of my informants, five (during the period of research) had families with one or two children, while the rest were in more or less close relationships with partners who were either Slovenian or foreign. Those who were married had Slovenian spouses. Of the five families with children, three had returned to Slovenia, of which two remained and one had left again. The influence of family played a large role in integration: namely, if the partner is not inclined toward the foreign environment,

and if, as parents, the emigrants decide that the home social environment is better for the children, then an attempt at return often takes place - which for the researcher often means a compromise. In one case, the researcher returned to Slovenia because of the desire of his or her partner, but after two years in Slovenia, they once again decided to take a permanent position in a foreign country, because the partner hadn't managed to find employment during that time. An academic career in a foreign country often means that the researcher takes on the entire financial burden of supporting the family, because the career of the partner suffers as a result of the move.

In one case, the partner of my informant was also a scientific researcher and the two attempted to find opportunities and foreign positions together, and partially succeeded in that effort.

The younger researchers who departed to foreign countries for doctoral studies and didn't have families tended to live in relationships with partners of different nationalities.

From the narratives of my informants, I discovered that Slovenian scientists working in foreign countries know each other, or rather of each other, if they belong to the same generation or work in a similar specialty. Socializing within the diaspora, however, is not characteristic for Slovenian scientists, and I got the impression that such contacts were not particularly desired or actively sought. When they do meet, of course, they have much in common.

Then, let's say, there were all these young people who were mostly programmers, male programmers at various computer firms, about 35 years and up. Then there's a couple of college students. And these people are loosely connected, they get together every once in a while, but it's not some sort of permanent connection, or constant social activity. Why there isn't is a good question, probably some sort of thing is possible, they could try to figure out something to do. But I think we Slovenians are not so used to working together. We're more out for ourselves, and then, when we

emigrate, we are even more out for ourselves. And because of that, there are no synergetic effects, we are not a united flow, although we should be. (*the fast-talker*)

Integration, of course, means inclusion in wider society, not only in terms of professional contacts at work. The informant who was living away from Slovenia the longest had his family with him the entire time. They were completely integrated into the new environment, all members of the family speaking the native language of the foreign country where they settled, children going to local schools there, and also having citizenship.

Integration seem to take place on the level of feeling a sense of belonging to the international academic sphere, which does not distinguish between the nationalities of researchers, but only on the basis of fields of research and accomplishment. It is interesting that the national identification of researchers is nevertheless deeply rooted in the public discourse (for example, a Slovenian scientist living in Sweden). My younger informants report that for the most part they socialize with colleagues from the laboratory, with other foreigners from the laboratory. It is probably an important factor that they don't have families of their own and that, unlike researchers living in their home country, they cannot spend time within their narrower and wider family groups.

That's the way it is, of course, I grew up academically in the Netherlands, not in Slovenia. I took all their values and these are now my values. I think I didn't even have values before. I acquired the values that they had and in a certain way these are now my values, at least as far as academic work is concerned. Of course, by definition, I now feel better here, and these values are closest to me, or American research values which I also like. (*the bicyclist*)

Intimate personal decisions and the sense of how long the residence in a given country will last both play a large role in integration. If the immigrant only plans to stay for a few years, than integration will be weaker. If the plans are for a longer-

term stay, then integration will be stronger. The purchase of a house, for example, is often an important moment in the decision for more permanent settlement.

In addition to the all-important factor (good work conditions), family values and the cultural values in the new country also play their part.

I didn't want to be in Europe. Maybe that was because we had lived in France, quite xenophobic, not simple at all. If I compare it with Israel and America, Israel really is a country of immigrants, okay, and America even more so. In America, you're free, and it's easier from that perspective. At least that's how it seemed to me. (*the basketball player*)

They're just, the whole society there is just more correct. Work is highly important. Work gives people their purpose in life, what they do. That they not only do things, but that they like doing them, and do a high-quality job. A lot of people there, or so it seems to me, work because they enjoy what they do. A lot of people work like that, which means that you work because you enjoy it, and of course you demand that you are adequately compensated. Everyone knows what they are worth and they negotiate for that price. When you hire someone, you know who that person is and what kind of work that person will do. The whole society functions that way as far as work is concerned. (*the bicyclist*)

The informants described significant cultural differences between the countries where they live or have lived. What was interesting was their sense of belonging to a given place. Namely, all informants who remained in Europe felt national belonging as a part of their identity. The farther they got from home, the more their identity acquired a wider geographical basis, the more European they felt. I understand the statement quoted below in the sense of the concept of otherness as described by so many anthropologists who emphasize the notion of difference and otherness as the essential concept that allows a person to conceive of the world and give it meaning.



The perception of so-called *Homo europaeus*, as Ksenija Šabec<sup>155</sup> explains, is to some degree valid only if the perspective of the observer is outside of Europe:

I know that once you are in America, it seems that the whole of Europe is your home. Which, in my opinion, is a bit of a false picture, but the differences are substantial enough that that is how you are defined, as a European. In Europe, you feel enough at home wherever you are, but I was also more of a foreigner than I am in America, from Slovenia, that is. I have a lot of contact with Italy, but I am more of a foreigner there than I am in Switzerland, much more, but Italians are perhaps a special case. They are cliquish and speak only in Italian, so it's difficult to penetrate that society. (*the basketball player*)

As Bosnian-American writer Aleksander Hemon<sup>156</sup> says in one of his interviews: "What you are is a result of everything from which you have been excluded."

While within Europe, it strikes me as a relatively homogenous space and the same goes for the way of thinking. There are differences, of course there are, but for someone who moves to America, Canada, those are countries that are open and you can enter society in an instant. I remember how easy it was to go and begin to live in Australia, much easier than Scandinavia where you need, let's say, a generation to really feel at home. If that bothers you, it can be a problem. It seems to me that because of this, Canada and America in a certain way kill your identity. You can still have it on the micro-level, but globally it's a sort of instant identity that pulls you and takes your own identity out of you. (*the fisherman*)

#### 4.2.3 Conditions for work in foreign countries

The reflections of my informants about work condition in foreign countries above all addressed factors such as laboratory equipment, quality of co-workers, work

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<sup>155</sup> Ibid., Šabec, 136.

<sup>156</sup> Aleksander Hemon "Po treh letih sem začel pisati v angleščini", In: Ervin Hladnik Milharčič: Intervju z Aleksandrom Hemonom," *Delo*, July 7, 2003, 4-6.

relationships with researchers and others, methods of securing projects and financing, ability to manage one's own time, and the extent of bureaucracy. I will begin this section with the reflections of one of my informants on financial aspects and the motivation to do research work:

It is true that we are financially covered, that we do not have poor salaries. They may not be brilliant, but we do not have financial troubles, as do perhaps Slovenian scientists, who need to pull themselves out of a rut. Or is it that they are hired people who are not intrinsically motivated for research work, but are simply motivated to have the position. That the position means a lot to them but they don't realize that they have taken on a responsibility.  
(*the bicyclist*)

The value system is different there than here. And I noticed that there's a whole pile of bureaucratic things, that here you are more of a pedagogue, that there you are more of a researcher, that there you are rewarded for research work, not just you, but your whole department. And your college is rewarded too. If we have a great article published, the dean will come to me and praise me, saying how great it is that you promoted the college, that that means more funds from the university. (*the bicyclist*)

My informants often put forward a theme that seems marginal in Slovenia, referring to science as a market commodity of sorts, which by necessity includes various activities and procedures. Laura J. Schneider,<sup>157</sup> in her review of a book by Aileen Fyfe and Bernard V. Lightman, refers to their conclusion that science in the 19<sup>th</sup> century science was already a market commodity that was promoted in exhibitions, museums, public lectures, and public debates of scientists. She mentions that scientists were often invited to lecture publically because they were considered top attractions, regaling listeners and viewers with experiments and dramatic effects.

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<sup>157</sup> Laura J. Schneider, "Science for sale," *H-Net Reviews in Humanities and Social Sciences*, 2009, <http://www.h-net.org/reviews/showpdf.php?id=22999> accessed October 13, 2011.

This represents the popularization of science, a way of communicating the meaning of the knowledge and work of scientists to a wide audience and thus creating a social climate that accepts knowledge as a value and indeed as a priority for social development. My informants also described their experiences in foreign countries, giving concrete examples of when they, as scientists, appeared in public to give popular lectures, were present in the media or at events to promote science. They experienced this as a part of their professional obligations: specifically, that it is a way of showing to the society that actually finances scientific research how important scientific advances are working for it. The ongoing promotion of science is necessary in order to raise awareness of the importance of education. It should not only be addressed to the adult population but also to children and young people. This is a way of raising the profile of the field of science and research, and emphasizing its role in the social contract.

What can I say? Even in terms of the social contract, it is much clearer there. You, as a university instructor (someone who is employed at the university), you are not merely a public servant, and, because of that, you have much more freedom in terms of how you organize your job, how to negotiate your salary, what rights and responsibilities you have, responsibilities to society as well, the society that pays you. And we all realize that in some way and we try to do public lectures, and science nights for kids - or rather scientific days for kids and evenings or nights for the general public - to constantly promote our research work to the public, and show them that they are getting something for the money that they've invested in us. And if you write a good article, you present it to the public, you do interviews, that sort of thing. And if you just think you're going to sort of fake your way through university, it won't work. There is no way. That's how the social contract functions." (*the bicyclist*)

The awareness of researchers that one of their tasks is to in some sense popularize science is not very prevalent in Slovenia. There are regular public lectures in the field

advertised in the media, and occasional science nights, events take place at the House of Experiments<sup>158</sup>, and the presentation of the achievements of successful research groups to the general public. Despite these activities, the public seems to have little awareness of the importance of scientific work in Slovenia and people don't seem to know "what scientists actually do." Complicating matters, scientists generally work in highly specialized areas and few of them are versed in appearing before a wider lay public and infecting them, so to speak, with enthusiasm about the current and potential discoveries of scientists.

The role of scientists should also be more active, much more active, in order for us to try and change the values of society. Because society cannot change by itself in the right direction. Society goes along in its own way and that current can be manipulated in a positive sense. I mean that's what the media does. It can write stories about the success or failure of individuals, how these things strike it, and I think that we scientists should take the initiative, to lift society to a slightly higher level and effect political decisions.  
*(the photographer)*

My informants attributed a decisive advantage to foreign countries in terms of the quality of laboratory equipment and the colleagues with whom they compare themselves, compete, and collaborate. There is the sense that you can advance on the basis of achieved results, that financing covers at least a five year period, that laboratories are run by competent people, that they are not overly bureaucratic, that the rules are clearly defined though they are not often written down.

Because I don't know, you have to realize that certain things that we have, that are available in foreign countries, are just not available in Slovenia. Just the fact that I am surrounded with people in the laboratory who are involved in similar things and with whom I can discuss problems that I wouldn't be able to discuss with anyone in Slovenia, because there is simply no one familiar with that area. That's already such a big reason to be here, and, of

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<sup>158</sup> Hiša eksperimentov. <http://www.he.si/index.php?lang=en> accessed October 30, 2012.

course, all of the equipment. Well, now there is at least one laboratory in Slovenia that has practically all the equipment that we have here, but then there's also the input from colleagues, and from other groups. There is more of that type of interaction here and I have more people who can help me than I would have in Slovenia, or maybe I just don't know them. It seems to me that there is actually more general expertise all around. (*the musician*)

Another important factor is the openness of a system to innovation, for example, the introduction of new courses into the curriculum. One of my informants said the following:

If I want to teach an undergraduate subject, I write two A4 pages. I do that in March and I start to teach in September and we see how many students have enrolled, how many points I get if I offer the course in a masters program, let's say as an elective or something, and that's that. Then the thing is, you're on several different lists, and you basically started from nothing. (*the fast-talker*)

The same informant also described the extent of his teaching duties:

And that's the education system. We have undergraduate teachers, instructors, who teach three, four subjects a semester. I teach only one. I lecture two times for an hour and fifteen minutes each week and that's considered a lot. And let's say I lecture only graduate students. In this subject, I had 75 students, in the other we'll see, but there'll be about 70 for sure. So the system there is that, say, you have older professors, and you come to them and you ask to teach a new course, and they say: you're young, you have energy, go for it! (*the fast-talker*)

Informants highlighted the multicultural quality of the laboratories as one of the advantages of working in foreign countries that attracted them. They saw it as an opportunity to get to know new cultural ways, to adapt to them, and sometimes even adopt them.

Another important factor is mobility and the feeling of freedom that researchers urgently need in order to be creative in their work. The quote below addresses the method of selecting research themes, encouraging independence, self-initiative, and responsibility for one's work:

But we don't have any regular oversight, meetings, so that on one side there was personal responsibility already very early. That surprised me. Right away in the German or Slovenian system, you come to your mentor, the mentor says, okay, our laboratory does this, we have a little problem with delta, that's now your problem. Go home, read books and articles, and come back with an idea, and we'll talk. Here in America, you are not accepted by a mentor, you are accepted into a department, and you choose one, you choose a problem, and if your mentor doesn't know the problem, he goes and learns about it. (*the self-made man*)

I came and asked what I would do in this group. He (the professor) said: I don't know. I asked what the group did. Yeah, lots of things, this and this and that, look at the articles. What am I supposed to do? I don't know. Just pick something and come and we'll talk about it. Although that choice of theme, the freedom to choose a theme, was a double-edged sword, but it quickly got me into the research work. You were never just some boy who did work according to instructions. And then it extended into a doctorate, that relationship with my mentor. It was very difficult, but also very productive in terms of the independence of the work. (*the self-made man*)

During the narrative interviews, the opinion prevailed that the most important motivating factor for research work was a desire for success that would translate into results, and to secure the financial resources for continued research. The informants all emphasized competitiveness but in the constructive sense, not in the sense that your achievements would hinder another, but simply the search for results and more and better work.

You don't have to do everything on your own. A lot of things are already there. You are dropped into the atmosphere and if you feel like competing, if

you don't want to stagnate, but you're always on the knife's edge. I am a professor. I have this position for five years now, but that doesn't mean I couldn't be fired in a year. If there's not enough money or if I can't bring in money or results. It's difficult and merciless. If a person doesn't like it, he can always go. (*the fisherman*)

When my informants spoke about a potential return to Slovenia, the most prevalent reservations were that, in Slovenia, advancement on the basis of results is rare and that good positions do not generally go to the highest-quality researchers. The Slovenian system strikes them as not transparent, incomprehensible, and dishonest. At the same time, they emphasized that the situation in foreign countries is not ideal either, in that the competition is intense and you must work extremely hard in order to be successful and achieve top results:

But you have to know that work in the laboratory is not limited to eight hours a day. It is not a job that lasts from eight in the morning until four in the afternoon. It often starts earlier and lasts later. The work is simply so creative, or it has to be so creative and free, but in the end only success matters. Ideas don't just occur between eight and four. They usually emerge at the most impossible times and contexts, in some other place, during an exchange with other scientists. (*the photographer*)

Yeah, it's not like all milk and honey outside of Slovenia. I think there are a lot of positions, but also a lot of competition for them, because there are more people, and it's just not that easy. (*the musician*)

Christine Musselin<sup>159</sup> draws from research on whether the European Union, in addition to encouraging a single research space, also works for the emergence of a single market for the academic labor force. She bases her conclusion on the findings of two studies, one from 1995 that covered Germany, France, and Great Britain, and one from 2004 that was an analysis of the French academic labor market. The

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<sup>159</sup> Ibid., Musselin.

European Union strongly supports the mobility of students and professors / researchers for purposes of exchange and collaboration, joint projects, unified standards and practices, and the creation of a common European research space (ERA-European Research Area). Musselin observes if these policies, in addition to joint projects, also encourages actual mobility and increases the flow of human capital within the European space. She concludes that the market for academic labor within the European Union is still very national and she cites the following reasons: the varying statuses for those employed in science (researchers in Germany are civil servants, in Great Britain they are employed on the basis of individual contracts, and employers are often private institutions), wide differences among the countries in terms of pedagogical duties that must be performed by researchers, the difference in the level of salaries and benefits among countries, not to mention variations in research methods and hiring methods for new employees. The various specifics of individual countries are also important, such as language (though English is the lingua franca and certain countries, such as the Netherlands and Finland, do not expect researchers to learn the local language). As Ksenija Šabec<sup>160</sup> reports, in the Netherlands, the use of English is so extensive that the population is for all practical purposes bilingual. In Dutch universities, it has even come to the point that it has been debated whether English should become the official language of instruction, though for now the proposal has not received sufficient support.

According to data about Finland collected in 2004 and presented by David M. Hoffman,<sup>161</sup> roughly 76% of academics were employed at the universities where they had received their highest degree. There are no similar data from Slovenia but we could expect such or even higher percent.

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<sup>160</sup> Ibid., Šabec, 249.

<sup>161</sup> David M. Hoffman, "Changing Academic Mobility Patterns and International Migration: What Will Academic Mobility mean in the 21<sup>st</sup> Century?" *Journal of Studies in International Education*, Vol. 13, 2009, 347. Originally published online July 25, 2008, [www.jsi.sagepub.com](http://www.jsi.sagepub.com) accessed March 3, 2011.



Systems of career advancement also vary among countries. In Sweden and Norway, it is typical that a researcher remains employed at the institution where he completed his or her studies and got the first academic position, a system that is not only unusual in Germany but almost impossible, since the German system provides promotion only for academics who are mobile and increase the flow among institutions within the country. Musselin writes that only in cases where a candidate receives an offer from another institution can he hope to negotiate conditions and possible promotion within his or her home institution. The closed quality of the German academic space, as Musselin describes it, could be compared with the situation in Slovenia. In contrast to these countries, France, for example, has a very open academic space and offers many opportunities for the employment of researchers. Musselin also discusses the specificity of post-doctoral studies, and with it employment and migration within the European research space. She concludes that young researchers view the post-doctoral period as an unpleasant but necessary period, because taking a post-doctoral position in a foreign country increases the possibilities of employment at home. In terms of the shortcomings of this system, the author points out that in many cases the financing of post-doctoral studies is too short-term for the researcher to pursue any serious work, and says that post-doctoral students are often given questionable research assignments. Also there is always the danger that, during the absence of the post-doctoral student, all positions at his or her home institution will be taken. Employers of post-doctoral students usually regard them not as potentially permanent employees but as a relatively cheap source of labor. For the post-doctoral students, an added pressure comes from the fact that, if they do not bring positive results, it could mean the end of their ambitions for a successful academic career.

Now, it was already obvious during doctoral studies, to go to a foreign country for at least a few years, it was like an unspoken requirement. I'm not familiar with the bylaws, but there was an implicit demand that you spend a couple of years in a foreign country and only then would you have a chance of employment here. That was basically the path to Slovenia, through a

foreign country, at least that's how I saw it. I did the exact same thing as everywhere else in the world. (*the basketball player*)

Now young people in our group do exactly the same thing, only I don't know what will happen to them. More than just in Slovenia, there is the wider problem of our whole field. There is a relationship of 1:5 PhD holders for every position, or even 1:10, so the struggle for jobs is intense, everywhere, in America, France. It will get even more intense and a typical path to a job will be to do two, three, four post-docs. The quickest will take two years, and even the biggest superstars, the most influential, the ten most influential scientists, they also had two-year post-docs. Less than two-year post-doc program, in our field it just isn't enough. Because it's impossible to be better than they are. They're like Einstein. It's typical that you rotate around for about five years in post-docs. (*the basketball player*)

Musselin's final conclusion applies also to Slovenian researchers, although my informants did not see post-doctoral positions as a way of improving their chances of employment in Slovenia, but as an opportunity to make a name for themselves outside of Slovenia. Musselin also describes different ways of finding and selecting potential candidates - researchers for employment - concluding that the methods of locating staff internationally in academia are similar to methods in the private economy.<sup>162</sup> Musselin concludes that, because of the many cases of international collaboration on projects and increased mobility of students and researchers (usually for short-term periods), a single research space is in fact emerging in the EU. Nevertheless, because of the traditional specificities of national markets for the academic work force, we cannot yet speak of a single European academic market.

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<sup>162</sup> Musslin discusses the following methods: the search for new researchers with advertisements in the appropriate media where future employers choose among submitted applications; the acceptance of applications of active jobseekers without regard to available positions; active jobseekers who only submit resumes to interesting institutions. The best and most prestigious institutes also use methods used in the private sector to find and attract top experts and managers - namely, headhunting, when institutions directly invite candidates that they would like to employ. In science, the latter method of recruiting is the most promising for top researchers. In science, it is often the case that the reputation of the employer plays a large role in attracting top collaborators (researchers) and, because of this, the global market for human resources in science and technology is exceptionally competitive.

Journalist Jasna Kontler Salamon<sup>163</sup> offers an article in which she provides information about IST, the research institute in Klosteneuburg near Vienna, which was recently created with government support following the decision of the Austrian government to establish a top-level institute in the field of natural and computer sciences that would be comparable to the Max Planck Institute in Germany, the Rockefeller University in the United States, and the Weizmann Institute of Science in Israel. IST has research programs and post-doctoral studies that are international in nature, the official language being English. The institute has close links with Austrian business, working together to create spin-off enterprises that will spur economic development. The institute has hired a team of well-known international scientists with experience in similar projects and proven leadership capabilities in addition to excellence in their scientific fields. The team was entrusted to create an overall concept and was promised support for all their decisions and choices. One of the key players in the early phases was Dr. Haimo Harari, a long-term director of the Weizmann Institute, who emphasized at the end of 2008 that the essential ingredient for success was attracting a sufficient number of high-quality researchers and professors, who are not surprisingly in limited supply. As there are a number of high-level institutes that want to attract the best, it is necessary to offer not only good salaries but also optimal conditions for both research and pedagogical work.

One positive factor is well-organized support, and orderly and minimal bureaucratic obligations. One of my interview subjects spoke of his contract with a top international institute:

I'll just say that my employment contract was, I don't now, four pages long, written in completely normal readable English and that it contained everything I would need to know for the next five years. That's that. (*the self-made man*)

Another described his American experience:

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<sup>163</sup> Jasna Kontler Salamon, "Elitni inštitut vabi le najboljše." *Delo*, December 16, 2010, 24.

Let's say, also now with the standard deal that you have for Assistant Professor, now there's a kind of contract, let's say, I mean I didn't sign a contract. I was with the department head, and we just edited this letter in Word, a text like ten centimeters long, I signed it and that was all that I ever signed, no contract. Nothing. I'm there seven years now. After seven years, they ask for letter of recommendation. They just give a list to some people and then write these letters and they have to rank these people and I'm one of those people and if I get a ranking of one or two, then I'll become a professor, if not, I just have to pack my things and leave. That's the whole deal. (*the fast-talker*)

Then let's say, which is great here, there are secretaries who are such unbelievably great secretaries. I mean the administrative staff is totally amazing. (*the fast-talker*)

Similarly, it is necessary to attract the best students from all over the world (the selection is made by professors) and, in this way, Harari's vision was realized. IST is fully functioning and growing. The laboratories are comprised of international teams. Currently, a Slovenian professor is working at IST and he has established his own group.<sup>164</sup> Researchers at IST enjoy complete scientific freedom and the institute emphasizes its independence.

But this is what I wanted to say: you need a kind of totally non-linear effect either in terms of financial resources, or something, freedom! Personal freedom means so much to academics. Everyone is willing to sacrifice money to do what they want. So that you're free from bureaucracy. You know what they say, how to steal a good professor from Harvard. You can never pay him as much as Harvard can, because they have thirty billion dollars in a chest. But what you can say is this: okay, you come here, you will be pay 30% of what you get there, but we will finance six doctoral positions, you won't have to apply for any grants. That's how Max Planck gets people from America. They get them by disencumbering them of the endless

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<sup>164</sup> Milan Ilić, "Slovenec ustanavlja svojo skupino na IST Avstrija," *Delo*, March 8, 2012, 17.

bureaucracy of applying for grants that is inherent to the American system.  
(*the self-made man*)

In their descriptions of work conditions and comparisons of Slovenia with various foreign countries, my informants mentioned the organization and leadership of universities, institutes, research groups, and laboratories. Aleksandra Brezovec<sup>165</sup> also discusses the need for changing and professionalizing the leadership of research and educational institutions and presents the report of German deans at the 2010 DEAN conference for rectors in Barcelona. The report focuses on a management study performed by the German ministry of higher education and the deans' recommendations on improving the management and general conditions of colleges and universities. The role of deans is seen as that of "middle management" and the securing of financial resources and ties to the business community and private sector is viewed as crucial to the future development of universities.

We could have really drastic changes too, for example that deans or rectors, certainly rectors, would no longer be academics, but would be managers - managers of knowledge. That would mean that all this bullshit would no longer be allowed. His role would be to maximize the scientific output of the whole group. And if some respected professor can't do that, then he should go somewhere else. But we don't have that here. That doesn't mean that it doesn't exist anywhere, just not here. If it did, a lot of things would change.  
(*the stargazer*)

In addressing work condition in foreign countries, I should also mention various immigration policies that are implemented by individual countries in order to assure that they have a sufficient number of qualified employees. In her research, Karine Tremblay<sup>166</sup> compares the immigration policies of a number of OECD countries and

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<sup>165</sup> Aleksandra Brezovec, "Valček univerzitetne inovativnosti za postarano Evropo," *Delo*, December 11, 2010, 17. The DEAN conference was organized as part of the European Centre for Strategic Management of Universities, [www.esmu.be/deanconference2010.html](http://www.esmu.be/deanconference2010.html) accessed December 18, 2011.

<sup>166</sup> Karine Tremblay, "Academic Mobility and Immigration," *Journal of Studies of International Education*, Vol. 9, No. 3, Autumn 2005, 196-228, [www.jst.sagepub.com](http://www.jst.sagepub.com) accessed March 8, 2011.

concludes that there is a positive correlation between doing one's studies in certain countries and later decisions to settle in those countries after studies have been completed. Immigration policies generally give priority to applicants who have studied in the country. Here we might mention the concrete examples of Canada, the United States, Australia, France, and New Zealand. Trambly introduces data from the European Commission (November 2003) that 75% of students from the European Union who received their PhD in the United States have no intention of returning to Europe.

I close this section with the quote of one my interview subjects who emphasizes the factor that is the most important for the career satisfaction of virtually all of the interview subjects:

Yes, to be a scientist is a prestigious profession. It is not paid very well. We get significantly less than people in industry, much less, but you are free. To be a scientist is prestigious, certainly it is. But it is relatively enough, that we are in newspapers, but we get less money than in industry, but money isn't everything and although there is less than in industry, it is still enough." (*the fisherman*)

#### 4.2.4. Brain drain

The term "brain drain" is a commonly used term, also among scientists and researchers, though they often interpret it in a very individual manner. In the Slovenian language, the term is translated with the word "escape" or "flight" rather than "drain," which will explain some of the responses of informants below.

Some of my informants see the concept of brain drain as relevant, although in their discussions of it, they sometimes come to contradiction and come to quite different conclusions. Most of them feel that the expression "brain drain" is obsolete, especially in connection to the most educated people and academics. We can no longer speak of drain or escape, since borders no longer exist in the top echelons of

academia, and science has become global. It is more accurate to think of the flow of research potential.

The people who use that expression (brain drain / escape), I would hit them over the head. It seems like nonsense to talk about the escape of brains since we are not in jail. (*the fast-talker*)

My informants do not see themselves as “escapees,” as people who had to flee from somewhere. Rather they see their relocation as something completely normal, necessary, and planned given that they wanted to pursue a career in the highest echelons of research.

Let’s say, I don’t see myself as someone who would escape, and simply abandon his homeland. (*the photographer*)

As far as the term brain drain is concerned, my informants also mentioned the consequences of the emigration of top researchers (and research potential) from their countries of origin. It is clear that the significant departure of top potential leads to the dilution of the country that is left, worsening conditions for those who stay behind. This in turn can cause continued departures and the process only accelerates and deepens. On the other the hand, the countries to which academics relocate become denser, more interesting scientific centers, which also accelerates migration into those countries.

I think that brain drain is a relevant expression, relevant for the social environment in which you live, that the intelligence and development level of thought remains high. That is something that every country should want in principle. Why? Because if you have smart people who are capable of solving problems, you won’t end up living in Idiotsville, engaging with only idiotic things, but problems will be solved and the quality of life will improve. If you only have stupid people, who cling to rules like a drunk to a fence, and everything becomes bureaucratized because no one knows how to think with their own head. Then you can’t do anything and it’s hard to live there. The quality of life for everyone who lives in such an environment goes down.

That's why it's very relevant that this environment, country, city, whatever, maintains as high an intellectual level as possible. It's like that everywhere. (*the stargazer*)

My informants also reflected on alternative scenarios, among them, of course, that they had never relocated, that they had remained in Slovenia, and attempted to pursue a top-level scientific career. Most evaluate that possibility as unrealistic, at least not in the most current scientific fields that require the best possible equipment, the best possible team, substantial financial resources, and excellent organization and leadership. One explicitly stated that it is better for Slovenia if its scientists go to a place where they develop their potential to the fullest and achieve results that are relevant on a global level, rather than for them to remain in Slovenia and become merely good scientists who never fully make use of their potential.

That's the situation, right, if Slovenia cannot make use of 'brains' and its intellectual capacity, then it does no harm to Slovenia if they go elsewhere. That's how I look at it. That's point one. Point two is how will Slovenia acquire new technologies, knowledge, and new experience, if not sending people out where they can get that experience, whether they come back or not. And the third thing, Slovenia, it's not, sort of... it just that borders are sort of an archaic idea. I don't know. We all gain if some Slovenian works somewhere else. We get something out of that even indirectly. If he discovers something, if a Slovenian, say, finds the path to a cure for cancer, all Slovenians would benefit from that. It's not that everything must remain there. Universities are public entities. It's all publically accessible, that knowledge, if you're willing to find it. The last point is that that we should allow Slovenians to do what they want to do, right? Why would we, I don't know, take taxpayer's money if we use it for things that are not remotely of interest, to pay to make people study I don't know what. Even smart people should have the right to receive help getting a good education, right? (*the bicyclist*)

Now, yes, if there is no laboratory at home where you can work, or you can't get into some kind of group, then of course you go somewhere where you



can. It's true, I think, that some students leave the country when they finish their studies, and that seems all right in any case, precisely because you get new experience, because you see that things are done differently. That doesn't seem problematic to me at all. What is problematic comes later when most of them don't come back because conditions where they are better than at home. (*the musician*)

#### 4.3 Home

Oto Luthar<sup>167</sup>, the director of the Research Centre of the Slovenian Academy of Sciences and Arts, has concluded that current policies in the Slovenian research and academic spheres forces researchers not only to perform their own scientific work and other professional obligations, supervise employees he supervises, but also promote research results and take care of infrastructure. He also notes the fact that maintaining the quality of resources (human, financial, building, and material) requires special knowledge and experience that can be offered only by capable, well-organized, and autonomous players. One of my informants spoke in a similar way:

The University of Graz was relatively closed and rigid and in a similar situation, as I imagine is Ljubljana, but in the last five years they managed to create—probably due to the fact that they employed more managers, that's to say staff who somehow try and connect the university to the wider economy and at the same time open the university to the outside - an environment for researchers that is increasingly attractive. (*the photographer*)

As, among others, David M. Hoffman<sup>168</sup> suggests, the need and desire for highly skilled migrants / academics lags behind the ability of institutes of higher education to adapt and to provide solutions to new situations in which foreign students or professors / researchers would come to a new country. In Slovenia, the inadaptability and closed quality of the system is expressed even before possible arrival with

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<sup>167</sup> Oto Luthar, "Allegro molto appassionato," *Delo*, June 5, 2010, 12-13.

<sup>168</sup> *Ibid.*, Hoffman, 353.

enormous administrative barriers and cumbersome bureaucratic procedures. As an introduction to this theme, I provide a quote from one of my informants who fully planned to return to Slovenia after he had completed his doctorate in a foreign country, but things turned out differently:

When I got my PhD, I was willing to come back. Great, I thought at that time, somebody will write to me, someone will invite me. Because in Europe, the very best institutes that I approached wanted to snap me up right away. My current boss, he had won the Nobel the year before, was constantly telling me how lucky he was to get me. And really, I was great at that time. I was lucky that everything had gone my way, I had developed three methods that had enormous potential and I had no trouble producing excellent articles. I didn't even have to try that hard. I was young, inexpensive, full of energy. I wanted to go back to Slovenia if one of the better-known institutes would hire me, but I asked around and I heard that there was no room. (*the artist*)

#### 4.3.1. Conditions for work at home

One must examine the condition for work in the field of scientific research in Slovenia from two perspectives. This dual perspective will allow us to uncover the specificities that preserve the current relatively closed quality, reducing the possibility of capillary progress from the lowest position to the highest for those who have pursued a scientific research career entirely in Slovenia (with only short, several-month long study trips in foreign countries), while at the same time preventing the return of Slovenian researchers who have pursued part of their careers in foreign countries, have created a name for themselves, and achieved a high position. In a similar way, the system prevents the inclusion of foreign professors and researchers, and does not provide appropriate positions for young or foreign employees.

First, because the system in Slovenia is relatively rigid and simply does not allow for the capillary principle of the advancement of young employees. Second, the number of positions is limited. (*the photographer*)

In short, I returned, and it was desperate, it was really desperate. We didn't have enough money to live. We had to move in with my parents. It would have been absolutely impossible to rent something. We had a baby at that time. That was the hardest year of my life, when we returned, in many ways.  
(*the basketball player*)

The informant who is quoted above returned to Slovenia after many years of study and work in foreign countries only to be enormously disappointed. (Despite a successful international career, he did not receive project funds from ARRS. He got a job as a teaching fellow with a large amount of pedagogical duties. His wife, who also had a university education, did not manage to get a job at all in Slovenia.) After two years trying, he left Slovenia again, this time with no intention of returning.

In his explanation of the scientific field, Pierre Bourdieu<sup>169</sup> emphasizes that it reflects power structures in other fields, in that its activities in terms of selection and indoctrination of actors in the field contributes to the maintenance of the status quo. The following statement of Stanislav Pejovnik,<sup>170</sup> Rector of the University of Ljubljana, confirms that notion. He claims that the reason for the lack of open tenders for work places in the university system is because of the system of habilitation (licensing certification). A recommendation that this condition be changed was submitted at the rector's conference, proposing that work positions be open to everyone and selected candidates (also non-Slovenians) could get required habilitation post facto.

In terms of career paths or systems of promotion within academia, Bourdieu, in the cited work *Homo academicus*, discusses the rigid and conservative structures that allow only slow and painstaking advancement within established laboratories, groups, and departments, stating that such a system creates "a world without surprise," excluding any individual who displays different values, interests, and

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<sup>169</sup> Pierre Bourdieu, *Homo academicus*, Stanford University Press, Stanford, California, 1988.

<sup>170</sup> Stanislav Pejovnik, "Univerza ima težave s kakovostjo, a za to ni kriva bolonjska reforma," *Delo*, December 3, 2011, 4-6.

criteria than those prevailing in the existing structure. On the other hand, the author mentioned a regulatory system as creating a feeling of legitimate ambition that makes the individual feel empowered and needed, and allows the individual to demand a suitable position and fight for it.

The common conclusion, the point made by all my informants, was that conditions for research work in Slovenian significantly differ from the conditions for research work in other parts of the world (the comparative framework including, of course, only those countries where these researchers were active). It became clear from the narratives, that the informants do not see inadequate financial resources in the research sector as a primary obstacle, but rather the means of distributing those resources, poorly defined development priorities on the level of the government, the lack of independent actors in the field, and of a working meritocracy.

These specific researchers have the feeling that the system of distributing funds run by ARRS is not appropriate, feeling that there are non-objective methods of evaluation, which result discrimination against young researchers.<sup>171</sup>

The first shock was when I sent in a project and the project didn't get approved. It didn't even make it to the second round. That was, I mean, I was in a deep depression for two months. All my co-workers knew. I could only talk about that: how was it possible that I didn't even make it into the second round, how was that possible? I mean I got something outside of Slovenia that lots of people in my generation really wanted. I got this fellowship, but here I cannot even get into the second round! I mean I couldn't make it past the first post. It's hard to describe, but that was when I decided that I would have to find something outside of Slovenia, because it wouldn't work for me here. There would always be those kinds of shockers. I had the feeling I wasn't so bad because if I looked around, I saw that I stood out in this environment, wherever I looked, I stood out. Okay, a person shouldn't be too

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<sup>171</sup> Gregor Anderluh and 18 co-signatories, "Sta FC Barcelona in NK Maribor dejansko enakovredna? Ali v Sloveniji dejansko podpiramo odličnost v znanosti?" *Delo*, March 22, 2012, 17.

full of oneself, but if I try and look at it from the outside, hey, I wouldn't have expected it. (*the basketball player*)

Vito Turk<sup>172</sup> states that the number of submitted projects as a proportion of the population is at the very top of the European Union and, from this, he concludes that this reveals fragmentation in the Slovenian scientific sphere. In contrast, he notes that Slovenian projects, in term of financial support received, remain at the bottom of the ladder, suggesting the poor quality of applications.

In Slovenia, is it better to be average than not to be average. (*the basketball player*)

In the same contribution, Turk mentions the problem of the quality of evaluations for projects submitted to ARRS, and emphasizes that Slovenia should urgently adapt international standards and rules for evaluation as many other countries have. Namely, countries have reformed their evaluations systems on the basis of the ERC model.<sup>173</sup> A number of polemics have emerged recently about evaluations and evaluators of government-funded projects<sup>174</sup> that have opened questions about the quality of evaluators and their anonymity.

All of my informants think that it is very important that projects are evaluated by experts in the field (including foreign experts). That the projects are evaluated anonymously seems to them to be entirely self-evident. They do not think that the

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<sup>172</sup> Vito Turk, "Pomembno je, da smo čim boljši, ne pa da iščemo utemeljitve, zakaj smo slabši," *Delo*, September 8, 2011, 15.

<sup>173</sup> *ERC Task Force Final Report*, July 7, 2011,

[http://erc.europa.eu/sites/default/files/content/erc\\_taskforce\\_report.pdf](http://erc.europa.eu/sites/default/files/content/erc_taskforce_report.pdf) accessed on December 7, 2011

<sup>174</sup> For example, in February and March 2011, there were several articles on the subject in the Slovenian media (Jasna Kontler Salomon, "Anonimnost recenzentov ni sporna," *Delo*, February 18, 2011, Jasna Kontler Salomon, "Tudi v znanosti ni vse jasno" and "Ogrožena anonimnost recenzentov" on February 24, 2011, Oto Luthar "Zgodba neke interpretacije" March 10, 2011, and Vito Turk "Še o anonimnosti recenzentov"). This was part of a debate regarding the recommendation by DDr. Igor Gerdina that the names of reviewers should be public. The polemic involved the ombudsman for free access to information of a public nature and the court. The opinions of Luthar, Turk, in Demšar were uniform in supporting what is the common practice in other countries, namely that reviewers are guaranteed anonymity. This practice is current in Slovenia and if Slovenia wants to remain part of the wider research space, it must retain internationally accepted standards and tested norms.

current system of evaluation is suitable and feel that more weight should be given to the quality of the submitted project rather than to the past work of the applicants - that is the applicant's biography. This would already increase the chances for young researchers to receive funding for high-quality projects and to work under better scientific conditions.

That means that when I submit a project, they are A points and B points. A points evaluate the applicant, which is not so good in my case, and B points evaluate the project you've written, and in this case, thank god, they liked it very much. So I got enough points to skate through. (*the basketball player*)

In terms of the challenges of improving project evaluation, all of my informants mentioned the smallness of Slovenia, and how it is difficult to find independent evaluators in specific fields. The problem is that in a country as small as Slovenia, only one or maybe two laboratories are engaged in a specific field. Therefore experts / evaluators are often in direct competition with their colleagues. In recent years, a number of changes have begun to be introduced in the evaluation process, including an increasing number of foreign evaluators. Likewise, Slovenian scientists have begun to evaluate projects in foreign countries.

Frane Adam<sup>175</sup> also mentions difficulties in the current system of evaluating project applications on ARRS tenders, and discusses the fact that there is no list of suitable evaluators or a defined approach to evaluation. He supports this with data that reveals a remarkable number of discrepancies and significant differences in the evaluations provided by foreign and domestic evaluators. He claims that detailed analysis has revealed such differences particularly in physics and the natural sciences. He points out the unsuitable relationship between quantitative and qualitative indicators, and also the changing relationship over the course of several tenders. Adam also says that Slovenia urgently needs to include foreign researchers in Slovenian projects, and that Slovenia's current labor and retirement laws regarding

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<sup>175</sup> Frane Adam, "Optimiranje. Ljubljana," *Delo*, April 15, 2010, 24.

the employment of citizens of European Union countries are not in harmony with the rest of the European Union and are extremely bureaucratized.

Adam<sup>176</sup> also comments on the functioning of ARRS and the problem of the constantly changing rule and bylaws, conditions for tenders, and methodology for the evaluation of submitted projects. For example, the “Rulebook of the standards and criteria for scientific and professional success” was changed twice in 2010 alone, and had already been modified substantially in 2009. Adam says the methodologies for individual tenders are not compatible. Some use only quantitative criteria, others take into the account the recommendations of other evaluators and panels, and also use qualitative criteria as the relevant condition to enter into consideration (a barrier to entry that is not so high in other tenders). Also the evaluation procedures are not always uniform, sometimes two phases with one panel and the possibility of appeal, sometimes in one pre-selection phase followed by a direct invitation to selected researchers to participate in a second phase, sometimes with two panels but no possibility of appeal. In the same article, Adam writes: “ARRS, looked at theoretically, is not complex; rather it is a complicated system with a strong bureaucratic hierarchy and a top-down linear organization.”

Franci Demšar and Peter Dovč<sup>177</sup> present an article in which they compare the status of Slovenian science and academia in the years 2005 and 2010, and see indicators of success and growth in practically all areas: a growth trend of more than 20%, higher than the EU average, in articles and quotations in the period from 2004 to 2008; the growth of international integration illustrated by the fact that from 2005 to 2010 almost every second Slovenian published academic article was co-authored with at least one academic not from Slovenia; the positive growth in the number of patents filed; the growth in the amount of government financing for research work, which increased as a percentage of GDP. As far as the relationship between “competitive”

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<sup>176</sup> Frane Adam, “Danajski darovi raziskovalcem?” *Delo*, October 28, 2010, 25.

<sup>177</sup> Franci Demšar and Peter Dovč, “Postati moramo povsem primerljivi z vrhom raziskovalno najbolj razvitih držav v Evropi,” *Delo*, July 15, 2010, 19. Dr. Franci Demšar is the current director of ARRS. Dr. Peter Dovč was the President of the ARRS Scientific Council between 2005-2010.

(projects) and “stable” (programs) is concerned, namely 60:40, Slovenia compares unfavorably with the most successful EU countries. The authors also describe the problem of fragmented research efforts in Slovenia that ARRS is trying to reduce with a combined approach of normative and methodological foundations, along with the development of evaluation and procedures that are comparable with Europe. The authors suggest that since 2005, ARRS has introduced new approach that would be similar to the methods used by comparable agencies in the most developed European countries, and conclude that the introduction of a two-phased method of application and evaluation, with foreign evaluators and a sitting panel would bring the Slovenian system with good European practice. Such a system would reduce the influence of bibliometric data that should only be entry-level criteria, and the broader entire evaluation would be performed by the evaluators and the panel. As Jasna Kontler Salamon<sup>178</sup> reports, the European Science Foundation, of which ARRS is a member, evaluated ARRS and concluded in 2011 that the agency was modern, efficient, and comparable with reputable European research agencies with longer traditions.

Here we might introduce the statement of Veljko Rus who speaks about agencies as para-governmental organizations and not as representatives of civil society. Also given the membership of the ARRS board, it is clear that the government has a strong influence (three members are recommended by the university, two members by the government ministry, one by research institutes, and one from the private sector). This is similar to other public agencies as discussed in chapter 3.2.

The observations of my informants would support the opinion that the system of evaluation projects and allocating funds is not transparent, and they experience this as a form of injustice. Maja Breznik<sup>179</sup> also mentions one of the anomalies of the system of distributing research funds in her description of the case of a 2005 ARRS tender for research projects: namely, a list of priorities that included “leaders of

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<sup>178</sup> Jasna Kontler Salamon, “Gospodarstvo omogoča kakovostnejšo znanost,” *Delo*, January 5, 2012, 15.

<sup>179</sup> Maja Breznik, “O čem pravzaprav govorimo, ko govorimo o avtonomiji?” *Delo*, February 19, 2011.



development of successful Slovenian companies,” which are, as the author points out, “lay people in the field of science.” The response of the scientific community was decisive, and the agency dropped the idea, but the topic remains relevant. In the article, Breznik discusses the autonomy of universities and concludes that the academic structure is ordered hierarchically, and the top scientific echelon collaborates with political structures in order to retain its privileges. Rastko Močnik<sup>180</sup> discusses this in his introduction to the translation of Michel Freitag’s “Le naufrage de l’université,” stating: “The university’s top echelon only conditionally collaborates with the current political class of any period, but unconditionally collaborates with whatever political class that might be: the political class with its control over the university unconditionally strengthens the status quo and thus unconditionally supports the university’s top echelon.” Maja Breznik links this notion to a discussion of the autonomy of universities and says that the university is not a unified institution since it is divided into at least two parts: the academic top echelon and the university precariat. In 2009, precariat employees at the university represented 60% of all instructors—with the status of “permanent trial period” and none had the possibility of permanent employment in the future. And thus a barrier has been established that protects the elite from the incursion of possibly subversive scientific theories that might trigger changes in the system and threaten their position. The author also points out certain undesired but predictable consequences of the change of status of university that would take them out of public service sector. Such a change would remove the only existing collective regulation of the labor force, which even applies to the most the “privileged” group of employees. The highest level (rectors, deans, directors) would gain power in that they would sign a contract for each individual employee. At the moment, there is no good solution on the table for honest and stimulating reform in Slovenian higher education.

A theme that was a constant in my conversations with informants was the relationship between research and pedagogical work. All the informants said that

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<sup>180</sup> Michel Freitag, *Brodolom univerze in drugi eseji iz politične epistemologije*, introduction by Rastko Močnik, Založba Sofija, Ljubljana, 2010.

they like to work with students, that the extent of teaching duties in foreign countries is appropriate, being somewhat less burdensome than in Slovenia.

Yes, as far as teaching is concerned, when I came to Maribor, the pedagogical duties were significant. I had over 300 hours of physiological exercises with medical students, which means that they basically took three months of research work, during which I only taught. For a researcher at the beginning of his career, this is absolutely too much. In Slovenia, much too much time is dedicated to teaching in work positions that are supposed to be research positions, whereas outside of Slovenia it is a maximum of 20%. Both are important. There cannot be one without the other, but it is research work that brings new knowledge, contributes to the richness of the pedagogical effort, and these two elements have to be in balance, I think.  
*(the photographer)*

I like to teach. I also taught at Cambridge in the autumn, which means I had at Cambridge some 16 hours altogether. That's ideal for me, to teach 16 hours each semester, not like it is here in Slovenia, 60 hours or something like that. *(the artist)*

In a recent interview,<sup>181</sup> Stephen Hawking was asked if his disease (ALS) had in some way liberated him. The question was asked in the context of whether physical infirmities could stimulate the mind, sending it to places where the mind of an able-bodied person could not go. But Hawking's answer addressed a different aspect: "Yes, ALS liberated me... from teaching." Maybe this example seems somewhat extreme, but it touches on a theme that my informants often mentioned in connection to their life stories, and to the relationship between research and teaching work. From their narratives, it was clear that most of them see themselves first of all as researchers, though pedagogical work is important to them and they do it enthusiastically. They see the problem in the relationship between one and the other,

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<sup>181</sup> Meeting between Jane Fonda and Stephen Hawking on Broadway, February 2011 at the stage performance of "33 Variations," <http://blog.kvarkadabra.net/2011/02/jane-fonda-obisce-s-hawking.html> accessed November 10, 2011.

and the teaching burden in positions that they could get in Slovenia seems too heavy for them. They also see a problem in the fact that in Slovenia it is exceedingly difficult to include a new subject in the curriculum, which is not the case in many foreign countries. In Slovenia, teaching fellows can lead seminars in subjects but the path to a professorship is closed until a tenured professor leaves.

But it seems to me that in Slovenia it's ... I don't know, one or two places are for professors who lecture, I don't know, on the physiology of animals at the bio-technology college and when those positions are filled, that's it for the next 30 years, let's say. And, yes, there are simply too few places and it's difficult to get them. I don't know how many there are now. I don't know. It seems to me that it happens that someone gets into some group, and from there he does his doctoral and post-doc studies, and he's a teaching fellow for some time, and then after awhile the time comes when a professor steps down, and that assistant simply takes his place. (*the musician*)

There are relatively few places because there is no expansion, because everything is connected to whether this or that ministry gives money for this or that teaching position, which de facto means that you have to wait for someone to die to get a position. But that just seems a little bit morbid, don't you think, that I'll wait there healthy, for someone to die so I can take his place, or for the ones who are going to be promoted to a higher position and leave the lower ones open, and that's where I'll fit in. Well, that's not something that I really want to do. (*the stargazer*)

In contrast to the above quotes are narratives that reveal that return is possible only if certain key conditions are met:

I looked for some other position in Japan, but I wasn't prepared to take anything just to stay in Japan. That was also because the whole time I was in Japan, I had strong connections to my mentor on my dissertation and during that time he was setting up a new laboratory, new researchers, and he wanted to invite me, and he said that whenever I decided to return, a job was waiting for me in Slovenia, and not just any job, as a teaching fellow or an

assistant, but a job that was suitable considering what I'd already done. And then, given how well I knew my mentor and that he was really serious, and also because I knew I was capable of doing such a job, I decided for that option. It was only one of the options that I had that would have allowed me to do more. Because there's always the risk not only for researchers, but for any person, but maybe for researchers even more, that you just sort of fall asleep at a certain level and just treat his position as an ordinary job. I think that a researcher must always look for new challenges, must always progress, always advance to a higher level. (*the stargazer*)

Researchers also think about the duration of employment. In Slovenia, employment tends to be permanent (as opposed to contractual), but financing is dependent on getting funding for projects. Lecturers at the university have to fulfill certain conditions to attain certain pedagogical job titles - a sort of tenure that is not connected to the position or work place. In foreign countries, the system is different and the pedagogical title is usually a function of the position and if the academic changes jobs, then he doesn't maintain his or her academic title. Permanent employment contracts were not particularly attractive to my informants, not even in the sense of possibly positive factors in the context of return to Slovenia. All of my informants accepted the method of working in science and the status that comes along with it (in terms of employment and in society). Permanent employment did not seem important to them. All were relatively young and open to continued changes in their career, even ones that might require additional relocations.

I had a permanent contract in Maribor but I gave it up, because I had this desire, this motivation to go to a foreign country, and also the motivation for personal things, that I arrange my personal life. It was such a big desire that I had no problem giving up my job. So now our contracts are linked to specific projects that are relatively short-term, two or three years, and then when they're done you have to go out again looking for new possibilities, and also developing and following changes in areas where you could be successful. In Slovenia, there is way too much emphasis on the pedagogical work that is done by researchers, which means that researchers are exclusively or

almost entirely paid for pedagogical work. Research work, as far as I know, is a maximum of 20%. Both are important, you can't have one without the other, but it is research work that brings new knowledge. (*the photographer*)

All interviewees emphasized high-quality research work and results as the sole measure by which an employer and research community evaluates performance, and this motivates researchers to a greater engagement in their work. In their opinion, performance is the sole guarantee that they will be successful in the next period, the next project, that they will secure the financing for work and for their existence. It seems completely self-evident to them that a single unsuccessful project could ruin their international career. This is why, despite the relatively modest supervision over their work and how they use available resources, they always behave in a professionally and economically responsible manner, because unprofessional behavior could harm their long-term prospects. They did not have the feeling that such ethics prevail in Slovenia where completely average research groups that never achieve internationally important results continue to prosper.

Perhaps the key to the uniform perspective of the informants is that the people who tend to make the decision to emigrate are the most courageous and most independent individuals who have no trouble accepting personal responsibility. This, of course, does not mean that the ones who remain in Slovenia do not have these qualities as well, but we can conclude that all my informants do have them and that these qualities, in addition to their purely professional expertise, are decisive for their success in foreign countries. In Slovenia, they miss healthy competition and collaboration, not rivalry and antagonism.

Vito Turk<sup>182</sup> believes that a policy of mediocrity prevails in Slovenia in order that all researchers will procure at least some funds. He says: "Not only good researchers, but also less good, which means that the really good get too little to break through, and the bad researchers won't break through in any case." He continues with the

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<sup>182</sup> Vito Turk, "Posamezniki v vrhu, večina pod povprečjem," *Delo*, August 8, 2011, 3.

thought that, because science in Slovenia is not attractive, young Slovenian academics tend to relocate to foreign countries. The problem is that in contrast to other countries from which brain drain takes place, Slovenia does not know how to attract promising potential from elsewhere.

And it seems to me that there is a lot of that here, and if I express it in one sentence: it is not a meritocracy. In fact, there is no proper balance, at least not in science. We have lots of good physicists, but we also have a lot of terrible physicists, and I can't at a glance tell the difference between them. Too little happens. There's one guy I know who is really very good, a young physicist that got sick of the fact that he was doing good work, and right next to him was a totally average guy, a below average guy, who was just as successful. Then of course what happened, the under average guy is persistent and stays, and the good one leaves. He either leaves the country or goes to a private company. So that that the whole system, implicitly, is one of negative selection. We're not so stupid that, let's say, if you're lousy, we're going to promote you, no we don't do that, but that's what in fact happens, because the system is more porous for the good ones. They can leave whenever they want, go to a private company, they can leave. (*the self-made man*)

Vito Turk also sees the fact that any undergraduate student (with an average grade of 8 out of a maximum of 10) can become a researcher as a hindrance to excellence. Because of this, many young researchers decide to get their doctorate as a way of solving their employment status and do not continue their studies because they are particularly interested in the subject. He notes that in many foreign countries PhD programs accept only 5% of applicants.

The level of salary did not appear to be an important factor for my informants, although there is a significant difference in what they can earn in foreign countries and in Slovenia. Employees at public universities and institutes in Slovenia are considered public employees and are compensated in accordance with applicable law. This causes problems in compensating extraordinary achievements and

preventing rapid promotion, and it also is a barrier for hiring foreigners as instructors of institutes of higher education or as researchers. In Slovenia, there is often the situation where researchers / instructors are employed part-time at a number of organizations. This is not an ordinary practice, my informants reported, in most foreign countries where researchers have one employer who, however, does not prevent collaboration with other projects and other groups. In recent times, Slovenia has introduced a practice known as “competitive prohibition” whereby employees at one university are not allowed, without the explicit permission of the home institution, to collaborate (either in terms of research or teaching) with other institutions. The introduction of this practice is surprising, also in terms of the longer history of science and academia, where the principle of restricting scientists and lecturers has never proved constructive.<sup>183</sup> It presents an additional hindrance to researchers, leading to the additional narrowing of research activities into small groups and reducing the possibility of collaboration.

It seems to me that the academic culture in Slovenia is conflicted and is hierarchical to an unprofessional degree. I don't know why, but people in Slovenia are always in conflict with each other. Every time I come here and we talk about something, or I try and reach an agreement with someone, it always, necessarily comes to the point where I'm told that this one is in conflict with the other one, that they're angry or that someone resents us, or doesn't like us. In 14 years in the Netherlands, I have never heard such things. In America, I don't hear it. How can people always be in conflict? They're like teenagers, where one resents the other one, but it's not an appropriate level for people in academia, and you get the feeling that academic life in Slovenia is really childish. If they were professional and responsible, they wouldn't behave like that. (*the bicyclist*)

Slovenian researchers who work in foreign countries often comment that they cannot imagine double counting the quantity of work they do, or the number of hours they work, and applying them for example to two projects, on which they are

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<sup>183</sup> Ibid., Bianchi.

simultaneously working. Similarly they could not imagine performing tasks that relate to one project during the time that they are working for a different employer, for example performing consulting tasks for a customer in the business sector on the time of their university employer.

First, it's unprofessional, that people use research money for private purposes. That would never happen in the Netherlands. That you just keep punching the clock, accumulating more hours, so you're employed 190% so you can get out as much money as possible, and yet it would be impossible to perform well working so many hours. That a person would actually be working for someone else during official work hours, it wouldn't even occur to them, because you can't do it, you just can't. Because you know you will be shortchanging your research work, you will lose your job, and that's the only deal you have. And second because the work really does interest you. (*the bicyclist*)

My informants have the feeling that in Slovenia it is possible, despite all the bureaucratic reporting requirements, to engage in abuse or unethical behavior in the use of financial resources. They find this practice unacceptable. Rather they advocate transparency and responsibility at work, especially as regards the use of funds.

One of the areas that my informants see as an obstacle in terms of returning to work in Slovenia is the system of frequent and extensive reporting and bureaucracy. Because of excessive bureaucratic obligations, resources for research are not being optimally used.

In Slovenia, it seems to me that there is too much time wasted in the system writing down every little thing, that the bureaucratic work should be minimized, that in the final analysis, scientists have achieved a level of education that costs an enormous amount of money and they shouldn't spend half their time working as secretaries. Or writers. Our system is not made in such a way that the highest quality scientists have the conditions to really concentrate on their work. That was always a problem for me and one of the reasons that I left Slovenia. (*the artist*)



Informants described a system whereby they acquire funding, and the totality of that funding is made available to them under their own responsibility. Employees and providers of funds are interested only in the results that emerge as a result of their investment. If there are no results, then there will be no future funding.

It seems to me that in foreign countries there is the possibility for a young researcher to get such a position, there are openings. If you are successful then you can get more financing in the future, and if you're not successful you don't. These positions come around every five years or so, and if you don't make something of it, if nothing happens, then you won't get that kind of position again. But if you do succeed, then you have all sorts of opportunities. In Slovenia, that sort of system does not exist. That you would set up a new laboratory, or create a new position and get financing for it, or create another position for a young researcher, or get a new space, or new equipment, to get a quantity of money that would finance two doctoral students, two post-docs. That simply doesn't exist here. I don't even know where there are positions available in Slovenia. You have to either already be in the system, in a group, or be affiliated with the university as a professor or a teaching fellow. (*the musician*)

Researchers working in foreign countries are keenly aware that they must make the best possible use of each project they get, because their future depends on their success. They have the impression that in foreign countries everyone can have a chance to prove themselves, but whether or not they can continue, is dependant on achieved results. An unsuccessful project can mean the end of a scientific career.

If I look for the common thread in the interviews, the greatest obstacle in the way of researchers returning to Slovenia is that there are almost no independent and suitably demanding positions for young researchers in Slovenia. There are almost no possibilities for running laboratories or setting up new research groups with young scientists in new fields of research. It prevails the feeling the most a young PhD holder or post-doc can hope for is inclusion in an existing group or an existing laboratory that is usually run by a mentor. The financing for young researchers is not

appropriately distributed and the ARRS system of allocating funds for scientific projects discriminates against the young. In addition, the way lecturers of higher education are compensated in the existing system of public employees leads to absurd situations where teaching fellows with PhDs are placed in an unreasonably low salary bracket.

If we single out the issues of evaluation of projects, financing of projects, and the lack of opportunities for young researchers - finally, the impossibility of their projects being selected for financing - we see that there is a vicious cycle at work: if one doesn't have projects, one doesn't acquire the references to apply for funding. In many ways therefore, the system is constructed to protect the positions and funding sources of older researchers and to preserve the status quo.

Young researchers see possibilities in wider European Union tenders as well as in certain international academic organizations that have programs aimed at financing younger researchers.

For example, it seems to me that European research money is great. It makes it possible for young people to do something, now in a big research group, to collect some points and some European money, so if they can't get things done at ARRS, there's at least that. (*the fast-talker*)

There are frequent public debates in Slovenia about how the economy lacks the development impulse, that there is too little innovation in the private sector, and for that reason Slovenia is not competitive. Marko Kos<sup>184</sup> thinks that in order to catch up with countries that are more successful economically and technologically (for example, Austria, Denmark, Finland, Sweden), Slovenia should put some number of academic researchers to work in the private sector. This policy was already articulated in the National Development Program (2004-2008), namely that some 30 to 40% of researchers in universities and institutes should be moved to the private sector. This would be closer to the situation the highly developed EU countries

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<sup>184</sup> Marko Kos, "Razvojni preboj se začne v podjetjih," *Delo*, June 19, 2010, 23.

where some 65% of researchers are employed in the private sector. In 2010, the figure in Slovenia was 41%. But, in fact, the policy has not been continued, indeed quite the contrary. From 2004 to 2008, the number of researchers in academic positions almost doubled, which is not the case in the private sector.

Aleš Bunta<sup>185</sup> discusses the rules of evaluating the quality of submitted projects and questions the appropriateness of anonymous foreign evaluators. He thinks that this practice might be particularly problematic in the humanities. He also says that the criteria for evaluation are extremely loose, that foreign evaluators often are not familiar with the entire opus of an applicant, and that it is not even necessary to support a selection with any substantial reasoning or explanation. Bunta also puts forth the criteria of having had a period of foreign residence as a condition for receiving the post of professor and points out that this would increase the dependence of young researchers on their mentors and likewise increase the power of local senior researchers - as inclusion in international projects is usually facilitated by the mentor's contacts outside of the country. Bunta addresses the fundamental problems in Slovenian scientific policy and asks whether the country can really afford to "send its future intellectual elite to foreign countries, implying that if you make it out there you might be of some interest to us, but until then, so long!" He continues with the question of why, if young researchers are successful in foreign countries, would they come back to Slovenia, coming to the conclusion that it is certainly not for patriotism. The only ones who return are those who have essentially, with the help of their mentor, enjoyed a "paid vacation" in some foreign country and come back to a job in Slovenia. Bunta also points out differences in the fields of technology and natural sciences, and the social sciences or humanities. He says, in the first area, it is clear that researchers may leave Slovenia for better equipment, but that in the second area, modern communication tools allows academic to follow the literature in the field without leaving. I believe that this perspective may be acceptable within the concept of transnationality - that emigrant researchers can maintain contact with the

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<sup>185</sup> Aleš Bunta, "Deseti bratje slovenske znanosti," *Pogledi*, April 21, 2010, 29.

homeland, and researchers who remain at home can be brought into a more international atmosphere. On the other hand, this view may be disputable because it does not deviate far from the justifications of many Slovenian researchers who do not feel the need, throughout their careers, for even a short excursion to foreign countries. My informants also do not support this opinion. One, for example, offered the following comment:

It's not like we can just sit in our offices, but rather the true flow of ideas can only take place with the active maintenance of contacts. You can't do that just through the mail. It's impossible. (*the basketball player*)

Tamara Lah Turnšek<sup>186</sup>, director of the National Institute of Biology, discusses the field of biology and concludes that Slovenia, with its existing research infrastructure, is no longer capable of competing for participation in international projects (for example, projects with the European Space Agency), or of paying the high membership fees to be part of the most important international associations (such as the European Molecular Biology Organization, EMBO<sup>187</sup>). She points out that Slovenia's investment in science is at about the EU average, and that there is a growing gap between the investment of the older member countries (the EU 15) and new members. Slovenia invests five times less into science than EU 15 countries and even less than some new members. This level of investment is deceptive and inadequate from the standpoint of an aggressive vision of development that would eventually place Slovenia among the most developed countries. Lah Turnšek discusses the field of biology as a fundamental area of natural sciences and about the modest success of competition in financing projects. She also points out the lack of success of young researchers in competing for tenders and what this means for their employment and continued ability to get projects. She concludes that high-quality undergraduate studies in the field of biology are needed in order to compete for financing in the international field of biology. The current level of financing and the

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<sup>186</sup> Tamara Lah Turnšek, "Bodo pač odšli v tujino," *Delo*, April 15, 2010, 24.

<sup>187</sup> EMBO – European Molecular Biology Association, [www.embo.org](http://www.embo.org), accessed December 19, 2011.

general attitude in Slovenia is “creating conditions for accelerated and irreversible brain drain to foreign countries.”

#### 4.3.2. Development vision of Slovenia

All of the informants touched on the theme of vision and what should be the priorities of the Slovenia’s development vision. They expressed the opinion that Slovenia has no clearly defined priorities on the national level and that this can clearly be seen in science. According to my informants, the available resources are adequate but are divided among too many researchers, almost without regard to whether individual applicants have achieved internationally reputable results in their respective fields. The interview applicants backed up their opinions with concrete example. The quote below addresses the lack of a clearly defined vision on the national level, in terms of what kind of country Slovenia wants to be, and what areas of the economy it wants to develop.

When we discuss what is the development direction of the country, that will say at that moment that this is important or that that is important, and everyone will say that what they are doing is the most important. Of course, because if they didn’t say that, they’d lose all their funding. Now precisely because of that, the European Commission is trying to define what direction the country should go in, and according to that definition to target some areas as opposed to other areas. Well, Slovenia is specifically in 16 ERA-net projects, which means that they have no direction at all. And that no area is really being supported. You give a little more to this area, a little less to another, but it is far from development policies being created through these ERA-net projects, because the money is being divided up, because that’s our obligation, but we haven’t really used the opportunity. (*the stargazer*)

Well, in my opinion, no, really not. No, I don’t think so. I think maybe yes, but that’s not vision, it’s a picture from a fairytale. (*the self-made man*)

Frane Adam<sup>188</sup> compares four initiatives during the years from 2009 to 2010 in the light of development trends and the future of the Slovenian society and country. He concludes that there are some common points, namely the notion of sustainable development, and he wonders if this specifically means a concerted effort to move into “green” (high) technology. Adam also says that strategy and vision should be written differently and with a greater amount of (self)reflection.

I just think that if - no not if - when the development of Slovenia, or whatever place where I wanted to live would be such that that it raised the intellectual level of the country. Now, I don't know if that really is the development strategy and wish of Slovenia, because I do not create these policies, but it seems to me that it is not. Which doesn't exactly make me feel better. It is unpleasant for me because it will effect the entire space of my life, the kind of school my kid will go to, the kind of people I'll be talking to behind the counter, the kind of standards we have, whether we are all farmers or all workers or what. Will we all work in hotels? Or what? Will rich foreigners come here? Yeah, that is what we will be doing if we don't do anything else, because of the brain drain at the moment, the borders are wide open. I believe in the self-organization of people, that is they go where they feel good. Making them feel good, that should be the development strategy of the country. (*the stargazer*)

Slovenia has not clearly defined its development strategy and as the saying goes: if there is no destination, then all roads are the right one. If the country had a defined development strategy, then it would be easier to know how to distribute resources since that would be one of the objective criteria: does a specific research project promote the strategic development goals of the country or not.

Everyone is looking for a niche. Just as we do it as individuals, so too does the community, the country. But do you have, as a country, the profile of a producer of cheap products, for mass consumption and if possible for low

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<sup>188</sup> Frane Adam, “Od doline šentflorjanske do silicijeve doline,” *Delo*, April 30, 2010, 22-23.

prices, or are you a country that creates high-tech products with high prices, and with that you can achieve a larger and more important role. Or are you a country that makes the most entertaining but pretty poor films that contribute to some kind of pop culture for export, or are you a country that works as a country of bankers or are you not? So everyone has their role. And Slovenia also plays a role as one kind of country or another. We can be a country that is creative enterprising, ambitious, cosmopolitan, open, and successful from a certain perspective or not, and however we look at it, each through our own prism, useful or satisfied researchers and everything that goes with that. Or we can be a country that successfully supplies young people to scientific centers, that exports talent. (*the literati*)

Can a researcher really choose his or her area of research with complete freedom? Of course, if the researcher finds private financing and has the appropriate status. But if the financing comes from public sources, then the researcher's work must be part of the wider strategy of the development policies of the country.

When my informants conclude that making the career of a scientist / academic in Slovenia is from many perspectives not terribly difficult, this is the consequence of their (subjective) comparison of the quality and quantity of the work required of such careers in Slovenia and in foreign countries. Many commented that in foreign countries it is entirely normal for researchers to spend all their days at work and weekends too. They emphasize the fact that research is a constant process, not connected to time or place, that ideas can emerge wherever and whenever, and that practically all their time is dedicated to work. In this, they do not feel particularly limited or even disadvantaged in comparison to their Slovenian colleagues many of whom stick to the proscribed workday. Despite their greater engagement, they have a feeling of freedom that, I conclude from my research into this subject, is the greatest motivator in their profession. They reported their lives were dedicated to work, that that is their choice, and that they are prepared to make compromises in all other areas of their lives.

Opinions vary in debates about what aspects of research processes could be improved. Here I should mention Matjaž Gams<sup>189</sup> who, on the basis of methods derived from artificial intelligence, describes findings on the importance of the relationships between variables that influence research and development activities. He concludes that the key to success is the amount of resources dedicated to research and development activities, and the number of patents that result. He uses the same methods in his analysis of higher education: the number of students in a given generation, their mobility, the share of resources, and the percentage of students who study in scientific fields (such as mathematics and computer science). The analysis of Gams and his colleagues did not confirm the importance of foreign lecturers as a factor, but rather the percentage of students in the fields of engineering and natural sciences. Gams also questions the appropriateness, or rather the adequacy, of basing analyses of research, development, and higher education on simple two-dimensional diagrams - using the illustration of ARRS, which chooses to emphasize indicators that show success, while its critics emphasize indicators that show a lack of success.

In terms of the accepted national research and development programs that the professional public have accepted after broad debate, my informants point out that specifically-defined measures are lacking, for example timeframes, who will carry out various parts of the policy, etc. Without a clear plan, who, how and when and how much time needed to reach certain goals, a strategy is merely a wish list.

But otherwise, it was a sort of realization that science contributes not only to the country being recognized but also that spin-offs can come from science, and it can trigger things in industry, which is what happened in Israel, that total perception, and that really hasn't happened in Slovenia. (*the self-made man*)

In any case, I believe that there has to be some sort of long-term vision, that without that, it is very difficult. And I think that we don't have that vision today. Not the right kind, not focused enough, and because of that we don't

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<sup>189</sup> Matjaž Gams, "Preveč razvojnikov – premalo dodane vrednosti," *Delo*, February 3, 2011, 24.



get the results that we would if conditions were different. Of course, it's clear, that there is no situation where money is infinite. It isn't here, it isn't in Germany, not in Japan, nowhere. (*the stargazer*)

Those plans are nice to read but I cannot find a single commitment that would express something like: look, we are a country of this particular size, we have so much money - I mean, the figure, not big, not small - available for so much time, and now it is necessary to commit to one area or one area or two, and that has to be consistently done if we want an effect. You can read everything about that here, how we're going to bring in foreigners, were going to develop strategic areas, but it's not written which ones. So it reads very nicely, but at the same time there is no commitment that could be applied consistently. I mean, those things that could be done in under ten years. IST is a new institute that already has its first budget approved for five years and everyone says that it's too short. The next thing you know we'll be debating with Austrians for ten years. I think anything under that limit doesn't make sense. It just comes to argument and loss of money if you keep changing direction every five years. That's nothing. (*the self-made man*)

Colleges are private institutions in which the government does not intervene. And colleges have, I mean, like Princeton, ten to twenty year programs, which by the way are not 50 page documents, but a single page with ten bullet points. Because you don't need more than that for a strategy. And that's what they have. In Slovenia, I have never even seen such a document. When they were about to elect the new rector of one the Slovenian Universities, a couple of years back, at least I think it was the rector, I looked at the new program. I was only looking for a signal. I was looking for something that instead of having 85 points, where reforms of scientific programs were included but were all mixed up, without any hierarchy, from details about improvements in the library, to entire reforms about enrollment. A strategic document should have eight simple points, that you can look at in ten years time and take a pencil: check, check, check, this we didn't do, check, this we did do. I just don't see those kind of habits in Slovenia. (*the self-made man*)

#### 4.3.3. International collaboration

Since the entry of Slovenia into the European Union and joining the monetary union, formal external obstacles to international collaboration have decreased. There are many programs and projects on the EU level that encourage international collaboration and enable the free flow of people, ideas, and capital. As early as high school, students have the possibility of several-week trips to foreign countries. Exchanges are more frequent and long lasting during the university years. Slovenian students are increasingly making use of these opportunities and acquiring foreign experience. At least some of the colleges in the University of Ljubljana have been successful in attracting foreign students through the Erasmus program. The majority of colleges that are part of the University of Ljubljana are not sufficiently active in this effort. The reasons for this are various, ranging from a lack of interest, the closed culture of certain colleges, poor organization, and more banal reasons such as an insufficient number of instructors who can lecture in the English language. The law, as noted above, makes it extremely difficult to employ foreign lecturers at public universities (which are basically institutions with public employees), although a certain percentage of foreign lecturers is one of the criteria for evaluating the quality of universities and obtaining international accreditation.

The European Union, in the program ERA-net<sup>190</sup> encourages the collaboration of research groups. In order to be successful in EU tenders, one of the criteria is that members of group applications must come from at least three different countries. This requires coordination of activities on the national level and on the European level with the goal of creating a unified European research space.

Similarly, there are ERC<sup>191</sup> tenders for young researchers (ERC Starting Independent Research Grant for researchers up to ten years after having obtained their doctorate). In 2011, Slovenia competed successfully for the first time with a project submitted

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<sup>190</sup> ERA-net, European Research Area network, [http://ec.europa.eu/research/fp6/index\\_en.cfm?p=9\\_eranet](http://ec.europa.eu/research/fp6/index_en.cfm?p=9_eranet) accessed December 7, 2011.

<sup>191</sup> ERC, European Research Council, <http://erc.europa.eu> accessed December 7, 2011.

by Nedjeljka Žagar, PhD<sup>192</sup>, though there has not yet been, at the time of writing this thesis, a successful Slovenian project for the ERC Advanced Grant, which is aimed at more advanced researchers.

This aspect of the European community is extremely positive, as far as evaluation is concerned, because now anyone can apply for European funds, anyone can apply to collaborate in foreign industry. So now if you cannot get Slovenian money, you can always apply outside. (*the fisherman*)

In certain research organizations, the relationship between domestic and foreign researchers is better. In certain research groups and laboratories, young foreign researchers are included, as well as doctoral and post-doctoral students. As one of my informants commented, what is essential for young researchers if this flow to take place is the amount and quality of a mentor's international connections and whether a mentor is the head of a laboratory or not. Taking on post-doctoral students, as this interviewee describes it, is a two-sided process and the mentor who wants to send his students to foreign countries must also have the capacity to take foreign students into his or her own group.

That's one thing. A second thing that in my opinion is important, though not in my area, is the international connectedness in the research sphere, though it is still not as much as people would like to think. I still believe that there is not some huge number of Slovenian researchers, I won't talk about professors, who could do a favor for students, who can pick up the phone and place a call to a foreign country and say: listen, I have this really great guy, would you take him as a post-doc, would you pay for his post-doc studies. There are such people here, but not very many. But that's the kind of mentor or professor that counts. If they can't do that, they're useless. And if you have someone who is prepared to do that, it's because you collaborate in research together, because he knows you and he knows what you can do

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<sup>192</sup> Dr. Nedjeljka Žagar received financing for the project MODES (Modal Analysis of Atmospheric Balance, Predictability and Climate) as a member of the Department of Physics and Meteorology, School of Mathematics and Physics, University of Ljubljana, biography, <http://www.fmf.uni-lj.si/~zagarn/> accessed December 7, 2011.

and that you are his student, and he can guarantee that you can work in a way which will be useful and vice versa. Why are there so few foreign post-doc students in Slovenia? Because there are not those kinds of connections. Because if someone is prepared to take your post-doc student, then he must also see that you are prepared to take his. (*the stargazer*)

My interviewees place a high value on an international presence in the laboratories where they work. It represents a huge added-value in terms of the variety of approaches, ways of working and thinking, and the culture of the individual researchers. In terms of being closed in “static” research groups and slow advancement within them, the fertilization of knowledge is not assured and, in the words of one of my informants, the head of the laboratory or the professor will, in the best-case scenario, create his own “clone” who will not create anything new.

If you employ your own students, you’re employing a Mini-Me,<sup>193</sup> you’re employing a clone of yourself, because you taught him, he’s yours. You may be the best, but your student won’t be as good as you. Because there is no added value. It’s completely different if you send your student somewhere else for five years, then he’ll be more than just you. There will be the good foundation on which new layers are added. Then if he goes even higher, and really proves himself, and you get him back, then you’ve done a great job. You know who you’re working with, and he has his own contacts, he’s more than just a part of you. (*the stargazer*)

In terms of the flow of researchers from Slovenia and into it, one of the factors that hinders collaboration is the method of compensation for work performed or for lectures. Even for guest lecturers on short-term visits, organizers must find creative solutions to avoid the bureaucratic hurdles that are typical of longer-term residences in Slovenia where employers encounter countless procedures and the foreigner has to obtain permits to live and work in Slovenia. Tax regulations also pose special

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<sup>193</sup> Mini-Me is a figure from an Austin Powers film created as a clone by Dr. Evil, before Dr. Evil was sent back to the past. Mini-Me is identical to his creator in all ways except that he is one-eighth his size. Mini-Me rarely speaks, only smiles nastily with Dr. Evil, and mutely imitates his speech.

difficulties imposing taxes on the basis of residence or non-residence status, conventions between countries preventing double taxation, and the payment of income tax in only one country.

On the other hand, we are, I think, masters of bureaucracy. I won't even talk about the colloquium when I went to lecture once for an hour at the math faculty in Ljubljana. They told me they'd pay me 100 EUR, or 120, I don't remember, as a payment for the colloquium. I said okay. I think we had to exchange about 15 pages of scanned contracts but they couldn't pay because I didn't have the right tax status in Slovenia, because I'd lived eight years abroad, then I got another 15 pages of contracts. Everywhere in the world, everywhere, Japan, Germany at Max Planck, Israel or America, they would give you a reimbursement of 100 EUR and you would sign something to say you got it. At Max Planck, the Germans, who we all know are anal, just give you cash on the spot. And in Slovenia? What next? Finally, I told them, look, I'd rather not take that 100 EUR because now I don't even know what DURS (the tax authorities) will do. If DURS goes after me - I don't know, am I a resident, did I fill it in right - I don't need that. And on it goes, for every little thing. (*the self-made man*)

I wanted a professor from China to come and work for half a year on a project in Slovenia and I know he'll be going back, and I had three months of bureaucratic work just so he could come. They shouldn't be worried that he would stay here. They should be, hurrah, hurray, we got someone really smart, who works hard, whose education cost like a million euro. And we got him. We get to use him. You'd have to be brain dead to prevent that! (*the stargazer*)

For example, Frane Adam and Matej Makarovič<sup>194</sup> discuss the involvement of Slovenia in the international research community and observe that is present enough but, given the smallness of the country, it should be even more so.

The following statements address how the scientific communities in most developed countries encourage the flow of research staff:

These foreign researchers that they invite, for a certain amount of time, they have salaries that are twice as high as locals, because they're only there as an element that shakes things up, that gets things started in a different way so that you are not in one-track static system. But that's moving a little, and if it starts to move, new things start to happen. If you're in a sleepy scene, it's just a sleepy scene. That's definitely one reason why not that many people move. In principle, some people have ambition, but they don't know what to do with it, who to ask, because it isn't convenient to decide for such a drastic step, and so on and so forth. (*the stargazer*)

But our basic starting point should be: let's think on a global and ambitious level. Because as the world becomes more interrelated, and our graduates go to foreign countries, we go to foreign countries, probably all of your informants have gone somewhere. It would be more efficient for Slovenia, if instead of just sending ten students to foreign countries, better if we send ten students and bring two professors here. And work with everyone. (*the literati*)

There are more links in Slovenia's natural sciences to foreign countries than there are in social sciences. This is because of the use of extensive experiments with expensive equipment and urgent financial imperatives. Milena Bevc's research data also indicates the more extensive emigration of natural scientists than social scientists and humanities scholars, and certainly natural scientists are more numerous among my

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<sup>194</sup> Frane Adam and Matej Makarovič, "Tranzicijske spremembe v luči družboslovnih analiz," *Teorija in praksa*, Vol. 38, No. 3, 2001, 373-385.

informants (there being only one who did undergraduate studies in the social sciences, namely in law).

There is less international collaboration in the social sciences as research methods do not demand such extensive financial investment as in the natural sciences. In addition, the mother tongue as a tool of the researchers can pose limitations on international research.

And that group had strong international connections, because those experiments have to be conducted with the extremely high energy that is necessary to see the smallest elements in nature. They use very expensive and demanding equipment, and that always means international collaboration. There are only a couple of centers in the world where such research can actually be conducted. (*the stargazer*)

#### 4.3.4. Reintegration

Reintegration is among many others discussed also by Marina Lukšič-Hacin<sup>195</sup>, who in her cited work argues about the factors that lead to a fairly low numbers of returnees to Slovenia.

None of my informants reject a priori the possibility of returning to Slovenia. Two of them indeed have returned and currently live in Slovenia, with no plans for departing again, although they also do not reject the idea in principle. One of my informants returned but his inclusion in the Slovenian system was not a success so he emigrated again.

And that idea, that I should build my life again, away from those acquaintances and friendships, ties and pleasant connections... Though, yes, the good relationships that I have with the people here was also a factor in my decision that, if it were possible, I would be based in Slovenia, though still going for short trips to foreign countries. (*the literati*)

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<sup>195</sup> Marina Lukšič-Hacin, "Povratniki kot del migracijskega kroga", *Dve domovini*, No. 15, 2002, 179 – 193.

One of the things that it seems to me is interesting and probably common enough here, to the extent I talk to my colleagues and friends, is that if you go abroad, and then come home again, and then abroad and then home, your professional and your personal lives are overlapping all the time. (*the literati*)

The difficulties in reintegration that are experienced by my informants mostly arise from the professional environment. Many conclude that once you leave your position, then someone quickly takes your place, and because positions at high levels do not open and new ones are not created, there is simply no room for return. My informants speak of the closed quality of the system, that each time when you return (or try to return), you have to begin at a lower position (or even the lowest position) and try again to slowly push upward.

And above all from those who stayed connected with Slovenia, there are always more, I mean, you could talk with them, and you see this more and more, that everyone knows the system is non-transparent and complicated, but of course you learn it as you go along. And they get used to it slowly, and if none of them at some point get the feeling that an injustice was done, or they don't see it as such. But then they get used to it slowly, that that's just how things work. But for those of us who are outside of the system, it just becomes more cryptic. So this is why it's difficult to come back. (*the self-made man*)

The primary obstacle to return therefore is often the smallness and closed quality of the country, but also the method of employing people, and the way it prevents the entrance of "foreigners" ("local" foreigners and "foreign" foreigners) in higher positions in the scientific sphere.

Nobody will return if there is no possibility of returning, since often that is the case because the system is still closed. If you're not inside the shell, which means first you do your undergraduate work in a group, then your doctorate in the same group, and then your post-doc in the same group, and then you're a teaching assistant and then a professor, but instead if you come



back from Stanford or I don't know where, you're not going to have the same conditions. I don't know if anything is changing now, if the system is more open or not. (*the musician*)

The reasons to attempt return are usually connected to personal and private life. All three informants who attempted to return (two succeeded) talked in their narratives about the intimate ties with the narrower and wider family, this being one of the reasons that predominated in decisions to remain in a foreign country or to return home. The other important factor in both successful returns was an adequate offer from a local university. The career and nationality of the informant's partner also played an important role. The earlier the departure for a foreign country, the less likely the return. Among my informants who tried to return were only those who had done their doctoral studies in Slovenia and left afterwards to do their post-doctoral studies. Those of my informants who did their doctorates in foreign countries do not at this early point in their scientific careers have any thought of returning as they are well integrated in the foreign research environment and want to continue building their career. Only when they achieved all they can in the international environment, or perhaps even later in the mature and final years of their career, do they intend to return to Slovenia.

We Slovenians are exceptional in that way. We want to go home at least for holidays. A lot of Slovenians look for any excuse: there's a conference nearby and they'll zip home, or to the sea, the draw of friends, Ljubljana in the summer. It's definitely a city to which anyone who knows it wants to return. So I think that Slovenia is underrated because a lot of countries don't have that. Slovenia has attractive features that would make you come back, but to stay - I am thinking of a few people who went back - this is what happens: first, the problem with work, and then you begin to feel the smallness a bit. Ljubljana is great. It is great, but it is a little bit small once you've done everything there is to do. But I don't think that would be a showstopper, while work can be a showstopper. The real issue is getting reintegrated into work there. (*the self-made man*)

One of the most important factors, as mentioned before, for those who return is family circumstances, whether it is a partner (who is not a researcher) and wants to work in Slovenia, or the entry of children into primary school. The presence of active grandparents who would be willing to help a young family is also an important factor.

If you're okay, there is no problem. If integration is okay, which is the usual reason that makes Slovenians begin to think about return, or what I now hear, at least as far as I know, when people decide to have children. Then it's different. America is not the best country for children, the social quality of the country, and another thing is the support you can get from your family. I mean it's a question of time. In a two-career family, grandparents can come in real handy, and we don't have them in America, unless they come with you. So people start to think it over again. (*the self-made man*)

One of my informants returned and accepted a lower position than the one he had had in a foreign country, so that his university-educated wife could find work and pursue a career. After two years of unsuccessful attempts of his wife to get a job and because of the inappropriate position of my interview subject at the university, the couple once again, and this time "forever" and with great difficulties, emigrated. The wife has decided to give up her career and dedicate herself to the family. The informant took on the role of the sole provider. This was a situation that neither wanted and it means a big sacrifice for both.

Yes, well, on the other hand, about ten years ago, I was more idealistic as regards material things than I am now. Because now I have, I mean, it turns out that we have moved around so much, hopped from place to place, moved every one or two years. The last ten years totally destroyed my wife's career, she doesn't even have one. She's a chemist by education but she never had a job, because she always subordinated her life to mine. Which also means that I have to earn enough money for all four of us to survive, which I unfortunately cannot do with a Slovenian salary. (*the basketball player*)

What is clearly decisive for a researcher to return to Slovenia is that he or she obtains an appropriate position in the relevant scientific field - either in research or the private sector - and if he or she has a partner of Slovenian nationality who has good connection with family who supports the return and makes it easier.

That's the way it was. In America, we tried for so long to be motivated, but otherwise I don't know. They don't like me now at the faculty of mathematics in Ljubljana. They ask me to lecture but won't give me a position, supposedly because they think I'm too much on the applied side, that I am not strong enough as a theoretical mathematician. (*the bicyclist*)

I'm somehow in the middle. Um, enough out of the country that I feel some difficulties getting back into Slovenian society, but at the same I am at home enough that I cannot say that is the real problem. And also I think that the responsibility is divided, as if I am evaluating others and not myself. (*the literati*)

My youngest informants who completed their doctoral studies in foreign countries and have partners who are not Slovenian do not consider return. They allow that sometime in the future they might, but for now they are not even looking for ways to get back. All, without exception, are open to the idea of collaborating with Slovenian research groups, to shorter-term residencies in Slovenia, and to opportunities to do research and work with student in Slovenia. The importance of establishing collaborations with scientific diaspora is among others also described by Jean-Baptiste Meyer and Mercy Brown<sup>196</sup>.

#### 4.3.5. Transnationality

On the other hand, I have some colleagues the same age as me in Slovenia, some also younger, who went to study abroad, and I have concluded that we are all somehow amphibians. (*the photographer*)

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<sup>196</sup> Jean-Baptiste Meyer and Mercy Brown, "Scientific Diasporas: A new Approach to Brain Drain", [www.unesco.org/most/meyer.htm](http://www.unesco.org/most/meyer.htm) accessed October 27, 2012.

Among many other authors, for example Jasna Čapo Žmegač<sup>197</sup>, Mirjam Milharčič Hladnik<sup>198</sup> speaks about “how each identity transcends what we call ethnic, national identity, or belonging, and at the same time combines different combinations of its elements during various periods of the narrator’s lives: the knowledge of language, the practice of faith, singing and playing folk songs, cooking and eating traditional dishes, celebrating holidays, preserving traditions and habits. In the dynamic flow of life, these elements - preserved, lost, forgotten, acquired once again - connect memory, permeated with emotions.” The author is referring specifically to women’s studies, but I believe that these conclusions can also be applied to biographies of emigrated researchers of both sexes.

In research carried out among emigrants in several European countries, the authors Rosi Braidotti and Esther Vonk<sup>199</sup> observe that each emigrant, at least occasionally, experiences him or herself as a foreigner, a stranger in his or her own country, space, environment, and culture, and that no one fully belongs in his or her own sexual, ethnic, national, social, cultural, and political identity.

Factors that influence the decision to migrate function simultaneously: therefore, there are both technically positive and negative sides of conditions in the homeland and in the foreign country. We can no longer speak of push-pull factors because, as a result of transformations in media and transportation, both are constantly present, and distances and difference between places are growing smaller.

The number of positions are limited because of the smallness of the university and I think that there is too little critical mass. This means that highly educated people that are active in Slovenia are relatively few, maybe

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<sup>197</sup> Jasna Čapo Žmegač, “Strangers either way: The Lives of Croatian Refugees in Their New Home”, *European Anthropology in Translation*, Vol. 2, 2007.

<sup>198</sup> Ibid, Milharčič Hladnik.

<sup>199</sup> Rosi Braidotti and Esther Vonk, “Feminist Theories of Subjectivity in a European perspective,” In Luisa Passerini, Rosi Braidotti, and Judit Gazsi et al (eds.), *EU research on social sciences and humanities, gender relationships in Europe at the turn of the millenium, women as subjects in migration and marriage – Final report*, 2004, <http://cordis.europa.eu/search/index.cfm?fuseaction=lib.simplifiedocumentlucene> accessed July 10, 2011.

a handful, and I believe that resources are dissipated in Slovenia and given to research groups that may not be exactly competitive on a global level. We need science that is measurable according to international standards. We have no borders. For us the measure of the world is the planet, it is round, and only in this way can we be seen and heard. (*the photographer*)

And I just went there and it was obvious that the scientific research was fine. But on the other hand, I also just enjoyed being there, going around, getting familiar with traditional Japanese things, and it was great. It's true when you are somewhere and you get connected, it becomes difficult to leave again. You have friends there, if you're there for six years, you have a way of life that you're accustomed to. It's very hard to leave it all. (*the stargazer*)

If you consider what you have in your international laboratory, a very diverse group of people, that also means that knowledge is coming back from outside of Slovenia, or whatever country the laboratory is in, and that means a big cultural benefit for the whole country and it seems to me that the potential is very, very big. (*the photographer*)

Then you have disciplines that by their nature are global and to try to somehow limit them is complete stupidity as far as I'm concerned. And science, especially the natural sciences, are one of those areas and that becomes absolutely obvious when you come from Slovenia to America and see that first-year students are using the same books for physics. We Slovenians also have Sternad's books, which is great, and then at the end, during the third and fourth years, you have the analytic mechanics of Landau and Goldstein. So it's the same and I get some pleasure that the discipline is taught in the same way all over the world. That's why we can talk to each other. So in the first place, whatever borders you try to set up, are nonsense and impossible anyway, especially any kind of local comparisons are idiotic. That would mean that you would evaluate someone's physics by geographical region. And I don't know how it is in Slovenia. Am I supposed to count quotations, am I supposed to count publications in some Slovenian

scientific magazine? In my opinion, that is complete idiocy. (*the self-made man*)

## 5 CONCLUSION:

### “A SHORTAGE OF FLUIDITY”

The hypothesis stated at the beginning of this dissertation was mostly confirmed by the findings. In fact, temporary relocation of researchers often transforms into permanent relocation, because Slovenia does not offer comparable conditions for science and academia as those offered in the developed foreign countries. We cannot, however, speak of brain drain (or the escape of brains as the phrase is translated in Slovenian), because relocation of this type, according also to the emigrants themselves, cannot be described as flight or escape. It is merely relocation that is the consequence of conditions in the research and higher education spheres in Slovenia.

Young researchers who come from open, stimulating family environments see relocation as a normal step in a scientific career. If we want to speak of the flow of research potential, we conclude that the outflow is much stronger than the inflow. At the moment, Slovenia is losing more potentially top-level researchers than it is receiving.

My informants experience their identity more as scientists than as being a function of nationality they therefore belong to (and form at the same time) *the transnational academic field*. Therefore it is not possible to expect them to return to Slovenia simply because of a sense of belonging to a nation or a homeland. It seems that repatriation on a large scale would only be possible if Slovenia's research groups in individual fields functioned on a global level. My informants clearly emphasized the extraordinary competitiveness of scientific research on the global level, only considering as valid internationally comparable achievements. This condition might be termed *global academic capitalism*. Many countries understand this and have a clear development vision and explicitly defined priority areas - that are recognized as having the most perspective and relevance also in the global context. In this sense, Slovenia lags far behind as research funds are dissipated among many research organizations and researchers, although many of the recipients are performing

research not viewed as promising or having great perspective by the international research community.

According to my informants, academic freedom, independence, and opportunities to secure financing for research projects, and to use those resources freely, are among the most important factors that might influence the decision to return to Slovenia. Salary itself was not an essential factor, but laboratory equipment, the ability to employ the appropriate number of colleagues and students, and the possibility of securing a stable source of funding all were. In this sense, I see young academics also through the prism of the fluidity of contemporary life practices as presented by Zygmunt Bauman.<sup>200</sup>

People come and go constantly. We want more from each other and we know that time is limited and we have to take advantage of each moment. So that for me it is very important to take advantage of each moment. I see people and I know that we can work together for two hours, and during those two hours we can do more than others do in their whole lives, so let's get the most out of it. (*the artist*)

Young academics make their decisions in a very individual manner, taking into account the environment and the values that affect their sense of freedom. They accept the consequences of their decisions, take responsibility for themselves, the opportunities to develop in their field, and their general advancement. They do not feel connected to any local space, because the stage for their activities is the whole world, and they move to places where their goals and ambitions can be most effectively realized.

But this is what I wanted to say, you need a really non-linear affect with either resources, or something, or even freedom! Personal freedom means so much to academics that I think everyone would sacrifice money so that

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<sup>200</sup> Zygmunt Bauman, *Liquid Life*, Polity Press, Malden, USA, 2005.



they could do what they want. Or so that they're free from bureaucracy. (*the self-made man*)

I applied to a couple of universities and then the Stanford happened. Well, after Stanford happened, you can't say, no you can't say no. Do you play football? If you do play football and Real Madrid comes and says will you play football with us, and I mean, as much as my heart might beat for Olimpija<sup>201</sup>, but you know, you would go. (*the fast-talker*)

Not one of my informants mentioned employment security as a primary factor in the choice of work environment and country of relocation. To the contrary, almost everyone posited as important conditions for research work, the possibility for development and a successful international academic career, the clearly defined development vision of the country, and above all the feeling of freedom at work.

What is crucial for me is that I'm always in a situation where I meet and get connected with a lot of people. That's hard to do in Slovenia. (*the artist*)

The closed system of Slovenian laws and legislation support thus encourages the emigration of a part of the research population, whose essential personal values are not in harmony with the values of the current system. This same system makes it very difficult, if not impossible, for foreign researchers to flow into Slovenia, because it protects the current holders of positions and does not open up new positions, especially for young researchers.

Yes, what bothers me most of all in Slovenia is that they don't appreciate what they have, science as a whole. Each person sees only himself, because we're so not fluid. There is a shortage of fluidity. We are afraid that we will lose our national identity if foreigners start to come. We have a terrible need for foreign scientists coming to work with our people here. For foreign students to come too. They won't be Americans, they'll be Bosnians, but they'll be very motivated Bosnians. We need a sort of system that opens

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<sup>201</sup> Local Slovenian football (soccer) club.

outward so that we no are not afraid and reduce inner conflict. Because people always blame others. We Slovenians are like this, we always argue among ourselves, it seems to me it is because we are a small country. It's like if we think of Manhattan, the neighborhood where I live, the Upper East Side. That's about how big Slovenia is in terms of population and no one would imagine that it would be a country of its own and have universities that only people from the Upper East Side would attend. You can see in an instant that that wouldn't work. So it seems pretty clear to me that we simply have to increase the flow. Then other things will work themselves out. (*the artist*)

One reason I think for brain drain, is that it is not so much drain as movement. What Slovenia could learn, of course, or at least what I think, is that Slovenia should try and attract more smart people. Whether those are Slovenians are not, it doesn't matter. But try to get them, also the dynamic in Slovenia, to increase the number. Of course, it's easier to get Slovenians, but they're not the only ones, French people who have married Slovenians, maybe they would come. But smart people, capable ones, I don't know. Serbians who have trouble living in Serbia because they really can't do anything intellectual, they should come here. (*the bicyclist*)

Despite adopting European norms, public agencies in Slovenia still seem not to play an appropriate role as entities in civil society. Their ties to the state are still too close, and this situation leads to the disorganization of public life and the emigration to foreign countries of the most capable young people in the population. My findings could suggest that that is exactly what is happening in Slovenia right now.

Some migration theories emphasize the importance of families in deciding whether one or more family members will emigrate. In my research, I identified the role of the family as being an important factor only for potential return to Slovenia, especially during the period when the scientist/researcher is making a family with a Slovenian partner and have small children. Here there is no economic reason for repatriation but it is exclusively family-driven: namely, the desire to include grandparents in the everyday routine and for intimate family ties. In the case of

academics, therefore, families play a decisive role in repatriation, but not in the initial decision to emigrate. As far as researchers / scientists living in mixed marriages, the Slovenian family, especially if the researcher is a male, does not have much influence on return.

The continuation of my work in this field could be in the direction of qualitative research among academics who have not left Slovenia, and have no intention of leaving. Because, of course, in addition to legal barriers, the everyday environment creates a situation in which researchers and students who come from foreign countries (either Slovenians or foreigners) have difficulty being included.

The interest in return or at least in collaboration with Slovenian scientists working in Slovenia must be explicitly expressed and encouraged by the government. In fact, there are more opportunities for collaboration than Slovenian emigrant academics are aware of. This is why the Slovenian government must take the initiative if it is really interested in the cooperation with emigrant academics. But, the question arise, does that interest really exist?



## 6 POVZETEK

Razvoj svetovnega gospodarstva v smeri globalizacije in finančna kriza, ki je nastopila leta 2007, sta zelo spremenila ekonomske odnose, kot so bili vzpostavljeni v času moderne industrijske družbe. Hkrati se spreminjajo tudi socialni in individualni vzorci vedenja in vedno bolj je poudarjena fluidnost in kratkotrajnost dobrin in odnosov. Povečuje se posameznikova potreba po individualnosti, enkratnosti in unikatnosti, ki jih le ta poskuša doseči tudi s stalnim menjavanjem svojega življenjskega okolja in tako potovanja postajajo glavni instrument redistribucije svobode, saj si posameznik s stalnimi selitvami odpira vedno nove priložnosti za oblikovanje idealnega življenjskega sloga. Za porabniški način življenja je poleg velike kupne moči značilna tudi visoka stopnja mobilnosti. Postavljajo se vprašanja o načinu in vsebini organiziranja aktivnosti in sistemov, ki naj bi v prihodnosti omogočili učinkovito in pravično delovanje družbe kot celote.

V vedno hitreje spreminjajočem se okolju se tudi mesto in vloga posameznika spreminjata. Glede na vedno večjo povezanost sveta v logističnem in informacijskem smislu, postaja lokacija bivanja vsaj z vidika profesionalnega delovanja vedno manj bistvena in selitve so zaradi skupnega evropskega prostora vsaj formalno, v tem prostoru, dokaj enostavne, kar za visokokvalificirane strokovnjake velja tudi za svet kot celoto. V migracijske tokove so vključeni tudi raziskovalci in v disertaciji sem skušala opredeliti dejavnike, ki slovenske raziskovalce v obdobju od osamosvojitve Slovenije do danes spodbujajo k selitvam in ki jim otežujejo ali celo preprečujejo vrnitev v Slovenijo.

V disertaciji analiziram in pojasnjujem vzroke za selitve slovenskih raziskovalcev v tujino, pri tem se predvsem posvečam aktualnemu trenutku. Posebej me zanimajo vprašanja: Kako družba dojema pomen raziskovalnega dela, ali je raziskovalec v Sloveniji spoštovan in perspektiven poklic in ali je znanje v naši družbi prepoznano kot vrednota? Kateri so dejavniki, ki zlasti v zadnjih desetih letih (2000 – 2010) vplivajo na pospešene migracije raziskovalcev? Kako svojo vlogo razume in realizira

država? Kako se na trenutne globalne trende in odprtost svetovnega akademskega prostora odzivajo slovenski visoko izobraženi strokovnjaki?

Stanje v Sloveniji na zgoraj navedenih področjih postavljam v kontekst "družbe tveganja" (porazdelitev bogastva in porazdelitev tveganja, individualizacija družbene neenakosti, spremembe norm, ki so veljale v industrijski moderni družbi, prihodnost izobraževanja in zaposlovanja in znanstveno-tehnološkega razvoja), ki opisuje strukturne prelome sodobne družbe in s tem, v danih ekonomskih in družbenih okoliščinah, vedno večje soočanje posameznikov z možnostjo in obveznostjo samostojne odločitve in povečevanjem negotovosti. Značilnosti pojava oziroma razvoja družbe tveganja sem skušala identificirati tudi za aktualni slovenski prostor, zlasti na področju povezav med državo in civilno družbo, ki potekajo v znamenju manipulativne kooptacije predstavnikov civilne družbe v državne organe in v znamenju paternalističnega delegiranja državnih funkcij na le na videz avtonomne fundacije in agencije, kar generira kolonizacijo države nad civilno družbo in nedvomno občutno zavira razvoj slovenske družbe kot celote. Pri tem omenim organiziranost, pristojnosti in odgovornosti teles na področju razvojno raziskovalne dejavnosti (Javna agencija za raziskovalno dejavnost RS, Tehnološka agencija Slovenije, JAPTI, Ad futura), ki naj bi po svoji naravi odigrala vlogo civilne družbe a obstaja možnost (na primer: način imenovanja vodstva, kjer so v večini predstavniki, ki jih imenuje država), da glede na zgornje parametre to ne drži, ter gre le za podaljšano roko državnih organov in ne za avtonomna telesa, na katera naj bi bile prenešene določene kompetence s pristojnega ministrstva. Brez uveljevitve civilne družbe, ni mogoče vzpostaviti "na znanju temelječe družbe" in da je, brez prve, je druga obsojena na izolacijo v ozek krog superekspertov in s tem tudi na neučinkovitost. V tem kontekstu je Veljko Rus leta 2003 napovedal, da lahko v primeru, da se družbene razmere ne bodo razvijale v smeri krepitev civilne družbe, pričakujemo dezorganizacijo javnega življenja in bega najsposobnejšega dela mlade generacije v tujino. Prenašanje funkcij iz državnih organov na organizacije civilne družbe, ne da bi pri tem nanje prenesli tudi pooblastila in proračunska sredstva, bi namreč vodila v popolno neučinkovitost le teh, kar bi imelo za posledico poslabšanje

pogojev za delo in življenje. Glede na stanje slovenske družbe v sedanjem trenutku se izkaže napoved Veljka Rusa kot popolnoma utemeljena: krepitev vloge države in šibka civilna družba dejansko delujeta zaviralno na vsa področja udejstvovanja.

Ob družbenih dejavnikih, ki lahko vplivajo na selitve raziskovalcev v tujino sem, s preučevanjem njihovih doživetih in povedanih življenjskih zgodb, skušala analizirati in izpostaviti tudi dejavnike, ki so povezani z osebnostnimi lastnostmi posameznika, njegovo osebno zgodovino, interesi, vrednotami in motivi. S celovito analizo družbenega konteksta in osebnih pričevanj sem izluščila tiste dejavnike, ki najbolj vplivajo na selitve raziskovalcev iz Slovenije v sedanjem zgodovinskem trenutku.

Disertacija je zasnovana po poglavjih in sicer:

V 1. poglavju – Uvodu, sta podana opredelitev teme in osnovni namen raziskave.

V 2. poglavju – Predgovoru, so pojasnjeni razlogi za izbiro omenjene teme, okoliščine in način dela.

V 3. poglavju – Teoretičnem okviru, so dekonstruirani pojmi: migracije, beg možganov, integracija, reintegracija, znanje, znanost in znanstvenik, podani so zgodovinski in pravni okviri ter s tem povezano financiranje znanstveno raziskovalne sfere v Sloveniji, predstavljeni so statistični podatki o migracijah visoko usposobljenih raziskovalcev med letoma 1990 – 2010.

Glede na to, da me zanimajo življenjske zgodbe raziskovalcev in sem podatke pridobila z narativnimi intervjuji, je v tem poglavju obdelana tudi teorija spomina in pripovedi življenjskih zgodb: pripovedovati in poslušati življenjske zgodbe, intersubjektivnost in pripovedi življenjskih zgodb, taktike intervjuvanja. Pojasnjeni so kriteriji za izbor informantov.

Navedena je uporabljena metodologija: študij literature, pregled zakonodaje, pregled statističnih virov in narativni intervju.

V 4. poglavju – Pogledih raziskovalcev, so doživete in povedane življenjske zgodbe informantov na življenjski časovni premici od otroštva in družinskih razmer, preko študija in odhoda v tujino, do morebitne vrnitve v Slovenijo, umeščene v perspektivo pogojev, ki določajo slovenski znanstveno-raziskovalni prostor in celotno družbo.

Podatki iz intervjujev so anonimizirani, saj so nekateri sogovorniki to postavili kot pogoj za sodelovanje v raziskavi. Vsakemu citatu je zato pripisan psevdonim avtorja. Sogovornikom sem na podlagi njihovih stališč skušala pripisati nekatere skupne značilnosti oziroma nakazati verjetne vzorce in izpostaviti ključne razlike.

V 5. poglavju – Zaključku, so podani izsledki raziskave in opredeljena izhodišča za nadaljnje delo.

Ob izbiri, pripravi in izvedbi narativnih intervjujev v okviru kvalitativne raziskave te disertacije so se mi kot izvajalki / izpraševalki porajala mnoga vprašanja in dogajale situacije, nekatere pričakovane, druge tudi ne, povezane z osebnostmi sogovornikov, njihovimi interesi, trenutnim razpoloženjem in okoliščinami, v katerih so bili intervjuji izpeljani. V izhodišču poudarjam, da ne gre za iskanje ene resnice, temveč le za prepoznavanje morebitnih vzorcev, ki se kot rdeča nit pojavijo v pripovedih in ki razkrivajo kontekste, v katerih pripovedovalci živijo. Življenjske zgodbe pripovedovalcev razumemo kot »življenja v kontekstu«, umeščena v socialne, religiozne, zgodovinske, ekonomske in izobraževalne okoliščine, ki so podvržene vplivom družine, skupnosti in družbenih institucij in odvisna od kulturnih pokrajin, osebnih prepričanj, intimnih dejanj, samostojnih odločitev in njihovih posledic.

Kot pri vsaki komunikaciji, tudi pri izpeljavi narativnega intervjuja, prihaja do zanimivih in neponovljivih situacij in interakcij, povezanih z osebnostnimi lastnostmi, trenutnimi okoliščinami in motivi izpraševalca in pripovedovalca. Izhodišče, ki se ga je potrebno vseskozi zavedati je, da nobena trditev pripovedovalcev ni napačna, saj vse izvirajo iz njihovih osebnih izkušenj oziroma so izraz njihovega doživljanja neke določene izkušnje in njihovega spominjanja dogodkov. Avtobiografski spomin je "spomin o sebi", ki se od običajnega spomina



razlikuje v tem, da vključuje tudi informacijo, zakaj je določen dogodek zanimiv, pomemben ali celo bistven za pripovedovalca.

Pripovedovalec se je od trenutka, ko se je dogodek v preteklosti zgodil, do trenutka, ko ga je v sedanjosti opisal v svoji pripovedi, spremenil in dozorel in s tem so se spremenili tudi njegovi pogledi in vrednote in zato je povedan – opisan dogodek vedno le interpretacija dejanskega dogodka, odvisna od stanja pripovedovalca. Zavedati se je treba tudi, da se vsak pripovedovalec želi pokazati v čim lepši luči, da predstavlja interpretacijo dogodkov iz preteklosti, ki ne škodijo njegovi predstavi o samem sebi in ki ne ogrozijo njegove podobe v javnosti.

Poleg tega, da je že sama pripoved interpretacija, ki jo o svojem življenju poda pripovedovalec, pa tudi izpraševalec pri razlaganju slišane življenjske zgodbe doda svojo mero subjektivnosti. Ne glede na željo po čimbolj objektivnem povzemanju gre pri analizi življenjskih zgodb za podajanje interpretacije interpretacije. Gre za kompleksen proces in tesno medsebojno povezanost in interakcijo izpraševalca in pripovedovalca in za dileme pripovedovalca, kaj meni, da izpraševalec želi od njega slišati. Povedane življenjske zgodbe so zato enkratne in neponovljive, saj bi v drugačnih okoliščinah, z drugim izpraševalcem, pripoved bila drugačna. Interakcija med pripovedovalcem in izpraševalcem je močno strukturirana, intersubjektivna in povezana z okoliščinami, v katerih nastaja.

V primeru moje raziskave so bili sogovorniki znanstveniki z najvišjimi nazivi in visokimi intelektualnimi sposobnostmi. V njihovih pripovedih se odraža širina njihovih razmišljanj o njih samih, o njihovih družinah in svetu. Že pri uvodnih kontaktih sem bila pozorna na to, da sem temo raziskave predstavila dovolj atraktivno, da sem vzbudila njihovo zaupanje. Pri tem pa sem se, da s preširokim predstavljanjem in pojasnjevanjem teme raziskave in svojih stališč, ne bi ogrozila njihove »nekontaminiranosti«, podredila doberšnji meri samocenzure. Kljub temu, da sem bila z informacijami dokaj skopa, je bil odziv povabljenih k sodelovanju odličen. Prvi stiki so bili pisni, preko e-pošte, vsakemu sem pisala posebej in niti dve nagovorni pismi nista bili identični. S personalizacijo in vključevanjem individualno

doziranih informacij, sem začela vzpostavljati odnos z vsakim od sogovornikov in to nadaljevala v vseh nadaljnjih stikih, do srečanja in izpeljave intervjuja. Ta taktika se je izkazala za učinkovito, saj so bili na intervjuju moji sogovorniki ne glede na to, da smo se srečali prvič in si bili popolni tujci (razen z enim sogovornikom), zelo sproščeni, zavzeti in naklonjeni.

Zanimivo je tudi dejstvo, da je več sogovornikov, kljub jasnim pojasnilom o tehniki izpeljave intervjuja, v nekem trenutku s postavljanjem vprašanj med svojo pripovedjo, z menoj poskušalo zamenjati vlogo in izvedeti tudi moja stališča o določeni temi oziroma preusmeriti potek in intervjuja v dialog. Ti poskusi kažejo na resnično zavzetost in poglobljenost sogovornikov, prav tako pa tudi na to, da sem bila kot izpraševalka tekom intervjuja izpostavljena stalnemu pozornemu preverjanju in opazovanju. Zaradi korektne izvedbe intervjujev po predvideni metodologiji, seveda tega obrata nisem dopustila, so se pa z nekaterimi sogovorniki pogovori nadaljevali kasneje, izven okvira intervjuja in ob drugih srečanjih. Dejansko se med izpraševalcem in pripovedovalcem vzpostavi nekakšna intimna zaupna vez.

Vsi intervjuji so bili opravljeni v slovenščini, maternem jeziku vseh sodelujočih, tako mene kot izpraševalke in intervjuvancev. V slovenskem besedilu transkripcije dosledno sledijo povedanemu in seveda strukturo jezika ohranjam tudi v uporabljenih citatih. Zaradi standardov Univerze v Novi Gorici je bila disertacija v celoti prevedena v angleški jezik, pri tem so bili tudi citati prevedeni v knjižni jezik.

Stalna prisotnost dvojnosti, po eni strani: kako lepa je slovenska dežela s svojo razgibano pokrajino, kako idealno geografsko lega ima, kako smo njeni prebivalci prijazni, delovni in odprti in po drugi: kako majhnost prostora vpliva na življenje in vedenje posameznikov in na njihove vrednote in otežuje delovanje celotnih sistemov (npr.: pravosodnega, izobraževalnega, zdravstvenega) ter s tem tudi upočasnjuje razvoj in zmanjšuje kakovost življenja v Sloveniji, me zelo zanima. Sprašujem se, kakšno dediščino zapuščamo prihodnjim generacijam in ali bodo naši zanamci tu hoteli in mogli ustvarjalno živeti.

Iz opazanj pogostih uspešnih selitev mladih slovenskih akademikov v tujino se je porajal interes za pričujočo raziskavo in izoblikovalo se je izhodišče, ki povzema bistvo, okoli katerega razvijam raziskavo in disertacijo. Menim namreč, da:

*»V iskanju najboljših pogojev za študij in raziskovalno delo, po prelomnih dogodkih konec 80-ih let 20. stoletja, se vedno več slovenskih študentov odloča za študij v tujini. Selitev, ki je sprva omejena na čas študija, se vse pogosteje spreminja v stalno, saj slovenske raziskovalne ustanove zelo redko ponujajo primerljive pogoje za delo.«*

Za izvedbo raziskave sem uporabila metodo narativnega intervjuja in v besedilo vključeni citati so ilustrativni izseki iz intervjujev, ki sem jih z namenom, da bi ugotovila, kako stanje in možnosti delovanja v raziskovalni sferi v Sloveniji doživljajo ljudje, ki so (ali pa so bili) del tega specifičnega področja, opravila z desetimi doktorji in doktoricami znanosti. Izbrala sem sogovornike, ki so s pripovedjo svojih življenjskih zgodb ilustrirali dogodke in pojasnili vzroke in razloge za svoje odločitve, ki so jih kot raziskovalce vodili v tujino in tako z dejansko izkušnjo podpiram ugotovitve o okvirih, ki v zadnjih 20 letih opredeljujejo slovenski raziskovalni prostor.

Jezik v citatih v slovenskem besedilu ohranjam enak, kot je bil posnet med intervjujem in nato transkribiran, torej v obliki ustne pripovedi in ga ne prevajam v knjižni jezik, želim, da se ohrani avtentičnost izrečenega. Prevod v angleščino se v tem delu razlikuje od izvirnika disertacije v mojem maternem jeziku, saj so bili pri prevodu tudi citati prevedeni v knjižni jezik. O razlogih za dopustnost tega v konkretnem primeru, govorim v nadaljevanju.

Intervjuje sem opravila v času med junijem 2010 in avgustom 2011.

Izsledki raziskave potrjujejo v hipotezi izoblikovano izhodišče. Dejansko se začasne selitve raziskovalcev spreminjajo v stalne, ker Slovenija ne ponuja z razvito tujino primerljivih pogojev za delo. Je pa v tem kontekstu težko govoriti o begu možganov, saj selitve niti po migracijskih teorijah, niti po percepciji migrantov samih, niso beg. Gre le za selitve, ki so posledica razmer v raziskovalni in visokošolski sferi v

Sloveniji. Selijo se mladi raziskovalci, ki izhajajo iz odprtega, stimulatívnega družinskega okolja in selitev dojemajo kot normalen korak v svoji znanstveni karieri. Če hočemo govoriti o pretoku raziskovalnih potencialov ugotovimo, da gre v večji meri za odliv in za šibkejši priliv. Slovenija trenutno tako izgublja potencialno vrhunske raziskovalce hitreje, kot jih pridobiva.

Sogovorniki bolj kot narodnost, kot nosilca svoje identitete doživljajo svoje raziskovalno področje, sebe pa doživljajo kot del “*transnacionalnega raziskovalnega polja*” tako, da le na noto pripadnosti narodu in matični državi, ni mogoče pričakovati odločitev za vrnitev v Slovenijo. Bi pa bila repatriacija možna, če bi v Sloveniji delovale v globalnem smislu vrhunske raziskovalne skupine s posameznih področij. Sogovorniki namreč jasno izpričujejo izredno kompetitivnost raziskovalnega dela v globalnem smislu, kjer štejejo le mednarodno primerljivi vrhunski dosežki. Lahko govorim o *globalnem akademskem kapitalizmu*. Mnoge države se tega zavedajo in imajo zato popolnoma jasno definirano razvojno vizijo in izrecno opredeljena prioriteta področja – ki so tudi v svetovnem smislu prepoznana kot najperspektivnejša in najpomembnejša. Slovenija v tem smislu močno zaostaja, saj se sredstva, namenjena raziskavam drobijo med mnoge raziskovalne organizacija, skupine in raziskovace, čeprav mnogi med njimi opravljajo raziskave, ki jih mednarodna raziskovalna skupnost več ne prepozna kot perspektivne in jih zato opušča.

Akadska svoboda, neodvisnost, in možnost, da pridobijo finančna sredstva za svoje raziskave in da z njimi svobodno razpolagajo, so po izjavah mojih sogovornikov najpomembnejši dejavniki, ki bi lahko vplivali na odločitev za njihovo vrnitev v Slovenijo. Plača ni bistven dejavnik, opremljenost laboratorija, možnost zaposlitve ustreznega števila sodelavcev – študentov in možnost uspešnega konkuriranja za sredstva, pa so.

Ljudje prihajajo in odhajajo stalno, več hočeš drug od drugega, veš, da je čas omejen in hočeš tist trenutek izkoristi. Tako, da meni je zelo pomembno, da vsak trenutek izkoristim. Vidim ljudi in vem, da, midva sva skupaj zdaj dve uri

in da bova v teh dveh urah mogoče prišla skupaj več, kot če bi z neko celo življenje živel in dejmo iz tega čim več iztržiti. *(umetnik)*

Mladi akademiki svoje odločitve sprejemajo individualno, ko presojujejo okoliščine, pa kot vrednote pretehtajo občutek svobode, sprejemanja posledic svojih odločitev, prevzemanje odgovornosti zase, možnost strokovnega razvoja in osebnega napredka. Ne čutijo se vezane na (katerikoli) lokalni prostor, kot svoj oder doživljajo ves svet in se selijo tja, kjer bodo svoje cilje in ambicije najlažje uresničili.

Sem se prjavu na par univerz in pol se je pač ta Stanford zgodu. No in pol, k se je pač ta Stanford zgodu, a ne, je pa pač, ne moreš reči ne, no pač rečeš: a s fusbaler al nis. In če si fusbaler in če pride Real Madrid in reče, a b ti igral futsal za ns, a ne, mislim sej, a ne, srce mi bije zeleno, za Olimpijo, ampak, a ne, a veš, ne gre. *(hitri govorec)*

Nihče izmed mojih sogovornikov ni omenil varnosti zaposlitve kot pomembnega dejavnika pri izbiri delovnega okolja in države dela. Nasprotno, prav vsi so kot pomembno vrednoto izpostavili pogoje za raziskovalno delo, možnost razvoja in uspešno mednarodno akademsko kariero, jasno definirano razvojno vizijo države, predvsem pa občutek svobode pri delu.

Meni je ključno, da sem zmeraj v takem položaju, da lahko srečam veliko ljudi, da se lahko povežemo, in to bi bilo zelo težko v Sloveniji. *(umetnik)*

Zaprta sistem, ki ga obstoječa zakonodaja v Sloveniji podpira, tako spodbuja selitve dela raziskovalne populacije, pri katerem se bistvene osebne vrednote ne skladajo z vrednotami, ki jih spodbuja in omogoča sedanji sistem. Prav tako ta sistem tudi onemogoča ali vsaj v veliki meri otežuje dotok tujih raziskovalcev v Slovenijo, saj štiti že trajno zasedena delovna mesta, ne omogoča pretoka in ne odpiranja novih pozicij, primernih zlasti za mlajše raziskovalce.

Ja, mene, predvsem v Sloveniji moti to, da ljudje ne cenijo to, kar imamo, znanost kot celota, vsak vidi samo samega sebe, ker smo tako nefluidni. Fluidnost manjka. Se prav bojimo tega, da bomo izgubili svojo nacionalno

identiteto s tem, če bodo začeli tujci prihajati, blazno potrebujemo kot znanstvenki to, da pridejo iz tujine delati ljudje sem, ne. Da pridejo študentje iz tujine. To ne bodo Američani, to bodo Bosanci, ampak bodo to motivirani Bosanci. Da imamo nek sistem, ki nas, ki se odpre na ven, da se tega ne bojimo, da se s tem tudi malo zmanjšajo notranja trenja. Ker se zelo se, po navadi pač ljudje krivijo ljudi. Da smo mi Slovenci pač taki, da se stalno med seboj kregamo, meni zdi, da je to bolj zato, ker smo majhna država. To je tako, kot če bi z Manhattnom primerjali, recimo, tam, kjer sem jaz živel: Upper East Side, to bila približno Slovenija po velikosti prebivalstva in noben si ne more niti zamišljati, da bi imel znotraj neko državo in univerzo, ki bi imela samo ljudi iz tega področja, v trenutku ti je jasno, da to ne bo delovalo. Tako, da, ja sem zdi, da enostavno, malo se mora pretok povečati. Pol se tudi ostale stvari poštimajo. *(umetnik)*

Velik razlogov je zaradi katerih jaz mislim, da ta brain drain ni tako drain ampak je »movement«. Kar bi se pa Slovenija lahko naučila, je pa seveda, da bi, oziroma sej kaj jaz vem, kar bi pa v Sloveniji lahko naredili pa je, da bi lahko poskušali pametne ljudi tudi v Slovenijo dobivat. Ali so to zdaj Slovenci ali ne, je pa vseeno. Ampak, probi dobit, tudi dinamiko v Slovenijo, povečati, in seveda najlažje je dobiti Slovence, ki so v tujini, ampak niso pa to edini, Francozi, ki so se poročili s Slovenko, morda bi oni hoteli priti sem pametni ljudje, sposobni, ne vem, Srbi, ki jim je grozno živeti tam, ker pa res ne morejo nič intelektualno, bi pa morda radi sem prišli. *(kolesar)*

Javne agencije kljub prilagajanju evropskim normativom še vedno ne odigravajo vloge, ki naj bi jo imele kot organizacije civilne družbe, še vedno je povezanost z državo prevelika, tako stanje vodi v dezorganizacijo javnega življenja in selitev najsposobnejšega mladega dela populacije v tujino. Ugotavljam, da se v Sloveniji v danem trenutku dogaja prav to.

Nekatere migracijske teorije poudajajo pomen družine pri odločanju ali bo eden ali več članov emigriral, pri moji raziskavi lahko vlogo družine identificiram kot močan dejavnik pri potencialni vrnitvi v domovino, zlasti v obdobju, ko / če si raziskovalec ustvari družino s slovenskim partnerjem in imata majhne otroke. Pri tem ne gre za

ekonomske razloge za vrnitev, temveč izključno za družinske, gre za vključitev starih staršev v vsakodnevno rutino in za intimne družinske vezi. V primeru akademikov torej družina lahko odigra odločilno vlogo pri repatriaciji, ni pa pomemben dejavnik vpliva pri odločitvi za emigracijo. Pri raziskovalcih, ki živijo v mešanem zakonu, pa matična družina, zlasti, če je raziskovalec moški, nima vpliva na vrnitev.

Nadaljevanje mojega dela bi lahko šlo v smer kvalitativne raziskave med akademiki, ki Slovenije niso in je ne nameravajo zapustiti, saj poleg zakonodajnih okvirov pravnihov »vsak dan« kreira okolje, v katero se raziskovalci in študentje, ki prihajajo iz tujine (pa naj bodo to izseljeni Slovenci ali pa tujci), ne morejo vključiti.

Interes za vrnitev ali vsaj sodelovanje izseljenih slovenskih znanstvenikov z matično domovino mora izraziti država. Možnosti za sodelovanje je v resnici več, kot jih izseljeni poznajo, zato mora Republika Slovenija prevzeti pobudo, če dejansko ta interes ima. Toda ali ga v resnici ima?





## 7 SOURCES

Ackers, Louise. "Moving People and Knowledge: Scientific Mobility in the European Union 1", *International Migration*, Vol. 43, 2005, 99 – 131.

Adam, Frane. "Od doline šentflorjanske do silicijeve doline," *Delo*, April 30, 2010, 22-23.

Adam, Frane. "Optimiranje. Ljubljana," *Delo*, April 15, 2010, 24.

Adam, Frane. "Danajski darovi raziskovalcem?" *Delo*, October 28, 2010, 25.

Adam, Frane and Makarovič, Matej. "Tranzicijske spremembe v luči družboslovnih analiz," *Teorija in praksa*, Vol. 38, No. 3, 2001, 373-385.

Alsatuarri, Pertti. "The Discursive Construction of Personality," in Lieblich, A. and Josselson, A. (eds.). *The Narrative Study of Lives*, Sage Publications, London-New Delhi, 1997, 1-20.

Anderluh, Gregor and 18 co-signatories. "Sta FC Barcelona in NK Maribor dejansko enakovredna? Ali v Sloveniji dejansko podpiramo odličnost v znanosti?" *Delo*, March 22, 2012, 17.

Appadurai, Arjun. *Modernity at Large: Cultural Dimensions of Modernity*, University of Minnesota Press, London – Minneapolis, 2000.

Arango, Joaquin. *Explaining Migration: A Critical View*, Blackwell Publishers, Oxford – Malden, 2000.

Atkinson, Robert. *The Life Story Interview*, Qualitative research Methods, Vol. 44, Thousand Oaks, Sage Publications Inc., 1998.

Baker, Sarah Elsie, Edwards, Rosalind. "How many qualitative interviews are enough? Expert voices and early career reflections on sampling and cases in

qualitative research”, *National centre for Research Methods Paper*, 2012.  
[http://eprints.ncrm.ac.uk/2273/4/how\\_many\\_interviews.pdf](http://eprints.ncrm.ac.uk/2273/4/how_many_interviews.pdf) accessed October 29, 2012.

Bauder, Harald. “The International Mobility of Academics: A Labour Market Perspective”, *International Migration*, Vol. 89, 2012.

Bauman, Zygmunt. *Tekoča moderna*, Založba /\*cf, Ljubljana, 2002.

Bauman, Zygmunt. *Liquid Life*, Polity Press, Malden, USA, 2005.

Becher, Tony, Trowler, Paul R. *Academic Tribes and Territories: Intellectual enquiry and the culture of disciplines*, 2<sup>nd</sup> Edition, Ballmor, Buckingham, The Society for research into Higher Education & Open University Press, 2001.

Beck, Ulrich. *Družba tveganja*, Krtina, Ljubljana, 2009.

Becker, Gary, S. *Human Capital: A Theoretical and Empirical Analysis, With Special Reference to Education*, National Bureau of Economic Research, New York, 1964.

Bell, Daniel. *The Coming of the Post-Industrial Society: A Venture in Social Forecasting*. Basic Books, New York. 1973.

*Benchmarking National R&D Policies – Human Resources in RTD (STRATA-ETAN Expert Working Group)*, European Commission, Brussels, 2002,  
[http://ec.europa.eu/research/conferences/2004/sciprof/cd/pdf/at/supplement08\\_en.pdf](http://ec.europa.eu/research/conferences/2004/sciprof/cd/pdf/at/supplement08_en.pdf)  
accessed October 9, 2011.

Bevc, Milena. “Človeški viri v razvojno-raziskovalni dejavnosti v Sloveniji v zadnjih 15 letih in primerjava z državami EU,” *IB revija* 1/2007, 56-72.

Bevc, Milena. “Razmere v slovenski znanosti – zaznave raziskovalcev,” *IB revija* 1/2009, 25-35.

Bevc, Milena. "Beg možganov med slovenskimi znanstveniki, Spol: moški, starost: 37 let, izobrazba: doktor fizike, ciljna država: ZDA," *Delo*, August 13, 2011, 18-19.

Bevc, Milena, Koman, Klemen, and Murovec, Nika. *Človeški viri v razvojno-raziskovalni dejavnosti v Sloveniji in primerjava z državami v EU – stanje in emigracija*, Inštitut za ekonomska raziskovanja, Ljubljana, 2006.

Bevc, Milena, Koman, Klemen and Murovec, Nika. *Človeški viri v razvojno-raziskovalni dejavnosti v državah Evropske unije – stanje, trendi in politika*, Inštitut za ekonomska raziskovanja, Ljubljana, 2003.

Bevc, Milena, Koman, Klemen and Murovec, Nika. *Človeški viri v razvojno-raziskovalni dejavnosti v državah Evropske unije – stanje, trendi in politika*, Inštitut za ekonomska raziskovanja, Ljubljana, 2004.

Bevc, Milena, Ogorevc, Marko and Koman, Klemen. *Emigracija slovenskih raziskovalcev in njihova zaposlitvena mobilnost znotraj Slovenije*, Inštitut za ekonomska raziskovanja, Ljubljana, 2011.

Bevc, Milena and Uršič, Sonja. *Potencialni odliv človeških virov iz RRD v tujino in v druge dejavnosti v Sloveniji ter primerjava s stanjem sredi 90.let*, Inštitut za ekonomska raziskovanja, Ljubljana, 2006.

Bianchi, Luca. *La filosofia nelle Università. Secoli XIII e XIV*, La Nuova Italia, Florence, 1997, 27. In: Paolo Rossi, *Rojstvo moderne znanosti v Evropi*, Založba / \*cf, Ljubljana, 2004.

Borjas, George B. "Economic Theory and International Migration," *International Migration Review*, Vol. 23, No. 3(78), 1987, 457-485.

Bourdieu, Pierre. *Znanost o znanosti in refleksivnost*, Liberalna akademija, Ljubljana, 2004.

Bourdieu, Pierre. *Homo academicus*, Stanford University Press, Stanford, California, 1988.

Boyd, Monica. "Family and Personal Networks in International Migration: Recent Developments and New Agendas", *International Migration Review*, Vol. 23, No. 3, Special Silver Anniversary Issue: International Migration an Assessment for the 90's, Autumn 1989, 638 - 670.

Braidotti, Rosi and Vonk, Esther. "Feminist Theories of Subjectivity in a European perspective," In Passerini, Luisa, Braidotti, Rosi and Gazsi, Judit et al (eds.). *EU research on social sciences and humanities, gender relationships in Europe at the turn of the millenium, women as subjects in migration and marriage – Final report*, 2004,  
<http://cordis.europa.eu/search/index.cfm?fuseaction=lib.simplifiedocumentlucene>  
accessed July 10, 2011.

Brettell, Caroline T. "Theorising Migration in Anthropology: The Social Construction of Networks, Identities, Communities, and Globalspaces," In: Brettell, Caroline T. and Hollifield, James F. (eds.). *Migration Theory: Talking across Disciplines*, Routledge, New York, 2000, 101.

Breznik, Maja. "O čem pravzaprav govorimo, ko govorimo o avtonomiji?" *Delo*, February 19, 2011, 18.

Brezovec, Aleksandra. "Valček univerzitetne inovativnosti za postarano Evropo," *Delo*, December 11, 2010, 17.

Brockmeier, Jens. "Remembering and Forgetting: Narative as Cultural Memory," *Culture & Psychology*, Culture Psychology 2002; 8;15.  
<http://cap.sagepub.com/cgi/content/abstract/8/1/15> accessed October 27, 2008.

Bunta, Aleš. "Deseti bratje slovenske znanosti," *Pogledi*, April 21, 2010, 29.

Cairns, David, Smyth, Jim. "*I wouldn't mind moving actually*: Exploring Student Mobility in Northern Ireland", *International Migration*, Vol. 49, 2009, 135 – 161.

Castles, Steven. "International Migration at the Beginning of the twenty-first century: global trends and issues," *UNESCO*, Oxford, VB, Malden, MA USA: Blackwell publishers, 2000.

*CMEPIUS – Centre of Republic of Slovenia for Mobility and European Educational and Training Programms*, <http://www.cmepius.si/en/llp-in-slovenia/erasmus.aspx> accessed October 25, 2012.

Cole, Stephen and Cole, Jonathan R. "Scientific Output and Recognition: A Study in the Operation of the Reward System in Science," *American Sociological Review*, Vol. 32, No. 2, 1967, 377-390.

Čapo Žmegač, Jasna. "Strangers either way: The Lives of Croatian Refugees in Their New Home", *European Anthropology in Translation*, Vol. 2, 2007.

Dahrendorf, Ralf. *Universities after Communism*, Edition Körber-Stiftung, Hamburg, 2000.

Darvas, Péter. "Institutional Innovation in Central European Higher Education", *TERC*, Vol. 9, Vienna, 1996, 74.

Deacon, Delsey, Russell, Penny, Woollacott, Angela (eds.). *Transnational Lives: Biographies of Global Modernity, 1700 to present*, Palgrave Macmillan, New York, 2010.

Demšar, Franci and Dovč, Peter. "Postati moramo povsem primerljivi z vrhom raziskovalno najbolj razvitih držav v Evropi," *Delo*, July 15, 2010, 19.

EMBO – European Molecular Biology Association, [www.embo.org](http://www.embo.org), accessed December 19, 2011.

ERA-net, European Research Area network,  
[http://ec.europa.eu/research/fp6/index\\_en.cfm?p=9\\_eranet](http://ec.europa.eu/research/fp6/index_en.cfm?p=9_eranet) , accessed December 7, 2011.

ERC Task Force Final Report, July 7, 2011,  
[http://erc.europa.eu/sites/default/files/content/erc\\_taskforce\\_report.pdf](http://erc.europa.eu/sites/default/files/content/erc_taskforce_report.pdf) accessed  
December 7, 2011.

ERC, European Research Council, <http://erc.europa.eu> , accessed December 7, 2011.

Fivush, Robyn. "Remembering and Reminiscing: How Individual Lives are  
Constructed in Family Narratives," *Memory Studies*, Vol. 1, 2008,  
[www.psychology.emory.edu/cognition/fivush/lab/FivushLabWebsite/papers/mem%20studies.pdf](http://www.psychology.emory.edu/cognition/fivush/lab/FivushLabWebsite/papers/mem%20studies.pdf), accessed October 11, 2011.

Fivush, Robyn. "Culture and Language in the Emergence of Autobiographical  
Memory," *Psychological Science*, Vol. 15, No. 9, 2004, 674,  
[www.psychology.emory.edu/cognition/fivush/lab/FivushLabWebsite/papers/psychsci.pdf](http://www.psychology.emory.edu/cognition/fivush/lab/FivushLabWebsite/papers/psychsci.pdf) , accessed October 11, 2011.

Forstenlechner, Ingo. "Brain Drain in Developed Countries: Can Governments do  
Anything to Bring Expatriates Back?", *Public Policy and Administration*, Vol. 25,  
No. 156, 2010, [www.sagepublicatons.com](http://www.sagepublicatons.com) accessed March 8, 2011.

Freitag, Michel. *Brodolom univerze in drugi eseji iz politične epistemologije*,  
introduction by Rastko Močnik, Založba Sofija, Ljubljana, 2010.

Gams, Matjaž. "Preveč razvojniki – premalo dodane vrednosti," *Delo*, February 3,  
2011, 24.

Gaillard, Jacques and Anne Marie. "Introduction: The International Mobility of  
Brains: Exodus or Circulation," *Science, Technology & Society* 2: 2 (1997),  
[www.sagepublications.com](http://www.sagepublications.com) accessed June 17, 2011

Gaillard, Jacques and Anne Marie. "The International Circulation of Scientists and  
Technologists: A Win-Lose or a Win-Win Situation?" *Science Communication*, Vol.  
20, No. 1, 1998, 106-115.

Geertz, Clifford. *Local Knowledge*, New York, Basic Books, 1983.

Gettier, Edmund L. "Is Justified True Belief Knowledge?", *Analysis*, 23, 1963, 121-123.

Giddens, Anthony. *Tretja pot: obnova socialne demokracije*, Ljubljana, Orbis, 2000.

Glick Schiller, Nina, Basch, Linda, Szanton Blanc, Cristina. "Migrant or Transmigrant: Theorizing transnational migration", *Anthropological Quarterly*, Vol. 68, No. 1, jan 1995, 48 – 63,  
[www.sscnet.ucla.edu/history/faculty/henryyu/Hist597/Schiller\\_et\\_al.pdf](http://www.sscnet.ucla.edu/history/faculty/henryyu/Hist597/Schiller_et_al.pdf) accessed October 28, 2012.

Gombač, Jure. *Esuli ali optanti? Zgodovinski primer v luči sodobne teorije*, Založba ZRC, ZRC SAZU, Ljubljana, 2005.

Gurak, Douglas T. "Migration Networks and the Shaping of Migration Systems", In Kritz, Mary M., Lim, Lean, and Zlotnik, Hania (eds.), *International Migration Systems. A Global Approach*, Clarendon Press, Oxford, 1992, 150-176.

Driss Habti. *Highly Skilled Mobility and Migration from MENA Region to Finland: A Socio-analytical Approach*. Publications of the University of Eastern Finland. Dissertations in Social Sciences and Business Studies, No. 4, 2012. 248 p.  
[http://epublications.uef.fi/pub/urn\\_isbn\\_978-952-61-0863-6/urn\\_isbn\\_978-952-61-0863-6.pdf](http://epublications.uef.fi/pub/urn_isbn_978-952-61-0863-6/urn_isbn_978-952-61-0863-6.pdf), accessed October 25, 2012.

Hemon, Aleksander. In Ervin Hladnik Milharčič, "Po treh letih sem začel pisati v angleščini: intervju z Aleksandrom Hemonom," *Delo*, July 7, 2003, 4-6.

Heinze, Carsten. *Autobiographie und zeitgeschichtliche Erfahrung - Über autobiographisches Schreiben und Erinnern in sozialcommunicativen Kontexten*, Vandenhoeck & Ruprecht GmbH & Co., Göttingen, 2010.

Hiša eksperimentov. <http://www.he.si/index.php?lang=en> accessed October 30, 2012.

Hoffman, David M. "Changing Academic Mobility Patterns and International Migration: What Will Academic Mobility mean in the 21<sup>st</sup> Century?" *Journal of Studies in International Education*, Vol. 13, 2009, 347, originally published online July 25, 2008, [www.jsi.sagepub.com](http://www.jsi.sagepub.com), accessed March 3, 2011.

Ilić, Milan. "Slovenec ustanavlja svojo skupino na IST Avstrija," *Delo*, March 8, 2012, 17.

Inglehart, Ronald. *Modernization and Postmodernization*, Princeton University Press, New Jersey, 1997.

*Institute for Science and Technology Austria*, <http://www.ist.ac.at> accessed November 11, 2011.

*Javna agencija za raziskovalno dejavnost RS*, <http://www.arrs.gov.si/sl/> accessed December 14, 2011.

*Javna agencija za tehnološki razvoj RS*, <http://www.tia.si/> accessed on December 14, 2011.

*Javna agencija RS za podjetništvo in tuje investicije*, <http://www.japti.si/> accessed December 14, 2011.

Jöns, Heike. "Brain circulation and Transnational knowledge networks: studying long-term effects of academic mobility to Germany, 1954-2000", *Global Networks*, Vol. 9, 2009, 315 – 338.

*Kariera doktorjev znanosti, Slovenija, 2009 - končni podatki*, SURS, 2011, [www.stat.si/novica\\_prikazi.aspx?ID=3951](http://www.stat.si/novica_prikazi.aspx?ID=3951) accessed September 9, 2011.

*Key Figures 2005: Towards a European Research Area – Science, Technology and Innovation*, European Commission, Brussels, 2005, [http://ec.europa.eu/invest-in-research/key05\\_en.htm](http://ec.europa.eu/invest-in-research/key05_en.htm) accessed October 9, 2011.



Knorr Cetina, Karin. *Epistemic Cultures. How the Sciences Make Knowledge*, Cambridge, Harvard University Press, 2003.

Knowles, Gary J. and Cole, Ardra V. *Lives in Context, The Art of Life History Research*, Altamira Press, Oxford – New York, 2001.

Kos, Marko. "Razvojni preboj se začne v podjetjih," *Delo*, June 19, 2010, 23.

Kontler Salomon, Jasna. "Anonimnost recenzentov ni sporna," *Delo*, February 18, 2011, 23.

Kontler Salomon, Jasna. "Tudi v znanosti ni vse javno", *Delo*, February 24, 2011, 18.

Kontler Salomon, Jasna. "Ogrožena anonimnost recenzentov", *Delo*, February 24, 2011, 18.

Kontler Salamon, Jasna. "Gospodarstvo omogoča kakovostnejšo znanost," *Delo*, January 5, 2012, 15.

Kontler Salamon, Jasna. "Elitni inštitut vabi le najboljše." *Delo*, December 16, 2010, 24.

Kuhn, Thomas. *Struktura znanstvenih revolucij*, Založba Krtina, Ljubljana, 1998. Published in 1962 with the original title *The Structure of Scientific Revolutions*.

Kump, Sonja, Podmernik, Darka and Macur, Mirna. *Človeški potenciali v slovenski raziskovalno-razvojni dejavnosti (RRD) v obdobju 1990 – 1999, raziskovalna dejavnost na Slovenskem*, Slovenska akademija znanosti in umetnosti, Ljubljana, 2002.

Lah Turnšek, Tamara. "Bodo pač odšli v tujino," *Delo*, April 15, 2010, 24.

Le Goff, Jacques. *Tempo della Chiesa e tempo del mercante e altri saggi sul lavoro e la culture del Medioevo*, Einaudi, Torino, 1977, 153-170. In: Rossi, Paolo. *Rojstvo moderne znanosti v Evropi*, Založba / \*cf, Ljubljana, 2004.

Lewitt, Peggy. *Transnational Migrants: When Home Means More Than One Country*, Migration Policy Institute, Washington, 2010, [www.migrationinformation.org/Feature/print.cfm?ID=261](http://www.migrationinformation.org/Feature/print.cfm?ID=261) accessed July 22, 2010.

Lewitt, Peggy and Schiller, Nina Glick. "Conceptualizing Simultaneity: A Transnational Social Field Perspective on Society," *International Migration Review*, Vol. 38, No. 145, 2004, 595-629.

Lukšič-Hacin, Marina. "Povratniki kot del migracijskega kroga", *Dve domovini*, Vol. 15, 2002, 179 – 193.

Luthar, Oto. "Allegro molto appassionato," *Delo*, June 5, 2010, 12-13.

Luthar, Oto. "Zgodba neke interpretacije", *Delo*, March 10, 2011, 26.

Marshall, Martin, N. "Sampling for qualitative research", *Family Practice*, Vol. 13, No. 6, Oxford University Press, 1996, 522 – 525.

Massey, Douglas S. et al. *Worlds in Motion: International Migration at the end of the Millenium*, Clarendon Press, Oxford, 1998.

Massey, Douglas S. "Social Structure, Household Strategies and the Cumulative Causation of Migration," *Population Index*, Vol. 56, No. 1, 1990, 3-26.

Merriam-Webster. Slovar, <http://www.merriam-webster.com/dictionary/brain+drain?show=0&t=1307606957> accessed November 11, 2011.

Meyer, Jean-Baptiste and Brown, Mercy. "Scientific Diasporas: A new Approach to Brain Drain", 1999. [www.unesco.org/most/meyer.htm](http://www.unesco.org/most/meyer.htm) accessed October 27, 2012.

Milharčič Hladnik, Mirjam. "Migracije in medkulturni odnosi," *Organizacija znanja*, Vol. 12, No. 4, 2007, [http://home.izum.si/COBISS/OZ/2007\\_4/html/clanek\\_03.html](http://home.izum.si/COBISS/OZ/2007_4/html/clanek_03.html) accessed November 3, 2008.

Milharčič Hladnik, Mirjam. "Avto/biografičnost narativnosti: Metodološko teoretični pristopi v raziskovanju migracijskih študij," *Dve domovini/Two homelands*, Vol. 26, 2007, 31-46.

*Ministrstvo za znanost, visoko šolstvo in tehnologijo*, <http://www.mvzt.gov.si/> accessed January 24, 2012.

*Ministrstvo za izobraževanje, znanost, kulturo in šport*, <http://www.mizks.gov.si/> accessed March 20, 2012.

Morano-Foadi, Sonia. "Scientific Mobility, Career Progression, and Excellence in the European Research Area1", *International Migration*, Vol. 43, 2005, 133 – 162.

Musek, Janek. "Slovenci v luči mednarodnih in medkulturnih psiholoških primerjav" In: Erika Kržišnik (ed.), *Seminar slovenskega jezika, literature in kulture 35*, Ljubljana, Filozofska fakulteta, 1999, 181-200.

Musselin, Christine. "Towards an European academic labour market? Some lessons drawn from empirical studies on academic mobility," *Higher Education*, Vol. 48, 2004, 55-78.

Myrdal, Gunnar. *Economic Theory and Undeveloped regions*, Duckworth, London, 1957.

*Nacionalni program visokega šolstva 2011-2020*, [www.uradni-list.si/1/content?id=103885](http://www.uradni-list.si/1/content?id=103885) accessed October 6, 2011.

*Nacionalni razvojni program 1995-2000*, [www.uradni-list.si/1/objava.jsp?urlid=19958&stevilka=485](http://www.uradni-list.si/1/objava.jsp?urlid=19958&stevilka=485) accessed October 9, 2011.

*Nacionalni razvojni in raziskovalni program 2006-2010*, [www.uradni-list.si/1/content?id=67936](http://www.uradni-list.si/1/content?id=67936), accessed November 11, 2011.

- Odbor za znanost,  
[http://www.uszs.gov.si/si/znanost\\_mladi\\_gospodarstvo/znanost/odbor\\_za\\_znanost/](http://www.uszs.gov.si/si/znanost_mladi_gospodarstvo/znanost/odbor_za_znanost/)  
 accessed December 12, 2011.
- OECD, Frascati Manual, Paris, 2002,  
[http://www.uis.unesco.org/Library/Documents/OECDFrascatiManual02\\_en.pdf](http://www.uis.unesco.org/Library/Documents/OECDFrascatiManual02_en.pdf)  
 accessed October 13, 2011.
- Okasha, Samir. *Filozofija znanosti*, Založba Krtina, Ljubljana, 2008.
- Okinawa Institute of Science and technology  
[http://en.wikipedia.org/wiki/Okinawa\\_Institute\\_of\\_Science\\_and\\_Technology](http://en.wikipedia.org/wiki/Okinawa_Institute_of_Science_and_Technology) and  
<http://www.oist.jp/en.html> accessed November 11, 2011.
- Pejovnik, Stanislav. "Univerza ima težave s kakovostjo, a za to ni kriva bolonjska reforma," *Delo*, December 3, 2011, 4-6.
- Petrović, Tanja. *Ne tu, ne tam: Srbi v Beli krajini in njihova jezikovna ideologija v procesu zamenjave jezika*, Založba ZRC, Ljubljana, 2006.
- Pitroda, Sam. [http://en.wikipedia.org/wiki/Sam\\_Pitroda](http://en.wikipedia.org/wiki/Sam_Pitroda),  
[http://en.wikipedia.org/wiki/Sam\\_Pitroda](http://en.wikipedia.org/wiki/Sam_Pitroda), accessed October 24, 2012.
- Prijatelj, Maja. "Izgublamo doktorje znanosti," *Delo*, August 9, 2011, 1.
- Raziskovalna in inovacijska strategija Slovenije 2011-2020, [www.uradni-list.si/1/content?id=103975](http://www.uradni-list.si/1/content?id=103975) , accessed October 6, 2011.
- Reiner, Christian. "Brain competition policy as a new paradigm of regional policy: A European perspective", *Papers in Regional Science*, Vol. 89, 2010, 449 – 461.
- Renko, Mišo. "Pobegli možgani se vračajo domov", *Delo* (Ljubljana), August 8, 2011, 3.
- Repe, Božo. *Jutri je nov dan: Slovenci in razpad Jugoslavije*, Modrijan založba, 2002.

- Repe, Božo. "Pot v samostojnost" [www.ff.uni-lj.si/oddelek/zgodovina/wwwrepe/intervju.pdf](http://www.ff.uni-lj.si/oddelek/zgodovina/wwwrepe/intervju.pdf) accessed October 5, 2011.
- Rosenthal, Gabriele. *Erlebte und erzählte Lebensgeschichte, Gestalt und Struktur biographischer Selbstbeschreibungen*, Campus Verlag, Frankfurt/Main, New York, 1995.
- Rossi, Paolo. *Rojstvo moderne znanosti v Evropi*, Založba /\*cf., Ljubljana, 2004.
- Rozman, Andrej Roza. *Kekec kontra Rožletova banda*, Ljubljana, KUD France Prešeren, 2000.
- Rus, Veljko. "Sociološki vidiki prehoda iz moderne v postmoderno državo," *Teorija in praksa*, Ljubljana, Vol. 40-41, 2003, 5-16.
- Rus, Veljko and Toš, Niko. *Vrednote Slovencev in Evropejcev*, Fakulteta za družbene vede, Ljubljana, 2005.
- Santos, Hermilio. "Interpretations of everyday life: Approximations to the analysis of lifeworld," *Civitas*, Jan-April 2009, 103-117.
- Schneider, Laura J. "Science for sale," *H-Net Reviews in Humanities and Social Sciences*, 2009, <http://www.h-net.org/reviews/showpdf.php?id=22999> , accessed October 13, 2011.
- Schütze, Fritz. "Biographie Forschung und narratives Interview," *Neue Praxis*, 13(3): 1983, 283-293.
- Simon, Dieter. "Westliche Theorie – östliche Identität", *Transit* Vol. 9, 1995, 159 – 168.
- SSKJ, Slovar slovenskega knjižnega jezika, [http://bos.zrc-sazu.si/cgi/a03.exe?name=sskj\\_testa&expression=beg+možganov&hs=1](http://bos.zrc-sazu.si/cgi/a03.exe?name=sskj_testa&expression=beg+možganov&hs=1) accessed November 11, 2011.

Stalker's guide to international migration, Networks and systems, [http://pstalker.com/migration/mg\\_theories\\_3.htm](http://pstalker.com/migration/mg_theories_3.htm) accessed May 5, 2011.

Stark, Oded and Levhari, David. "On Migration and Risk in LDCs", *Economic Development and Cultural Change*, Vol. 31, No.1, Chicago University Press, Chicago, 1982, 191 – 196.

Statistical office of Republic of Slovenia, [www.stat.si/eng/index.asp](http://www.stat.si/eng/index.asp) accessed December 12, 2011.

Statistično raziskovanje karier doktorjev znanosti. Research report, [www.uszs.gov.si/si/znanost\\_mladi\\_gospodarstvo/znanost/projekti/](http://www.uszs.gov.si/si/znanost_mladi_gospodarstvo/znanost/projekti/) accessed December 18, 2011.

Statistični urad RS: kariera doktorjev znanosti, končni podatki 2009 [www.stat.si/novica\\_prikazi.aspx?ID=3951](http://www.stat.si/novica_prikazi.aspx?ID=3951) accessed September 9, 2011.

Šabec, Ksenija. *Homo europaeus, nacionalni stereotipi in kulturna identiteta Evrope*, Fakulteta za družbene vede, Ljubljana, 2006.

Širok, Kaja. "Kolektivno spominjanje in kolektivna pozaba v obmejnem prostoru: Spomini na Gorico 1943–1947," dissertation, University of Nova Gorica, 2009.

*The Slovene Human Resources and Scholarship Fund*, <http://www.sklad-kadri.si/en/> accessed October 25, 2012.

*Third European Report in Science & Technology Indicators*, European Commission, Brussels, 2003, [http://cordis.europa.eu/indicators/third\\_report.htm](http://cordis.europa.eu/indicators/third_report.htm) accessed October 9, 2011.

Toš, Niko, Hafner-Fink, Mitja et al. "Slovensko javno mnenje 1995/1," In: Toš, Niko (ed.). *Vrednote v prehodu II. Slovensko javno mnenje 1990-1998*, FDV, Inštitut za družbene vede, Inštitut za raziskovanje javnega mnenja, Ljubljana, 1999, 495.

Tremblay, Karine. "Academic Mobility and Immigration," *Journal of Studies of International Education*, Vol. 9, No. 3, Autumn 2005, 196-228, [www.jst.sagepub.com](http://www.jst.sagepub.com) accessed March 8, 2011.

Trstenjak, Anton. *Misli o slovenskem človeku*, Založništvo slovenske knjige, Ljubljana, 1991.

Turk, Vito. "Pomembno je, da smo čim boljši, ne pa da iščemo utemeljitve, zakaj smo slabši," *Delo*, September 8, 2011, 15.

Turk, Vito. "Še o anonimnosti recenzentov," *Delo*, March, 10, 2011, 26.

Turk, Vito. "Posamezniki v vrhu, večina pod povprečjem," *Delo*, August 8, 2011, 3.

Ule, Andrej. *Znanost, družba, vrednote*, Maribor, Aristej, 2006.

Valenčič, Jana. *Slovenci v Londonu 1991-1994*, Arhiv RS, Ljubljana, 2011.

Vodopivec, Peter. *Od Pohlinove slovnice do samostojne države*, Modrijan založba, Ljubljana, 2006.

Wallerstein, Immanuel. *Utopistike; Dediščina sociologije*, Ljubljana, Založba / \*cf., (rdeča zbirka), 1999.

Wolcott, Harry F. *Transforming Qualitative data: Description, Analysis and Interpretation*, Thousand Oaks, CA, Sage Publications Inc., 1994.

*Zakon o visokem šolstvu*, [www.uradni-list.si/1/content?id=76475](http://www.uradni-list.si/1/content?id=76475) accessed October 10, 2011.

*Zakon o razvojni in raziskovalni dejavnosti*, [www.arrs.gov.si/sl/akti/zak-rrd-jan08.asp](http://www.arrs.gov.si/sl/akti/zak-rrd-jan08.asp) accessed October 10, 2011.

*Zakon o delovnih razmerjih*,  
[www.mddsz.gov.si/si/zakonodaja\\_in\\_dokumenti/veljavni\\_predpisi/zakon\\_o\\_delovnih\\_razmerjih/](http://www.mddsz.gov.si/si/zakonodaja_in_dokumenti/veljavni_predpisi/zakon_o_delovnih_razmerjih/) accessed October 6, 2011.

*Zakon o davkih občanov*, [http://zakonodaja.gov.si/rpsi/r09/predpis\\_ZAKO49.html](http://zakonodaja.gov.si/rpsi/r09/predpis_ZAKO49.html) accessed October 6, 2011.

*Zakon o sistemu plač v javnem sektorju*, [www.uradni-list.si/1/objava.jsp?urlid=200795&stevilka=4738](http://www.uradni-list.si/1/objava.jsp?urlid=200795&stevilka=4738) accessed October 6, 2011.

Zinn, Jens Oliver. "Introduction to Biographical Research", *Social Contexts and Responses to Risk Network*, working paper, Canterbury, UK, 2004/4, 3-11.

Zontini, Elizabetta. *Transnational Families*, University of Nottingham, Nottingham, 2007, [http://wfnetwork.bc.edu/encyclopedia\\_entry.php?id=6361&area0All](http://wfnetwork.bc.edu/encyclopedia_entry.php?id=6361&area0All) accessed July 7, 2010.

Zweig, David, Chung, Siu Fung and Donglin, Han. "Redefining the Brain Drain: China's Diaspora Option," *Science, Technology & Society*, Vol. 13, No. 1, 2008, 1-33, [www.sagepublications.com](http://www.sagepublications.com) accessed March 3, 2011.

Žekš, Boštjan. Intervju. [www.mojaslovenija.net/politiki/intervju\\_dr\\_bostjan\\_zeks.html](http://www.mojaslovenija.net/politiki/intervju_dr_bostjan_zeks.html) accessed December 19, 2010.