

Scientific and Educational Community of Psychologists: Emigrational Intentions of Scientists and Students

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A sociological study aims to investigate: 1) the motives of emigration intentions of scientists of natural and social humanitarian Profile in 1990 and 1995, and 2) emigratory facilities and emmigratory motives psychology students in 1995.

Revealed that the material factors of order (1990) in five years (1995) really began to play a much greater role in shaping emigration intentions of natural science. The hierarchical structure of the motives of emigration intentions was significantly different among scientists of natural and social humanitarian profile.

As shown by results of a survey of students, psychologists, a leading factor in emigration was the motive of gaining new life experiences abroad, in second place — to familiarize themselves with the new education system, the third and fourth places respectively — the desire to see the world and the prospect of better employment opportunities abroad.

Key words: sphere of science and education, scientific emigration, brain drain, socio-psychological research, factors in creating the motives, intellectual potential.

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The International Mobility of Scientists: Sociological Approach

(An example of the United States of America)

The International mobility of Scientists: Sociological Approach, by A. King (Nikitina). This Paper is an attempt to analyze wide spread immigration of scientists from the lenses of three main sociological perspectives: functionalism, symbolic interactionism, and conflict perspective, at macro and micro

levels. From **functionalist** perspective approach those dynamics are functional for leveraging contradictions among labor demand and educational supply. And at the same time they are dysfunctional ... Using the **symbolic interactionism** perspective we can take a close look at this process. From the **conflict perspective** the international mobility could be evaluated on the three levels.

Key words: Globalization, International Scientific Mobility, Prearranged Immigration, sociological Approach, functionalism, symbolic interactionism, resocialization, Prearranged mobility, Spontaneous mobility, cultural differences.

Social changes around the World, Globalization of economy, political crisis, nationalistic upheavals and terrorism have become the main factors pushing people from their homes to a new land in pursuit of a “safe harbor” and opportunities.

From **functionalist** perspective approach those dynamics are functional for leveraging labor force demand and educational supply of the countries. And at the same time they are dysfunctional due to effect of draining human capital without “reimbursement” from one countries and overloading social support systems in others.

Some countries found themselves in donor’s positions and some are becoming overwhelming recipients of the “brains”. As a result the United States of America are experiencing now the Greatest Wave of Immigration in their history. And the increasing part of this wave belongs to highly educated people.

Director of Abdus Salam International Center for Theoretic Physics, K.R. Sreenivasan brought to consideration the economically draining effect of this “waves”. “After the [nineties], a rapid migration of scientists occurred from the former Soviet Union It is estimated that some 200,000 scientists have moved away, essentially decimating the once-thriving centers of excellence in USSR, and causing an estimated annual loss of 50 billion dollars.”(Sreenivasan, 2006:1)

The problem of losing high quality human capital is in the center of concern of Russian scientists. The International Conference in August 2009 in Saint Petersburg Russia - “The Mobility of Scientists as example of Inclusion of Russia in the World Scientific Community” was devoted largely to this topic. (Thesis of the ...2009: 5–52)

Valeria Suglobova (Валерия Суглобова) has presented multidimensional analysis of this problem from European Union (EU) Policy development approach, directed to extend scientific opportunities for talented youth within EU and Russia. Per her account: “according to Russian Statistics during 2002 summer break 1230 Russian universities students left Russia, in 2004 it was 6190.” (Thesis of ..., 2009: 42–43) Just in two years the growth was almost 500 %!

Alexander Allakhverdjan, Nadezhda Asheulova, Irina Dezhina, Elena Ivanova, Samuel Kugel, Michai Lazar are some of Russian scientists who work in this field of research.

T. Naumova shared her concerns regarding exodus of Russian “cadres”. “Russian scientists lag behind others in both remuneration and working conditions, and this has led many of them to leave science for other occupations or to leave Russia. While the country may benefit when a scientist chooses to enter business or politics, both society and Russian science are negatively affected when scientists emigrate. In order to preserve this country’s scientific potential it will be necessary to create incentives to encourage capable young people to fill the ranks of science.”(Naumova, 2010)

And it is not only a Russian problem. In Australia one-third of science, engineering and technology postgraduates travelled overseas to secure employment due to a lack of job

security... These are the findings from a nationwide study investigating the career pathways of science, engineering and technology research postgraduates. (Giles, Ski, Vrdoljak, 2009)

President of Research Committee on the Sociology of Science and Technology (CR 23) of International Sociological Association Jaime Jimenez, talked about “no returns” problem among paid by Mexican Government recipients of PhD abroad. (The Thesis ..., 2009: 21)

Director of the Institute of Sociology Hungarian Academy of Science, Pal Tamas provided theoretical perspectives of scientific mobility in connection with economy demands for Global knowledge in the Post-Crisis Capitalism. (The thesis... 2009)

Educational, employment, research opportunities attract talented people like a magnet.

Foreign accents are common now in classrooms, laboratories and business meetings in the U.S.

Countries with the most developed intellectual potentials (like former Soviet Union block, the United Kingdom, France, Germany, Canada, Cuba, China etc.) are becoming donors of brains for the countries with increasing demand for an intellect and with significant education problems like the United States of America.

And the United States, with their oldest Immigration system, thrives on young “brains” from around the World.

William Kerr, an economist at Harvard Business School, used name-matching software to identify the ethnicity of each of the eight millions scientists who had acquired an American patent since 1975. He found that the share of patents awarded to scientists born in America fell between 1975 and 2004. The share of all patents given to scientists of Chinese and Indian descent living in America more than tripled, from 4.1 % in the second half of the 1970s to 13.9 % in the years between 2000 and 2004. (Kerr, 2008)

Nearly 40 % of patents filed in 2005 by Intel, a silicon-chip maker, were the work of scientists from China or India. Some of these patents may have been awarded to American-born children of earlier migrants, but Mr. Kerr reckons that most changes over time arise from fresh immigration (Kerr, 2008)

How Susan Hockfield, the president of the Massachusetts Institute of Technology said: “Four of the [eight] American Nobel Prize winners [2009] were born outside of the United States and only came here as graduate or post-doctoral students or as scientists. They came because our system of higher education and advanced research has been a magnet for creative talent.”

At the same time Doctor Hockfield addressed the other American problem: “We also need to aggressively develop more homegrown talent. A recent report from the Organization of Economic Co-operation and Development (OECD) shows that we have lost our lead in education. In the 1960s, the U.S. had the highest high-school completion rate in the developed world; by 2005, we ranked 21st. In college completion, as recently as 1995 we ranked second. In 2005, we ranked 15th.” (Hockfield, 2009)

The American education system is going through a deep depression for the last 30 years. Since 1967 results of the Scholastic Assessment Test (SAT) have dropped dramatically. Their lowest level was in 1980. The Table (Figure 13.4) in James Henslin’s “Essentials of Sociology” demonstrates this without the doubt. (Henslin, 2009: 371)

Could it be related to the consequences of Vietnam War, the Hippie, and the Civil rights movements? Those factors need to be investigated. But cutting through all the times the chief problems of the U.S. education are violence, bullying, drugs, crime, grade inflation and social promotion. Multiple lawsuits against schools by parents have created

an atmosphere of failure rather than excellence. This creates mission impossible to discipline kids and grade them adequately. Parents create monsters out of their children, lacking discipline, skills and personal responsibilities. This pushes honest and responsible teachers out of schools with help of numerous lawyers.

Some American politicians, such as Pat Buchanan blamed the growth of immigration for education problems in the USA. (Buchanan, 2007)

Around 20 % or so per Andreas Schleicher (News week Aug 10/17/2009) of US students leave school functionally illiterate.

The National Illiteracy Action Project (The National Illiteracy Action Project 2007: 2) had estimated the cost of illiteracy for businesses and taxpayers around \$20 billion annually. (Illiteracy: A National Crisis, United Way of America) Twenty-two million people each year (44,000 people each week) are added to the adult illiterate population in the United States. (U.S. Department of Education)

43 % of the people with the lowest literacy skills live in poverty; 17 % receive food stamps, and 70 % have no job or a part-time job. (National Institute for Literacy) Approximately 20 % of American adults do not have a high school diploma. (U.S. Census 1990) An estimated 5 million adults holding jobs are considered functionally illiterate. (Nation's Business) Five billion a year in taxes goes to support people receiving public assistance that are unemployable due to illiteracy." (The National Illiteracy Action Project, 2007: 2)

Author Rudolf Flesch addresses this issue in a book on phonics called *Why Johnny Can't Read*. He states that the teaching of reading all over the United States — in all of the schools and in all of the textbooks — is totally wrong, and flies in the face of all logic and common sense.

Flesch, however, does not blame the schools or even the teachers, but instead blames the method of teaching that has been in use since 1927. This "look and say" method relies on memorizing and recognizing words on sight.

In 1930, a "basal reading" series, which incorporates the above method, was released. The books used by American children today for learning to read are basically the same books that were used in the 1930s.

This is extremely unusual given the fact that hundreds of studies have shown the phonics method consistently provides better results. Phonics first teaches the relationship between letters and sounds, only later focusing on reading—the exact opposite of the look and say approach.

The U.S. Department of Education actually recommends the phonics approach, yet many American schools, teachers, and colleges that teach teachers are unwilling to accept this recommendation. ("Grim Illiteracy Statistics Indicate Americans Have a Reading Problem" Education-Portal.com Sep 20, 2007)

Robert Sweet, Jr., President and Co-Founder of "The National Right to Read Foundation" also blame the teaching methods. Per his observations most schools still teach children to read on the way deaf children were taught, by memorizing whole word meanings.

Some parents are trying to solve those problems on their own. There were 1.5 million children that were home schooled in 2007, up 74 % from 1999 when the U.S. Department of Education first started keeping statistics. That makes 2.9 % of all children.

Opponents of home schooling are concerned with poor academic quality, loss of income for public schools, and religious or social extremism, and lack of socialization with others. Maybe there is some truth in this too? Instead of solving the problem the home schooling may be contribute to it.

All of those internal and external for the United States factors are laying a good foundation for all types of **International Scientific Mobility**. Highly educated people from abroad fill the labor market gaps left by dysfunctional education system in America.

Up to 47 % of scientists and engineers in America with PhDs are immigrants according to the 2000 census.

In 2003, of the 21.6 million scientists and engineers in the United States, 16 % (3,352,000) were immigrants. (Kannankutty, Burrelli, 2007: 1)

The majority, 56 % of them were from Asia; almost one of five, 19 % of them were from Europe, and 15 % were born in Central America, the Caribbean and South America.

Immigrants made up a substantial portion of minority scientists and engineers in the United States. About 1.7 million (83 %) of the 2 million Asian scientists and engineers in the United States in 2003 were immigrants. Similarly, 42 % of Native Hawaiian and Other Pacific Islands, 35 % of Hispanic, and 15 % of black scientists and engineers were immigrants. (Kannankutty, Burrelli, 2007: 1)

Social and personal consequences of those changes are profound, long lasting and often are suicidal for repatriates.

Using the **symbolic interactionism** perspective we can take a close look at this process.

Upon arrival immigrants face a deep resocialization. They have to learn a new language, new values, and new skills to survive. Very often from the beginning, things do not go as planned or expected.

The most important factor of success is learning a new language. It is the key to a new culture and happiness. The more you are fluent in communications the easier it is to succeed.

The length and difficulties of this process depend on the mode of immigration. There are at least three of them:

1. **Prearranged mobility** — includes individuals with contract job placements while being at the Homeland;
2. **Educational mobility** — includes professionals, obtaining legal employment in America after completing their education in the United States;
3. **Spontaneous mobility** — pertains to individuals, who had gained their status of employment by opportunities on their own in a new country of residence.

In the case of **Prearranged** Immigration a new incomers face resocialization within their new career requirements and environment. Often they receive guidance and supervision from colleagues.

Although this group of scientific immigration has their own problems, their adaptation will be easier and will take less time.

The level of hardship will depend on how much of differences each individual should overcome: the deeper cultural differences the more complicated adaptation will be. For example scientists from China and Russia will have to work harder to overcome those cultural differences compare to their colleagues from Canada, India, Great Britain or Australia.

It is also depends on how scientists have prepared for immigration. How good their language skills? Can they drive car? How familiar they are with American shopping system? How good is their knowledge of American foods? And the list can go on.

Their sex and gender identities could be essential too. A “Glass Ceiling” events and an “Invisible escalator” phenomenon are the main obstacles for females getting inside the “old boys club”.

Family and friends support systems are very important for success. Social alienation, lost roots is common problem for immigrants.

The most successful mode is the **Educational** mobility, gaining an employment in America after completing an education in U.S. universities with a legal employment.

According to the data collected by National Science Foundation, Division of Science Resources Statistics, Scientists and Engineers Statistical Data System (SESTAT) in 2003 mobility completed through the channel of an education could be count for approximately half of scientists and engineers immigrated to the United States. This includes about two-fifths of immigrant scientists and engineers who earned all of their degrees inside of the USA, and about one-fifth of all scientists and engineers immigrated to the U.S, who earned some degrees abroad and some in the United States. (Kannankutty, Burrelli, 2007: 6)

Those specialists have “know how” not only in the sphere of their expertise, but in social environment and are “street smart” too. Their cultural adaptation is seamless.

The group of **Spontaneous** immigration accounts for about two fifths of all scientists and engineers immigrated to the United States. Representatives of this particular mode of immigration face more complicated problems and issues than others from the first two divisions.

The most suffering comes from their **status inconsistency**. Their high level of education, valuable life and professional experiences contradict their low economic position in a new country. And people usually have a tendency to perceive you by the lowest level of your status. This doesn't make it easier to find job. And very often it is a temporary, without good pay or benefits kind of employment. This group has the largest exposure to phenomenon of **alienation**.

By the definition the “alienation” is a withdrawing or separation of a person or a person's affections from an object or position of former attachment, from the values of one's society and family. (Merriam Webster's on line Dictionary)

The Greatest Sociologist of all times Emile Durkheim in his book *Suicide* (1897) prophesied the increasing scale of this counter socialization phenomenon in industrializing societies. For Durkheim, anomie arises more generally from a mismatch between personal or group standards and wider social norms which produce moral deregulation and an absence of legitimate aspirations. (Durkheim, 1979: 214, 241–257)

Alienated: socially disoriented; “anomic loners musing over their fate”; “we live in an age of rootless alienated people”. (wordnetweb.princeton.edu/perl/webwn)

We are the Nomads, who followed our dreams, aren't we?

Due to complexity of this class of mobility we have to divide it further into four sub-groups:

1) **The first subgroup** in this class of mobility consists of physicians, engineers, physics, and other Doctorate recipients, who are **underemployed** (for example-work as taxi drivers, or as medical assistant, being brain surgeon, or pediatrician) or do **not have any employment**. Without compatible language skills they lived on welfare or fill low paid service sector jobs.

Most of those scientists and professionals are loners, who lives “on their own”, without Diaspora's or family and friends networking and support.

2) **The second subgroup** of the **Spontaneous** mobility consists of PhD recipients in engineering, social science, mathematics. They teach as adjuncts, and **do not have** perspective to obtain a **permanent employment**. They are low paid, without health insurance or other job related benefits.

3) **The third subgroup** is researchers **employed through the grants**. They do not have assurances for the future. But they are enjoying their access to laboratory, equipment, technical support and stimulus interactions with their colleagues.

4) **The fourth subgroup of Spontaneous** immigration consists from **professionals** with good language skills. They also have friends or family network, which they could rely on. But they are **illegal** in the country.

This is most common case within immigrant community of scientists from India. “The engineers and Ph.D.s driving much of the technological innovation in Silicon Valley are overwhelmingly Indian. A growing number of them are here illegally. According to the Department of Homeland Security, Office of Immigration Statistics, there are almost 300,000 illegal Indian immigrants in the United States. Many of them arrived here on H-1B or student visas and overstayed their legal residency in the hope of getting a green card.”(Nowrasteh, 2009) Indian immigrant workers are generally highly skilled and enjoy high incomes. Average Indian-American households have an income 62 % greater than average. The skills, work ethic, and entrepreneurial spirit that make Indian immigrants such a successful group are remarkably constant throughout the community, regardless of legal status.

The social reality is created from numerous interactions of the humans. We are developing ourselves through making impressions and interpreting other people reactions to our actions. The most important of those interactions are profession related.

The gender differences are dissolving in front of our eyes. Now women have to be an active participant in all spheres of the modern life and men more often than before take role of staying at home mothers. If in the last century the parent’s roles were the most respectable ones, now professional positions have taken the lead.

In this context status inconsistency due to lack of occupation has become crucial factor for emotional and financial well being of a person. Crisis of identity could easily push the individual on the brink of life and death.

World Health Organization in their special issue devoted to the World Suicide Prevention Day, from September 10, 2009 had alarmed nations about significance of this problem: “Increasing globalization, ease of international travel, and refugees and asylum seekers from war and disaster has swelled the number of immigrants worldwide.

People who are alienated from their country and culture of origin are vulnerable to various stresses, mental health problems, loneliness and suicidal behavior.

Suicide prevention strategies, tailored to the specific needs of migrant groups, exist in many countries. These programs typically focus on understanding the specific cultural and religious attitudes to mental health and suicide of the migrant group, reasons for migration, and family and social structures.

Interventions include educational and social programs designed to identify stresses, teach coping skills, promote use of preventative health practices, and improve access to health services and encourage socializing.” (Suicide in different cultures. 2009: 4)

It is good to know that a significance of suicide problem for immigrants has recognized and some ways, if not to solve this problem but at least to help to cope with it, have been developed.

From the lenses of the **conflict perspective** approach we can see the international mobility of educated professionals on the three levels:

(Macro) International — as a competition between countries for the best “brains “or a leaderships in science and technology. This could be converted into economic prosperity, advanced military potential, and gold medals in international competitions¹ of the host nations. And the list can go on.

¹ Last Winter Olympics have demonstrated how figure skating medals were worn by sportsmen with coaching and supervision of Immigrants from Russia and other Ex Soviet bloc countries.

(Macro) National — as a competition, that occurred on labor market of a particular country for employment opportunities. That could be beneficial to the “host” country as substitute for all kind of insufficiencies in domestic educational systems. At the same time it could be used by employers to decrease compensation and increase exploitation of so valuable labor.

(Micro) Personal — as an identity conflict due to status inconsistency, that follow the dramatic changes of individual life. The rise of the alienation phenomenon has happened due to rise of instability in their life. And it is often could be followed by catastrophic events such as suicide. Resocialization, when and where it happened in a life course demands a lot of personal energy and hard work to complete. The culture of origin, age, gender, family and friends are some of social factors that contribute to success or to failure of that transition.

A constant growth of intellectual international migration is the social consequence of Globalization. It is the reality of the modern day universe. This process requires a deep resocialization from all individuals involved. And it quite often results in personal identity crisis manifestation.

The analysis proves that the Symbolic interactionism approach would be the most promising in construction and improving crisis prevention programs within foreign origin population.

In conclusion we, as sociologists devoted to explore the social aspects of Science, have to remember and take in consideration: “that free migration of people leaves in its wake much more intense problems than does the free flow of goods and capital.” (Sreenivasan, 2006: 3)

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