

SYSTEMS, STRUCTURES AND AGENTS  
UNDER GLOBALIZATION:  
European and Russian Tendencies

Edited by  
Nina Slanevskaya

St. Petersburg

2008

Copyright © Nina Slanevskaya, 2008  
Copyright © Nina Slanevskaya, 2008, cover

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior permission in writing.

Printed and bound in Russia, St. Petersburg, by Asterion in 2008.  
Asterion  
Box 83  
St. Petersburg, 191015  
Russia

# SYSTEMS, STRUCTURES AND AGENTS UNDER GLOBALIZATION: European and Russian Tendencies

Edited by Nina SLANEVSKAYA

Consists of eleven articles.  
Includes bibliographical references, a list of abbreviations,  
synopsis of the articles, name index, subject index, preface,  
editor's notes, notes on contributors made by Nina Slanevskaya.

Translated from French and Russian into English by Nina Slanevskaya.

Cover design by Vera Fyodorova  
Disk by Nina Slanevskaya  
Typeset by Asterion

ISBN 978-5-94856-505-7

## Key Words

agent, border, cognitive, crime, decision making, deviance, economy, electrical, ethical, Europe, France, globalization, industry, liberalization, management, market, moral, pathological, Poland, privatization, prospective, regionalism, Russia, science, scientific community, self-organization, society, structure, synergistic, system, tendency, uncertainty, welfare state.

## CONTENTS

Abbreviations	iv
Acknowledgements	v
Preface	vi
<i>Globalization, Uncertainty and Decision Making: Cognition Also Matters</i> Bernard CADET	1
<i>Globalization and Synergistic Philosophy of History</i> Vladimir BRANSKY and Svyatoslav POZHARSKY	25
<i>Moral Agency under Globalization</i> Nina SLANEVSKAYA	37
<i>Public Decision Maker's Pathologies and Remedies of a Prospective Approach</i> Ali SMIDA	59
<i>Globalization: What is Going on in Practice and How it is Explained Theoretically</i> Gérard LAFAY	76
<i>Central Europe in the Globalized World of the 21st Century</i> Leon OLSZEWSKI	91
<i>Global Hierarchy and Centralization of the Economy of Russia</i> Dmitry MIROPOLSKY	107
<i>Deviance in Russia under Globalization</i> by Yakov GILINSKIY	128
<i>Russia's Human Resources in Science in the Context of Globalization</i> Nelly DIDENKO, Andrei PETROVSKY	146
<i>Transborder Cooperation in Modern Russia as a Result of Globalization Challenges</i> Nickolay MEZHEVICH	167
<i>The Main Principles and Directions of Reforms in the Electrical Power Industry in Russia and Other Countries of the World</i> Sergei ALEXANDROV	184
Editor's Notes	202
Synopsis of the Articles	208
Notes on Contributors	213
Bibliography	216
Name Index	232
Subject Index	234

# Abbreviations

AI Artificial Intelligence  
AUCS Acceptably Uncertain Cognitive State  
BDM Behavioral Decision Making  
CEC Central European Countries  
CEEC Central and East European Countries  
CEFTA Central European Free Trade Agreement  
CIS Commonwealth of Independent States  
COMECON Council for Mutual Economic Assistance  
DSSM Double Sector Structural Model  
EBRD European Bank for Reconstruction and Development  
EEC European Economic Community  
EU European Union  
FDI Foreign Direct Investment  
GDP Gross Domestic Product  
GENI Global Energy Network Institute  
GLM General Linear Model  
GNP Gross National Product  
GOELRO State Commission for Electrification of Russia  
GPS General Problem Solver  
GRP Gross Regional Product  
GW gigawatts = 1,000 megawatts  
HCF Human Cognitive Function  
HIV Human Immunodeficiency Virus  
IMF International Monetary Fund  
INTAS International Association for the Promotion of Cooperation with Scientists from the New Independent States of the Former Soviet Union  
ISTC International Science and Technology Center  
kV kilovolt  
kWh kilowatt-hours  
MERCOSUR Southern Common Market (in Spanish *Mercado Común del Sur*)  
MRI Magnetic Resonance Imaging  
MW megawatts = 1,000 kilowatts  
NAFTA North American Free Trade Agreement  
NATO North Atlantic Treaty Organization  
OECD Organization for Economic Cooperation and Development  
PDP Parallel Distributed Processing  
PET Positron Emission Tomography  
RAO UES Unified Energy System of Russia  
RAS Russian Academy of Sciences  
RFBR Russian Foundation for Basic Research  
RHF Russian Humanities Foundation  
ROSSTAT Federal Service of State Statistics of Russia  
SAP Structural Adjustment Programme  
SMGP Synergistic Model of Global Progress  
TGC Territorial Generating Company  
USSR Union of Soviet Socialist Republics  
VS Vicarious Strategies  
WGC Wholesale Generating Company  
WTO World Trade Organization

## Acknowledgements

This book has evolved from the engagement of the Russian research group CEDIMES-St.Petersburg in the work of the French international research network of the CEDIMES Institute.

As the organizer of this project, I am thankful to my colleagues of the French and Polish CEDIMES research groups - Leon Olszewski, Gérard Lafay, Ali Smida, Bernard Cadet, Anissa Lardjane and the President of the CEDIMES Institute, Claude Albagli, for being the first who supported the project with their contributions or advice.

I am also thankful to Eduard Tropp, the Permanent Secretary for Science of the Russian Academy of Sciences in St.Petersburg, for encouraging me to start the project and for his recommendations.

Nelly Didenko, the coordinator of the regional section of Euroscience in Russia and a member of the International Euroscience Governing Board, offered helpful suggestions for the organization of the project.

As the translator of the articles into English, I would also like to express my gratitude to David Alcorn, Ian Collings, Charles Mapleston, Ross Morgan, Bradley Payne and David Payne for their patience and great help with the translation work.

The financial support for the first publication of the book came from Boris Berlin, the Director of the St.Petersburg company 'TestSet', high voltage test equipment, and Igor Koval, a member of the research group CEDIMES-St.Petersburg. Their sponsorship allowed us to finish the project and present the book to readers.

*Nina Slanevskaya,*

Editor and translator of the book,

Director of the Russian CEDIMES-St.Petersburg

## Preface

The structure-agency relation is, perhaps, one of the most important theoretical issues showing our concern over the limits of human agency. It is also a fruitful epistemological approach allowing researchers to better understand the interaction between active agents and constraining or enabling structural forces within the systems of human activities. Globalization promotes new types of relations or recurring patterns of behaviour which form new systems superseding the old ones. Such new tendencies need a thorough examination and study.

This collection of articles contributed by the authors from Russia, France and Poland reveals different perspectives and ways of thinking which can be valuable for getting a deeper insight into the processes of globalization. The articles deal with different aspects of social life and present a wide range of problems connected with globalization in Russia, France, Poland and other European countries.

Due to the wide range of analyzed problems the editor supplies the book with a detailed commentary, which can be helpful for non-specialists in a particular research area. Unless the context indicates otherwise, 'he' and 'she' are used throughout the book without any specific implications as to gender.

The book was initiated by the Russian research group CEDIMES-St.Petersburg within the French international research network of the CEDIMES Institute.

# Globalization, Uncertainty and Decision Making: Cognition Also Matters

**Bernard Cadet**

## **Introduction**

The term ‘globalization’ is usually employed to denote a recent trend of standardization and homogenization of economic policies in market economy but it is also connected, though to a lesser degree, with the designation of recent cultural and social practices spreading throughout the world. The term is often applied to various policies (in production, commerce, management, culture, etc) worked out by an organization (usually by a transnational company) which acts in the complex context of economic competition and instability.

The analysis presented in this paper is the study of globalization not at the level of results but at the level of its forms and determinants. This choice is less traditional. In fact, from the outset, globalization was a strategy or a response to the constraints resulting from modifications which affected, to put it more precisely, not so much the existing economic mechanisms but the *context* in which they developed.

The global environment of enterprises or organizations, which have changed not only the scale of their activities but also their nature, represents a worldwide network of widely-circulated information. It is necessary to distinguish two meanings of the term ‘globalization’: the state of being globalized (referring particularly to the global economy) and the act or process of globalizing which denotes the way of working out one’s strategy.<sup>1</sup>

We turn to cognitive globalization to deal with the processing of information as a whole for supporting the activities and survival of an organization or an enterprise. These two meanings of the term ‘globalization’ and the attention drawn to it nowadays justify a thorough consideration of the term ‘globalization’, with special reference to its cognitive meaning which underlies decision making under economic globalization.

While deciding, or, in other words, tending to choose a certain action, we all have often experienced the problem of decision making caused by the level of uncertainty that arises.

A current practice of decision making is to collect information from several sources, to think in terms of systems and organization, and then to globalize all that

---

<sup>1</sup> Merriam-Webster’s On Line Dictionary (<http://www.merriam-webster.com/dictionary/globalization>): *Globalization* (noun; date – 1951) 1) the act or process of globalizing 2) the state of being globalized; *especially*: the development of an increasingly integrated global economy marked especially by free trade, free flow of capital, and the tapping of cheaper foreign markets.

data in order to lessen the risk of mistakes and inappropriate choices. In this paper, my intention is to explore the relationship that exists between uncertainty, decision making and globalization within the framework of cognitive science.

The material of this paper is arranged in four parts. In the first, I analyze various decision making situations. The second part examines the notion of uncertainty and its determinants. In the third part several forms of globalization, which differ greatly in their forms of implementation, are presented and analyzed. The conclusion follows the above-mentioned three parts and suggests some new perspectives.

## **1. Decision making: a complex situation**

### ***1.1. Frequency, diversity and specificity***

Decision making is an activity which frequently occurs – perhaps, several times a day – and often relates to quite different problems. If your son or daughter has a runny nose, should he or she go to school? What mode of transport to use for travelling to a town which is far away? And so on. It can involve current decisions the consequences of which will not be very important in the case of a bad choice. However, other decisions, for example, to have a baby or to change one's job will be clearly more fundamental because the consequences of these decisions will last longer and can change one's life significantly. The economic decisions which are taken by individuals or organizations (enterprises) such as to buy a flat or to adopt a plan of development require a thorough examination of the situation by using a certain number of related elements so as to anticipate any possible changes which may occur in the future.

One of the specific features of the study of decision making concerns situations which in many respects seem to be similar but which turn out to be different, because the acquired knowledge about a certain situation is not applicable to another one, though the latter appears initially to be rather similar. This indicates that there is a high degree of specificity and that the experience acquired under certain conditions is difficult to use for solving similar problems under other conditions at least globally and directly. Every decision depends on the unique context invoking solutions which must always be worked out carefully depending on the particular case. Moreover, temporally different components, such as preparation, reaction and adaptation must be integrated into the choice of action as well (Smida, 2003).

### ***1.2. Structure of the problem of decision-making***

A problem of decision-making is usually considered to be a confrontation between a situation (the actual event and circumstances) and a particular person (the decision maker) engaged in the process of decision making. In the case of a collective decision, the decision maker is a group of people (government, an elected council, etc.) who, *mutatis mutandis*, consider the problems and whose basic information is identical.

According to MacCrimmon (MacCrimmon, 1972: 447) “a decision problem occurs when a decision maker:

- notices a discrepancy between an existing state and a desired state
- has the motivation as well as ...
- the potential to reduce this discrepancy whereby...
- there is more than one possible course of action which may not be immediately available...
- the implementation of a course of action demands an irreversible allocation of his resources and...
- the utilities (of the consequences) associated with each choice-alternative are partly or entirely uncertain”.

### 1.3. *Conceptual and notional indicators*

At the conceptual and notional level of analysis such a definition leads initially to the idea that decision making can be regarded as an individual or collective process: the choice of *one* form of action ( $A_i$ ) in the set of several ( $k$ ) potentially possible actions ( $A_1, \dots, A_k$ ) that are competing and mutually exclusive. To arrive at such a result which signifies the beginning of an action a decision maker performs work which by its nature belongs to the cognitive category. In fact it involves taking information into account by using different means and processes such as perception, memory, attention, language, reasoning, solution of problems, etc.

Decision making itself has been a subject of study largely developed in cognitive terms due to the contribution made originally by Edwards (Edwards, 1954) and resulting in the foundation of a new trend called behavioural decision making (BDM) (Edwards, 1961). Since then two avenues have been open for studying patterns of decision making: one refers to the theoretical principles of a formal nature (Berger 1980), while the other is aimed at understanding the mental operations that occur in reaching a decision (Hogarth, 1980). These options are significantly different, so that it is possible to speak about paradigms in the sense employed by Kuhn (Kuhn, 1970) and by Eysenck and Keane (Eysenck and Keane, 1995) for defining a conceptual framework or school of thought. The first paradigm, used in Economics, refers to the *criterion* of the result aimed for and highlights the importance of the logical operations on the part of a decision maker (from a mathematical point of view). The second, originating in Cognitive Psychology, is *procedural* because its aim is to study appropriate operations for processing information in order to reach a decision.

### 1.4. *Fundamental psychological references*

The general principles that underlie the first models of decision making are old-fashioned but at the same time relatively simple. They are old-fashioned because they were discovered by utilitarians such as Bentham (1748-1832) and John Stuart Mill (1806-1863) during the 18<sup>th</sup> and 19<sup>th</sup> centuries; they were later slightly changed and used by ‘mathematically-oriented’ economists such as Jevons (1835-

1882) and Edgeworth (1845-1926) at the end of the 19<sup>th</sup> century and the beginning of the 20<sup>th</sup> century. Leaving aside the problem highlighted by the Paradox of St.Petersburg,<sup>2</sup> these models are in fact psychologically simple because the choice of action (decision making) is supposed to increase *maximal satisfaction*. As a consequence, this criterion of maximal satisfaction determining choice and behaviour is formulated immediately: it means that one will choose action  $A_i$  among all existing possibilities because that action will provide the decision maker with the most satisfaction. For several decades, this criterion was directly applied; in other words, actions were deemed to be positive if the result led to the largest quantity of advantages and benefits of all kinds. Much later certain situations were formalized in which all possible actions led to displeasure whatever action might be chosen. Under such conditions decision making is based on continuous self-reference to psychological postulates with the inversion of criteria allowing us to choose the action which causes *minimal displeasure*. Thus, the chosen action will be the one which *minimizes* displeasure or losses (for a more detailed explanation, see Miller, 1964).

It is necessary to turn to the research done by Loomes and Sugden (Loomes and Sugden, 1982) and by Bell (Bell, 1982) for obtaining some indication of how to treat the generalized values of ‘displeasure’.

- The first among them is *regret* which has two forms. It is possible according to the first assumption to regret not performing the correct action (the results of which could have been closer to the criterion than those obtained via the action actually carried out): it is a post-regret about the decision related to a non-optimal choice of action. But there is a second possible assumption about the choice which presupposes a feeling of regret experienced by a decision maker about an action not performed at all in the past before the necessity to make a choice has arisen in the present: it is an anticipated regret or pre-regret about a decision influencing the choice of a future action. It is also possible for a decision maker to adhere to an intermediate option in which he will be less engaged and which will bring about less regret, instead of choosing the option the results of which could be estimated to be the best. Any eventual losses will be fragmented and distributed among different possibilities of action according to a strategy that we could call the strategy of prudence or even of fear.

- In the second case emotionally associated states such as deception, disappointment, lack of gain and lack of bitterness were studied according to the same principles (Connolly, Ordoñez et Coughlan, 1997; Gilovitch et Medvec, 1995).

### 1.5. Utilitarianism and cognitivism

From the psychological point of view we call these options utilitarian, postulating that we are in the presence of ‘*homo placens*’, i.e. a decision maker simplified to the extreme as his choices for acting are considered to depend only upon a single value of reference: the experience of maximal personal pleasure.

---

<sup>2</sup> See Editor’s Notes.

This aim, however, is not evaluated in any absolute, definite or blind way, i.e. without taking into account circumstances and implications. Quite the opposite: this is a strategy of *contextual* determination of maximum satisfaction. The decision maker can adjust the level of demands to the conditions existing in the environment.

Thus, the notion of maximal satisfaction is always relative and will be determined by a decision maker for a particular situation. So, consequently, the notion will involve, if not calculation, at least an act of cognitive evaluation. All criticism emphasizing the simple character of utilitarianism has arisen from a confusion between general and particular.

As things stand, the general principle must be treated as a theoretical reference, which is simple; the specific dimension, which is examined in this article, corresponds to the 'implementation' of decision making in a given situation. What is the maximum of satisfaction? It seems clear that the reference to principle in itself is necessary but it is far from being sufficient for explaining behaviour. Behaviour is, in fact, variable, thereby pointing to the importance of the cognitive contribution.

Cognitive acts have two successive stages. The first is the stage of *calculation*, which is meant to determine according to the situation and various available resources, what can be the maximum of satisfaction (or the minimum of displeasure) which, thus, is not a fixed thing a priori. In favourable contexts the maximum of satisfaction will be evaluated to a much higher degree (the choice of maximal gains with all positive results); in unfavourable contexts (when all results are expected to be negative) the target defined will be much more modest and can be limited to the least significant losses.

The second stage is that of defining the *strategy* to be adopted: the target is decided upon, as well as the way and means to be used for achieving that target. Comparisons between individual behaviour and choices demonstrate considerable diversity. In order to reach the same degree of satisfaction, different ways, information and processing are used: we call these Vicarious Strategies (VS).

Thus, on the whole, from the utilitarian initial perspective all the cognitive components concerning globalization relate to the management of the situation.

The determination of an optimal action requires taking into consideration preexisting experience and data which differ depending on the decision maker and the particular situation, according to the person's preferences and referential knowledge. It may happen that the consideration of these elements will lead the decision maker to postpone the search for immediate pleasure, so that other values become more important than immediate pleasure. A decision may also be taken because of obligations or constraints of some sort limiting the possibility of immediate personal satisfaction. In social and technical complexes (industries, big enterprises, transport, etc.) decisions depend on other determinants and the dichotomy pleasure-displeasure is no more than a distant reference. Thus one can see that the interest of researchers shifted progressively from criteria models to

procedure models based on the logic of processing (Bayes' theorem, for example<sup>3</sup>). After remaining obscure for some time, since 1995 such determinants as emotional states and the state of pleasure have been reintroduced as major determinants for behaviour and decision making and constitute at present an important field of research for psychologists (and also economists) on the issue of decision making (Ritov, 2006).

All in all, cognition is more important for human beings than pleasure or economic gains and it is this 'cognition person' who is seen as using these models (Weil-Barais, 1993). In fact obtaining a state of satisfaction implies calculation and the choice of strategies which can only be produced by a highly developed and diversified system engaged in the processing of information.

## 2. Uncertainty: perception and processing

### 2.1. A frequent characteristic

One of the main difficulties which cognizing decision makers come across is that all their considerations of action, including choices, are carried out while having to deal with an irreducible complication to the task at hand: uncertainty. How, in fact, can we achieve sufficient certainty guaranteeing that the preferred action will indeed produce the consequences estimated to be the maximization of pleasure? The more recent observations easily show that the action initially thought of as positive (i.e., as an action potentially increasing pleasure) can in the end turn out to be negative in certain cases (generating displeasure).

For example, we come across complaints about hospitalization which, although necessary for treating an illness, *sometimes* turns out to generate other diseases – yet in the *majority of cases* the decision to hospitalize a patient brings positive results. We can also evoke situations when the action taken to diminish displeasure proves, in some cases, to cause other forms of displeasure. Staying in the domain of health, there are secondary consequences which *some* forms of medication can cause, leading to displeasure for *certain* people.

In similar examples which could be added, the difficulty in decision making reveals an *absence of generalization* and thus a lack of certainty as to the consequences of the action. Any given act chosen in similar circumstances may produce different effects: it may increase the pleasure of well-being or the quality of life (in the majority of cases), but it may also increase displeasure (in some cases). Since it is impossible to work out a completely unambiguous assessment, the job of decision making becomes remarkably complicated due to the introduction of uncertainty.

These very simple examples illustrate the importance of the omnipresence of uncertainty in the process of decision making. There can always be different possible effects, expected results, consequences, circumstances or ways to develop or to be taken by people and systems used for a great number of activities. And every time uncertainty is ready to interfere since it is one of the dimensions which

---

<sup>3</sup> See Editor's Notes.

is *necessarily* integrated into the process of decision making. All predictions, anticipated actions, prospective actions will become attached to the definition of its importance and effects.

It is not an insignificant paradox that decision making has to include uncertainty in order to bring about more certainty in decision making, rather than discarding uncertainty completely. In fact, if we refuse to face up to uncertainty, we will certainly have some unpleasant surprises or failures in the future. The feeling of certainty and overall control of development in the future represents one of the ways of decision making (showing too much self-assurance) which must be challenged, especially when it comes to the choice of an action. Taking uncertainty into account as a part of any analysis of a situation does not reveal an optional choice: it is the main epistemological necessity, not to say a guarantee (about which one is not certain any more) of the quality of the decision.

## *2.2. Different sources of uncertainty*

To begin with, uncertainty in decision making is not a single-level general characteristic, as one could think at first. Three different forms of uncertainty can be clearly differentiated. The first belongs to situations, the second concerns information and the third involves actual circumstances.

To distinguish between them, it would be better to begin by analyzing forms of uncertainty in a situation of risk (Cadet, 2001) taking as an example the risk of climatic pollution connected with industrial accidents (Seveso, 10 July 1976; Bhopal, 3 December 1984; AZF Toulouse, 21 September 2001)<sup>4</sup> or the risk of marine pollution due to hydrocarbon after the shipwreck of several oil-transporting cargo ships (Amoco Cadiz, 1978; Exxon Valdez, 1989; Erika, 1999; Prestige, 2002, for example).

Situations of this kind unfortunately occur from time to time and demonstrate clearly the limits of applied strategies of choice if the notion of system is neglected. These situations in decision making represent an archetypical case when for a very short period of time it is necessary to manage an almost unknown system where numerous variables and numerous constraints exist, and to consider a great number of uncertainties in order to choose the modes of actions (interventions) which can reduce, as much as possible, obviously dramatic consequences for the environment and living species including human beings.

---

<sup>4</sup> Seveso: a dense vapour cloud containing tetrachlorodibenzoparadioxin was released from a reactor at a chemical plant in Seveso, Italy, and spread widely over a large territory affecting animals and vegetation. In 1982, the EU Directive 82/501/EEC, the so-called Seveso Directive, was adopted; it aimed at preventing and controlling such accidents.

Bhopal: an explosion at a poorly-maintained pesticide plant (India) released 40 tons of methyl isocyanate gas killing more than 3,800 people in a densely populated zone.

AZF: there was an explosion of stockpiles of ammonium nitrate at the fertilizer factory 'Azote de France' in Toulouse in 2001. Though classified as a Seveso type, the catastrophe resulted in 30 deaths among the staff, many people were injured and the material damage to the city of Toulouse was enormous.

The first uncertainty is *structural*: the identification of the situation which was created by an accident. When can the situation be considered as abnormal or damaging? During those first minutes which are very important for the ultimate management of a crisis one often thinks that it is some unexpected happening or dysfunctioning rather than a catastrophe (see for example, the management of the Erika and Prestige<sup>5</sup> catastrophes). Initially the situation is insufficiently characterized; it is the final development which allows the best identification and diagnosis of the event. Uncertainty about the real nature of the situation arises owing to the information that follows on, but, unfortunately, it takes too long to obtain the necessary information; in the meantime, the system starts evolving according to its own dynamics which is no longer controllable or salvageable.

The second category of uncertainty is *informational*: this involves the processing of information and the use of signs for identifying the structure. The question which arises here is the following: what deduced elements of information about the situation can be used as indicators? The majority that one has at one's disposal are no more than probabilities. With some rare exceptions, the signs do provide information, so they must not be neglected but these signs do not provide *complete* information resulting in certainty, thus, they cannot be considered as defining indicators.

In varying proportions the same sign seen on the 'surface' ( $x_i$ ) is to be used for identifying the type of the situation existing 'in depth' (being essential for the situation  $\theta_j$ ). A visible sign can present itself in the same way even though the underlying situation is different ( $x_i$  indicates either  $\theta_a$ , or  $\theta_b$ ). So we can say that such signs do not have only one meaning: they are polysemous. They are also fallible indicators, as Hammond puts it (2000). The act (decision) is constructed gradually, beginning with a mixture of information and uncertainty and *generalizing* the data on the basis of fallible and multiple indicators. This type of act frequently occurs and illustrates another typical case: an act of a patient who consults a doctor.

The signs looked for by a doctor ( $x_i$ ) in order to establish a diagnosis ( $\theta$ ) and make a decision ( $A$ ) (therapeutic prescription) are connected with uncertainty. They do not have only one meaning, with the exception of a few cases (so-called pathognomonic signs). The same sign (fever, for example) can be present in clinical cases of different natures: this is an example of informational uncertainty which requires collecting *several* signs in order to reach an appropriate diagnosis.

The third category of uncertainty resides in the evaluation of consequences. How are they imagined in the beginning and what are the numerous factual results

---

<sup>5</sup> Erika (12 December 1999): the Erika, an oil tanker, sank off the coast of France and 37,000 tonnes of fuel polluted 400 km of shores around Brittany (France).

Prestige (19 November 2002): The Prestige, an oil tanker, sank off the Galician coast (Spain) causing a large oil spill. The spill polluted thousands of kilometers of coastline. The decision taken by the Spanish government for managing the crisis amplified the effect of pollution which affected three countries: Portugal, Spain and France. The Head of the Spanish government had eventually to admit the mistakes made and apologize.

and major permanent interactions? For example, maritime pollution with hydrocarbon (consequences) resulting from a shipwreck depends partly on the tonnage of cargo, but the consequences can be noticeably increased or decreased due to the nature of the fuel transported, the accessibility for ships, meteorological conditions, tide, geographical configuration, topology of the sea-coast, etc. How can all these sources of information be generalized under the pressure of events in order to take appropriate measures?

### *2.3. Difficulties of quantification*

It is important for all decision makers to know the different forms and levels of uncertainty connected with quantifiers (formal option) or their evaluation (cognitive option).

#### *2.3.1. Formal option*

The reference which is generally used for the quantification of uncertainty consists in translating it into mathematical probability. The numerical value of  $p$ ,  $0 < p < 1$ , must be such as to comply with three principles (Kolmorov's axioms). Uncertainty connected with the appearance of the described 'event' will find itself determined by reference to the preliminary observations relative to the appearance of the event itself ('favourable' case:  $n$ ) developing during the sequence of observations carried out  $N$  times.

The probability appears here in the form known as 'frequent' (most known) determining the value of the relation  $n/N$ . The higher the numerical value (close to 1), the greater the certainty (thus uncertainty is weaker) with regard to the occurrence of the event involved. This method is generally used by technicians, forecasters, experts in industrial, technological (meteorological) and medical sectors for dealing with concrete situations.

This choice and the uncertainty underlying it expressed in numerical form requires some remarks. First of all I would observe that, unlike the person experiencing the event, the person evaluating it adopts an 'exterior' position in which he limits himself to recording observations without interfering in the situation that produces what is observed; this kind of validation of the probability is called 'objective'.

I would like also to draw attention to the fact that the numerical expression of probability enables a decrease in overall and 'diffuse' uncertainty only by locating uncertainty on the quantitative scale. This positioning allows referring to previous events, and it is the consideration of all that has passed before that makes possible any inferences about the future. This measure presupposes implicitly that the situation to be evaluated is exactly the same as those which have previously occurred. If on the contrary the previous situation shows a great degree of specificity the decrease of uncertainty will be minimal and prediction difficult.

Finally, I would point out that the epistemological choice of a numerical sign (the value of  $p$ ) reveals a state of knowledge that is difficult to formulate because information and uncertainty, doubt and knowledge are mixed in various proportions.

Such a conception of probability proves to be especially helpful when applied to systematic studies with repeated observations and application of statistical methods, as in planned situations with scientific or technological recordings.

### 2.3.2. *Cognitive option*

It is interesting to establish a correlation between formalized steps, issues of scientific thought and actual behaviour while evaluating the degree of uncertainty. We all, including researchers who are experts in the field of decision making, use different approaches.

If we are choosing a place to spend a holiday, hoping that we will have a pleasant time there, we do not usually use formalized mathematical measures. In any given concrete situation we call upon cognitive functions: searching for information, mobilizing our knowledge, focusing our perception, drawing our attention to the problem, recalling in memory, investigating, considering all that we have and then use ‘reasoning’ based on our knowledge in order to produce an act of choice. This also means the reduction of uncertainty but is based on cognitive operations in which the decision maker is deeply involved in research and the processing of information.

Thanks to this kind of cognitive work, it becomes possible to formulate a numerical evaluation of probability called in this case ‘subjective’ (carefully assigning to this qualification its epistemological meaning which signifies ‘suited only to one subject’). The reference to this subjective probability regarding decision making was put forward by Savage (Savage, 1954), then by all specialists in statistics who belong to the Bayesian trend and for whom it constitutes a fundamental reference. The observation of certain rules, namely, the condition of coherence (De Finetti, 1972), allowed them to validate the subjective reading which is carried out also on the scale [0-1], but this is due more to respect for tradition than to intrinsic necessity.

Perhaps, these operations do not give a decision maker a numerically more precise result but a more global perception of his position. This is what we call Acceptably Uncertain Cognitive State (AUCS) identified according to several features.

The AUCS is an epistemological approach which is used for carrying out the work of gathering and processing information after which a decision maker feels introspectively that his uncertainty has on the whole decreased significantly. The state of management of the situation which has now been achieved appears sufficient for enabling a choice to be made, now that uncertainty, even if not removed completely, has been reduced. The decision will be taken under diminished uncertainty, which is reduced to a level compatible with the act of choice. In situations like these, with which we have to deal every day, cognitive measures are more preferable to measures consisting in referring to a numerically expressed probability. Perhaps, the difficulty of cognition in using a numerical probability justifies this preference and explains the recorded fact of this preference.

### 2.3.3. *The difficulties in using probability*

The notion of probability raises serious difficulties in evaluation and in its use in concrete situations. A great deal of experimental research has demonstrated that fundamental axioms are frequently broken or ignored and that a number of factors completely disconnected from the statistical notion of probability (presentation, the effect of context, forms of observation, etc.) intervened noticeably in the evaluations made (von Winterfelt et Edwards, 1986).

Moreover, on account of its narrowness, the interval [0-1] is hardly favourable for quantifications which show a high degree of discrimination and sensitivity, but to our surprise the experimental results demonstrate that the modes of rendering uncertainty which seem a priori mathematically more complex – such as the odds on horses and the logarithms of these odds – are used spontaneously in horse betting and other forms of gambling (Griffith, 1949; Wise, 1970; von Winterfelt et Edwards, 1986). To these initial difficulties of quantification it would be appropriate to add difficulties appearing in real situations. I shall give only two examples. The first is the tendency to give a higher result than 1 when assigned probabilities are added to the possibilities concerning the same event. The second, well known as the ‘conjunction fallacy’, is demonstrated by Tversky and Kahneman (Tversky and Kahneman, 1983) in Linda’s case.

It can be expressed as follows:

*Linda is 31 years old, single, outspoken and very bright. She majored in philosophy. As a student, she was deeply concerned with issues of discrimination and social justice and also participated in anti-nuclear demonstrations.*

What is more likely?

1. Linda is a bank teller
2. Linda is a teller and is active in the feminist movement.

Contrary to the formal rules of mathematical calculation, 85% of subjects interrogated expressed the opinion that 2 is more probable than 1. The examples of this type are many: all agree that the notion of probability when it is defined mathematically is ‘cognitively’ difficult to use by those who are not specialists. Not only do the individuals or groups concerned tend to avoid using this reference but they also tend to breach the axioms on which the very notion is based when they start using this reference and feel constrained by their logical consequences. Therefore, we have to turn to other forms of reduction of uncertainty in order to understand the diversity of strategies leading to Acceptably Uncertain Cognitive State (AUCS).

## **3. Globalization: agents, structures and systems**

When uncertainty arises in some situations putting an end to an act of choice is a natural tendency of the mind in order to conceive strategies for reducing uncertainty. Conceptually, this act is clearly defined since we are supposed to

move from a state of initial uncertainty to AUCS. The operational means applied are based on vicarious strategies (VS) which carry out an act of globalization consisting in integrating various sources of information within decision making. But this is done according to models that are too different for the epistemological principles to be clearly defined.

### *3.1. Definitions and theoretical approach*

The term ‘globalization’ came into use in the USA for describing a somewhat ancient phenomenon. Since then, the term has become widely used in economy and management to designate processes of globalization affecting all sectors of an industrial enterprise, such as conception, engineering, production, commerce, research work, finances, marketing, management, etc. Globalization is likely to be studied according to different points of view, depending on the discipline at issue in the study of globalization. Economics and management are the fields most involved. Many authors emphasize that a semantic distinction between globalization and ‘mondialisation’ (the latter refers mostly to the macro economic level of international trade) is peculiar to the French language since in English only one term – globalization – is used to indicate the process of convergence and its results. After highlighting the changing (‘Protean’) character of this notion, Boyer (Boyer, 2007) has recourse to other definitions and conceptual extension during a relatively short period.

The more recent definitions emphasize the emergence of a globalizing economy in which national economies are decomposed and then re-articulated within the system of transactions and processes operating directly at the international level. The movement and dynamism of fusion and separation are interesting to study because they enable us to realize that globalization contributes to the construction of the ‘system’. It possesses simple and complex elements, organization and architecture on the basis of which interactions and adjustments exist. Dimitrova (Dimitrova, 2007) emphasizes the importance of the links uniting the local and global. She also uses studies on the relationship between parts and whole, as exemplified in the Psychology of Form (*Gestalt* psychology<sup>6</sup>) which affirm the primacy of the whole over its constituent parts. It is equally important to note that globalization is an emerging phenomenon. Thus, an effective strategy has to be worked out by decision makers in order to respond to the powerful constraints of processing.

These constraints are numerous and urgent: decisions must be taken in complex situations the characteristics of which are intermingled and in which the interactions carry a lot of variables that are continually evolving (for example, investment decisions in the financial market) and make for significant positive or negative consequences. I would say that under such circumstances a decision maker tries to provide himself with guarantees and the possibility of knowing the situation better in order to process overall data acquisition by bringing together different variables connected with the situation. Thus, the consideration of

---

<sup>6</sup> See Editor’s Notes.

something as a whole is not the measure which appears *ex nihilo*. The diffusion corresponds to the profound changes which international trade has undergone; it is important to use a cognitive explanation which is a basic feature of processing information so that we can work out decisions adapted to the examination of complex situations. Globalization is not a given mechanism imposed on us but rather an act of adaptation and response on our part.

The theoretical approach which is adopted in this article is not for the moment widely used. The idea is to explore the cognitive aspect of globalization and the possible benefits it could provide for decision making. That is why I focus on the study of processing information, with the intention of contributing to the use of globalization as an operational concept. The main argument consists in postulating that to globalize information is to combat uncertainty by achieving Acceptably Uncertain Cognitive State (AUCS). The examination of studies, in particular in the methodological field, allows us at once to distinguish various modalities of generalizing.

### 3.2. Additive Globalization

When one has several ( $n$ ) indicators (or several variables or signs) connected with the same entity  $E$ , it is advisable to use the first form of globalization for assessing (e.g. present or future situation, a candidate, a state of a system, etc); this is simply the addition of  $n$ -values of signs in order to obtain the total  $T$  characterizing this entity, say  $T_E$ . It is a simple strategy of addition where one considers the total  $T_E$  as involving less uncertainty than each indicator separately. This strategy is more clearly presented if we use a coefficient ( $\alpha$ ), keeping in mind the fact that some signs are very good indicators ( $\alpha$  is high) while others are only of average quality ( $\alpha$  is weaker). Thus, we have:  $T_E = \alpha_1x_1 + \alpha_2x_2 + \dots + \alpha_nx_n$ . This could be applied, for example, to examinations at universities (in France, at least, when the assessment of a candidate  $T$  will be determined by taking as a total his marks  $x$  weighted by coefficients  $\alpha$  obtained in  $n$  subjects). The decision of the examination board (success or failure) is determined by an overall mark  $T_E$ . This additive strategy is one of the simplest, and due to its simplicity it is more often used. Other arithmetic rules could serve as a reference to totalization, as has been shown in the functional theory of cognition by Anderson (Anderson, 1996). Studies in *integration* of information relate specifically to the moment when all the data has been collected and evaluated and when it becomes necessary to ‘integrate’ (i.e. to globalize) all this information in order to obtain a preliminary overall judgement before making a decision. The experiments carried out by Anderson (Anderson, 1996) show that procedures of integration of signs vary. Sometimes, they appear to observe elaborate arithmetic rules (strategies of weighted average, a multiplying model, etc).

### 3.3 Correlational globalization (linear)

The option which consists in collecting elements of information for evaluation of the situation is also used in other types of paradigms, for example, linear

correlation. Let us suppose that a decision maker is to evaluate an entity in its totality ( $S$ ) (an event, a situation, an opportunity, etc) and that to do it he has some information or indication of the values  $x$  ( $x_1, \dots, x_n$ ) which include, at the same time, information and uncertainty (see Figure 1).

The  $n$  signs ( $x_1, \dots, x_n$ ), characterizing  $S$  represent points of observation which are at the same time distinct and similar and which, if united, will enable  $S$  to be specified. The conceptions worked out by Brunswik (Brunswik, 1955) and known by the name of the Lens Model were developed in other research where these conceptions became the object of study in the framework of the theory of social judgment (Brehmer et Joyce, 1988), thus furthering our understanding of the acts of cognitive globalization. They allow us to model all types of situations aiming at evaluation or diagnosis by means of networks of correlations existing between different signs.

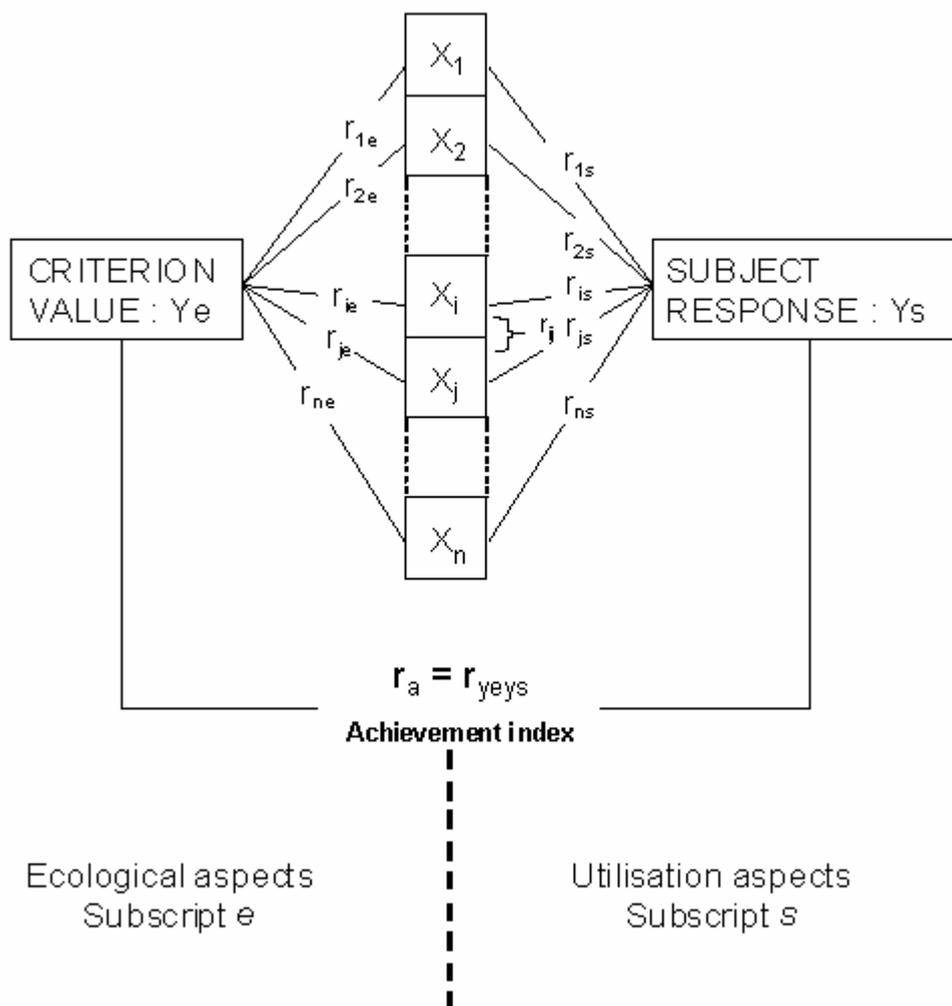


Figure 1. Simplified representation of the Lens Model

Actually, it is necessary to know the overall value  $Y_e$  (criterion value) characterizing the entity  $S$  at a given moment. This could be the state of an enterprise or an individual (illness for example, for which signs  $x$  will be symptoms). In all circumstances, the model implies that the entity  $S$  is a *reality* in the external world and that  $Y_e$  denotes a state or an ‘equilibrium’ structure influenced by active forces. The influence and overall result  $Y_e$  which are existing facts in the natural milieu are represented in the section on the left of the Lens Model called *ecology* and noted by the symbol  $e$ . The task of the decision maker is to construct a representation or an image as precise as possible of this reality; the operational mode in the section on the right in the diagramme is called correspondingly *utilization* and noted by the symbol  $s$ .

To sum up, on the left there is the ‘reality’ ( $e$ ) and on the right there is a representation which the decision maker constructs ( $s$ ).

How does the evaluation work? It reflects the passing from the diversity of signs  $x$  to the unique value which finally characterizes the entity under consideration. It deals with the act of globalization and the use of networks of correlations existing among the signs. The values  $x$  called proximal variables (cues) are, *de facto*, connected with what emanates and underlies the entity itself ( $S$ ) and this connection is expressed numerically. All these signs are in correlation with one another ( $r_{ij}$ ) and the criterion value  $Y_e$  ( $r_{1e} \dots r_{ne}$ ) called distal value. The task of a decision maker is to know  $Y_e$  from the decision maker’s point of view (to know the real state of the illness before prescribing a course of treatment).

The way in which different indicators are used, either underestimated or overestimated, ( $r_{1e} \dots r_{ne}$ ) leads to the ‘response’ that is a distal value of the use  $Y_s$  which is to some extent an image of the  $Y_e$  that has been constructed.

This act needs commenting upon.

- The correlations used are generally linear which makes them simple and multiple. These correlations are the basis on which the act of cognitive globalization is made, allowing the  $x$  indicators to move towards the values taken as a whole  $Y$ .
- The  $x$  indicators can have various values. A ‘good’ sign will be an increased correlation (it will characterize  $S$  better), a sign less relevant will correspond to a weaker correlation. After combining them in the same configuration or after ‘globalizing’, the  $n$  signs provide the undoubted advantage for knowledge thanks to the reference to convergence of information as opposed to isolated indicators.
- The correctness of the decision depends, of course, on the precision with which different real correlations of an ecological section  $e$  are effectively used in an appropriate manner by the decision-maker in a given situation (the section of use  $s$ ). Cognitively the signs are generally used by decision makers in a sub-optimal way that to some extent highlights the difference between the sections on the left and those on the right. Certain important signs are then regarded as unimportant, while other, less important, signs are treated as important; this results in an increase in the distance between  $Y_s$  and  $Y_e$

- The correctness of the model is validated by the proximity which exists between  $Y_e$  and  $Y_s$ . It is expressed by achieving sign ( $r_a$ ), which denotes the final correlation existing between distal values. So it is the degree of the connection between  $Y_e$  and  $Y_s$ , i.e. between reality and its representation, which will be used for validating the construction.
- The complementary indications specifying the significance and utility of certain statistical indices in the case of linear prediction can be found in Slovic and Lichtenstein (Lichtenstein, 1973), Hammond, McClelland, Mumpower (Hammond, McClelland, Mumpower, 1980), Cooksey (Cooksey, 1996).

This type of globalization occurs in medical diagnoses and in technological activity. A physician will collect clinical signs or laboratory indicators concerning the patient until he assembles a coherent set of associated (correlated) signs which will permit him to make a diagnosis – that is to identify the patient’s ‘underlying’ state  $S$ , with which all these signs are connected, originating from the pattern made by  $n$  signs. In the same way, in a complex industrial process, an engineer who is responsible for production mechanisms has to foresee the indicators of proper functioning or dysfunctioning in order to take appropriate steps. In the narrower meaning of the term, it is necessary to learn to ‘read’ – it would be more correct to say to ‘decipher’ – the network of correlations in order to draw significant information from it, especially on the matter of risk assessment (Cadet, 1995).

These modes of evaluation are now also used in psychometrics and the question often discussed in this domain is that of how to evaluate a subject (entity  $S$ ) with regard to  $n$  tests each providing a mark  $x$ . The calculation of the coefficient of multiple correlation  $R$  (integrated value) provides the best possible value for characterizing the person (Ley, 1972) because it is this value which to a great extent reduces uncertainty through the convergence of  $x$ -indicators.

### 3.4. Globalization in networks

The quasi-natural extension of correlational globalization demonstrates the importance of stable links between constituent parts in the network in the final processing of categories of information necessary for constructing behaviour. The network is a specific functional pattern composed of modules (or units) connected by paths (or routes); it thus has a spatial organization. In all initial ‘networks’, the modules were located in linear fashion like successive stages following each other. This type of location is typical of Shannon and Weaver’s (Shannon and Weaver, 1949) theory of Information based on the model of the telephone line with a chain of processing stages (emission, coding, transmission, decoding and reception).

The first machines that simulated cognitive process (‘Logic Theorist’ by Newell, Shaw and Simon, 1957<sup>7</sup>) already made use of the notion of a network and mode of organization; these were later to acquire increasing importance, as we shall see. More recently, studies of human cognitive functions (HCF), from the more basic (perception, memory) to the more elaborate (language, reasoning, decision), have

---

<sup>7</sup> See Editor’s Notes.

contributed to the advancement of the idea of organization in terms of a network consisting of units connected to each other and interacting with each other. Seeing an organization in the form of a *network* was later confirmed by two sets of recorded facts: experiments demonstrating normal functioning where each HCF can be visualized with the help of imagery technique such as PET (Positron Emission Tomography) or MRI (Magnetic Resonance Imaging); and the study of the forms of pathological functioning in which the failure of one element or the unit leads to the complete dysfunctioning of HCF involved (Parkin, 1996).

I shall mention only one example, that of Marr's (Marr, 1982) conception which laid the ground for a great number of subsequent studies showing that the reference to a network is fundamental in the processing of visual information. The structure of a network, the existence of units and paths that connect these units, the role of regulating structures (responsible for feedback and central regulation) are invoked for explaining both normal functioning and normal functioning with some deficiencies, for example, the change in cognitive blindness (Rensink, 2002), and also the pathologies of different forms of visual agnosia (Parkin, 1996), or dyslexia (Wright and Groner, 1993).

The generalization of the reference to networks concerning facts about numerous cognitive functions is connected with the emergence of a paradigm (in the sense of a school of thought) called *Connectionism*.

That term reminds us of the importance assigned to the flow of information that circulates between specialized units linked to each other by paths transmitting neuron impulses and/or between certain units and the external world. Thus each function belongs to the organized complex entity as regards its cognitive architecture capable of processing information which is either permanent or stochastic. This latter category is particularly important because it facilitates matters considerably by including prospective activities (future organization), prognosis (development, for example) and prediction (results). The adoption of this functionalist perspective cannot but raise some debates and the classic response is to illustrate connectionism by reference to McClelland and Rumelhart's (McClelland and Rumelhart, 1986) studies and to that group of researchers who rely on the notion of Parallel Distributed Processing (PDP). The PDP is a model which conceives of knowledge as resulting from the activity of a network where there are many coexisting forms of links connecting these patterns and allowing them to be simultaneously activated.

The connectionist model PDP has general properties which are worth mentioning. The interconnected units, which we can compare with agents, provide, in general, rather simple and clearly defined functions: for example, identifying sound, shape, relief, etc. None of these taken in isolation can represent the behaviour of the whole. Each represents a specialized part. Thus, it is the connection of data and the coordination of actions on the acquisition of which effective behaviour eventually depends; this, in turn, leads to the fulfillment of the assigned objectives. When a single unit, or pathway, or controlling element or a central executor proves to be deficient, so that the expected consequences cannot be attained, the system starts dysfunctioning and the behaviour does not lead to the

assigned aim. In neuropathological psychology the problem can lie in the difficulty of processing one specific category of information (verbal, spatial, graphic, memory traces, etc.) because of the failure of the unit specializing in it. But there are also more general problems which are called a ‘trouble of strategy’ (Mazeau, 1997), in which the planning of an action is responsible for the failure to organize a sequence.

In non-pathological contexts, such failures also take place, but they last for a short period of time. This implies that in this case of decision making one or several important characteristics have been neglected. Thus, with failures, accidents or catastrophes, it is possible to demonstrate a deficiency in the ‘human factor’ highlighted in some categories. In the first category, there are all kinds of imprecision connected with the fact that one or more elements of information have not been taken into consideration: there is, therefore, an information deficit. In the second category, all errors committed refer to the nature of the situation involved; they show that the decision maker thought that he was in a certain type of a situation whereas in reality he was in another one: this is a deficit in identification. Errors of diagnosis illustrate this type of confusion, leading to incorrect choices of action. The third category deals with the construction of cognitive maps or mental representations inappropriate to the situation involved.

Initially constructed for transcribing spatial representations, these cognitive maps are meant for use in written or verbal descriptions (Taylor et B. Tversky, 1992) and are sometimes called maps with texts. These maps play an important role in mental representation because they enable everyone to create a virtual reality that is especially helpful in processing information. We could say that the correctness of any chosen action depends directly on the precision and complexity of that representation. The mistake which is most often made is that of acting on the basis of simplified constructions and schemata<sup>8</sup> already used, even though the actual situation is new and complex. Connectionist globalization can be defined by some key concepts such as specialization of parts, existence of networks, dynamic aspects (communication established inside the system and with the environment) – in other words, things that make us treat the given behaviour as that of a whole.

### *3.5. Globalization and artificial intelligence (AI)*

Clearly formulated definitions allow us to envisage modelization as an act of description and validation of the connectionist approach: it is artificial intelligence (AI) which demonstrates the advantages that result from these conceptions. To put matters briefly, artificial intelligence is aimed at constructing machines capable of realization of performances that are superior to machines made by humans. The English mathematician Turing is considered to be the first to have significantly contributed to the development of artificial intelligence by creating a machine during World War II. This author imagined a ‘test’ designed to find out if this

---

<sup>8</sup> See Editor’s Notes.

machine had intellect.<sup>9</sup> Much later Newell and Simon (Newell and Simon, 1963) completed an improved General Problem Solver (GPS) project which could be seen as a system for producing ‘intelligent’ actions in numerous tasks.

One of the most elaborate models of AI is that of identifying patterns that followed on from the construction of the ‘classifying machine’ called the *Perceptron* by Rosenblatt (Rosenblatt, 1962). The principle of this appliance is simple: a flow of information coming from the environment enters the system in a form of a pattern (an input). The system processes it in the network and produces a general unique response (output) categorizing the pattern. This is, therefore, a decision making action. Since the 1960s various refined forms of the Perceptron have been constructed but its fundamental principles remain unchanged.

Generally speaking, a Perceptron is a transcription of the notion of a multilayer network (multilayer Perceptron) into artificial intelligence, directly inspired by the connectionist model PDP (Parallel Distributed Processing)

The simplest Perceptron is a system composed of three layers of units (‘the cells’) as shown in Figure 2.

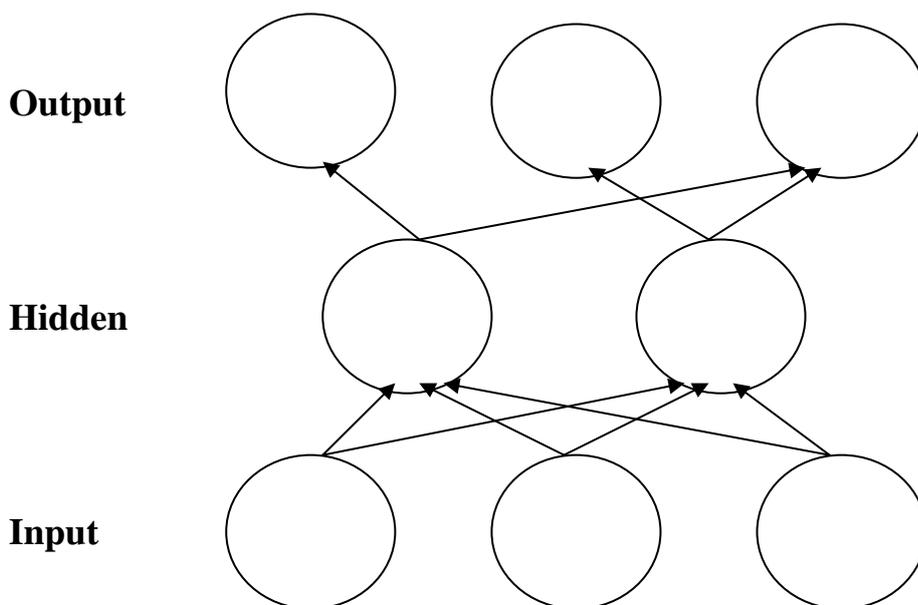


Figure 2. A multi-layer Perceptron

- The first layer (input) is composed of external units which are the captors; the analogy is to a human being with sensory receptors.
- The second layer, that of the so-called hidden units, is responsible for giving meaning by interpreting messages coming from the external layer. These hidden units detect the characteristics (features) of information patterns that enter the

---

<sup>9</sup> Turing’s test: if a machine can carry on a conversation (over a teletype) that is indistinguishable from a conversation with a human being, then that machine can be called ‘intelligent’.

system, identify them and work out a response. Cognitive functions in human beings correspond to these hidden intermediate units.

- The third layer (output) corresponds to the executors: they transcribe the 'response'. Taking into account the complexity of the situations involved and their specificity, the term 'behaviour', which reflects an elaborate construction, should be preferred to the term 'response' which evokes the kind of more elementary reaction studied by behaviourists.

In addition, the structures in the units and layers have arrows, which are important elements of Figure 2. They represent the connections (paths) that link units belonging to different layers. These connections are characterized by numerous combinations and a great diversity of potential pathways. Under these conditions, the structural references (layers and paths) are the supportive material (hardware) of functional aspects (selection and processing of information).

This *network* architecture is particularly interesting for analysis, and this for several reasons.

It illustrates the mechanism that can process complex operations capable of working out differences with a great degree of precision. This is not because the units are in themselves sophisticated – indeed, they may be rather simple; it is due to the possibility of forcing information to circulate along very different paths and processing data according to differentiated procedures. Globalization of the whole set of information that comes out of the system (in the choice of actions, for example) is a carefully worked out result based on processing. It becomes possible due to the existence of the system connecting various operations, modes of organization and architecture, playing the role of determinants.

The difference in performance between old Perceptrons and their more modern equivalents is due to differences in architecture: it is obvious that the addition of a supplementary layer, even though it may be rather simple, significantly increases processing capacity and improves the handling of uncertainty and complexity. That improvement does not require a common measure of input because a wide field of interactions and re-combinations remains open.

Given that the first Perceptrons processed only linear relations, this limitation, perhaps, made people think that the system had only limited capacities (Minsky et Paper, 1969). But that in fact was not at all the case.

The multilayer Perceptron devised by Rumelhart, Hinton and Williams (Rumelhart, Hinton and Williams, 1986) marked the beginning of the success of neuromimetic networks capable of evolving and processing non-linear relations owing to the system of retroactive management of 'errors' called backpropagation (i.e. the backwards propagation of errors). When the network commits an error in decision output (the executive layer), that error goes back into the hidden layer so that a better adjustment will later be possible. Error often results from a mistaken determination of the importance of information in a given context – an error of equilibrium. The correction will take place at the level of a hidden layer by changing the 'weight' attached to the connection between the 'units' involved, in

other words, by facilitating the internal links or by making them more difficult. Having enhanced its database, the system will perform better when it next has to.

I would say one thing about the analogy between the Perceptron and the nervous system (NS) that is highlighted by constructors. Each unit can be viewed as a neuron which is in contact with other neurons while transmitting an impulse and receiving information (input). It is estimated that the neuron system has one thousand million neurons and that each of them can be connected with about ten thousand other neurons receiving many thousands of neural impulses. Other estimations emphasize that the NS has  $2 \cdot 10^{15}$  synapses creating a network the size of which is not stable. If all these connections were equiprobable the potential networks would be infinite. But that is not in fact the case. Certain pathways that are more used than others will be preferentially mobilized for processing specific tasks.

The research undertaken by Hebb from 1949 onwards and the law named after him reveal the fact that neurons which are often activated together have a tendency to re-use this association and end up by creating a network on the basis of previous experience. In such networks, therefore, we find preferred pathways and a functional architecture that provides real support to the system and agents of globalization as being more important than anatomic architecture.

#### **4. Discussion and conclusion**

How then can the cognitive theoretical approach improve our knowledge of globalization? Apart from the evidence that 'cognitive' globalization presents as a strategy consisting in collecting information for the creation of an Acceptably Uncertain Cognitive State that is necessary for a decision maker to make a choice of one action among several competing and mutually exclusive actions, the cognitive approach is proof of the existence of diversified strategies. To participate in 'economic' globalization means, first of all, to *choose a strategy* that offers protection against risks or potential losses inherent in all decisions. Hence, 'economic' globalization appears to resemble a general operational mode corresponding to the natural action of the human mind when it is faced with uncertainty.

At the theoretical level cognitive globalization does not represent an identifiable object of study in cognitive psychology. For instance, there is no theory of cognitive globalization similar to theories of perception or memory or language, even if we use it in constructing our daily behaviour. However, as soon as the cognitive function is involved in the study of the collection and processing of information, it is possible to extend the idea to the explanation of the process of globalization. This apparent contradiction is due to the fact that the cognitive data on this issue lie at a level that is more differential than generalized. In essence, the studies undertaken by cognitive scientists attempt to demonstrate the evidence of the existence of several strategies. In carrying out the same processes of globalization, there are at the same time several ways that depend on the study of cognitive functions. Differentiating factors specify each form of globalization and

can be found both in the organization of systems (architectures) and explicit rules (algorithms) which permit activation of different constituent parts and the production of an elaborate result at the output level of the system.

Using Aesope's terms, we can ask the question whether cognitive globalization is both good and bad for us, whether it is at the same time a facilitation and an obstacle? In dealing with this issue, it is necessary to distinguish two forms of cognitive globalization. We reach Type 1 globalization (G1) in an ascending manner (called bottom-up). First we collect elementary information and then we 'integrate' data from the most elementary into the most complicated, thus creating a whole – this is therefore a 'from the bottom –up' way of globalization: forms or agents first, then functional structures and finally a system or an organization.

Type 2 globalization (G2) operates in a descending manner (called top-down) by making references to the already existing cognitive globalization based on a previous experience of globalization. In other words, an already existing globalization from a previous experience is applied to a new experience with the aim of globalizing this new situation. Required to evaluate situation *B*, the decision maker will refer to the situation *A* previously known to him, with its consequences. The subsequent decision will be constructed by relating *B* (unknown) to *A* (known).

This strategy has been called 'anchorage-adjustment' by Tversky and Kahneman (Tversky and Kahneman, 1974). The unknown situation *B* is linked or anchored to the known situation *A*, then this anchored situation *B* is slightly adjusted to take account of its specific nature. This measure used for globalization is regarded as heuristic, because it is an act of rapid evaluation based on simplified and minimal cognitive resources allowing a decision maker to obtain a global result for *B*. This act has typical advantages and disadvantages for an approach based on analogy: rapidity and economy, on the one hand, bias and errors, on the other hand. This form of 'reasoning', where evaluation is a transfer of knowledge from one field to another, or, to put it more simply, from one situation to another situation, stirs up deep suspicion. Fodor (Fodor, 1983) claims that the more globalized the cognitive process is the less we know anything about the subject; an example of this is reasoning by analogy, which has a very high level of globalization. Hogarth (1980) also emphasizes the imprecision, biases and errors which are associated with the use of analogy as a mode of evaluation.

In choosing how best to look upon an individual objective (evaluation, prediction) or an organizational one (business plan, joint venture, development projects, investment, estimate), it becomes important to distinguish these two forms of globalization, to promote a bottom-up globalization (G1) and to avoid as much as possible the top-down globalization (G2). It may seem paradoxical (at least to those who judge by appearances), but the best globalization for evaluation and taking decisions is not the one which comes immediately to one's mind while viewing something globally; it is more important to think about the architecture and know the processes involved. A knowledgeable decision maker will begin by using globalization for positive consequences which will lead him to prefer the

bottom-up globalization which he regards as ‘internal’ rather than the top-down globalization seen as ‘external’.

One of the important theoretical questions is the choice of strategy. What information is necessary to make one strategy preferable to all the others? First of all, the initial identification of the type of problem or situation before any further considerations are initiated. This identification is based on representations accumulated in memory in the form of ‘scripts’ or ‘schemata’ or ‘thematic organization points’ (TOP) (Alba, Hascher, 1983). The meanings of these terms are inter-related and clearly denote prototypical situations (for example, going to market, giving a lecture). One of the quickest operations in decision making consists precisely in having recourse to such scripts for identifying the *type* of the situation that we are dealing with. That identification accomplished, the decision maker comes back to the global knowledge connected with it, then tries to discover specific information for the moment, case or circumstances, which could help him in deciding the particular choice to be made. Globalization involves a synthesis between general and particular, past and present in order to process the actual situation as best as one can.

From a methodological point of view, globalization can be regarded as a topic of great interest because it concerns the correctness of the actual use of instruments for evaluation and prediction. In the most recent methodological formalizations, statistical techniques based on the common characteristic, i.e. linear, are used. The General Linear Model (GLM) is prevalent in contemporary studies even for very elaborate networks such as the central nervous system (Friston, 2005). In the diversity of statistical models, the GLM is the main technique for prediction; it provides the researcher with simple and multiple correlations, methods of analysis of variance, factorial analysis and structural analysis.

However, if we consider globalization to be the result of the activation of a network or a system, or as a unity of constituent parts – human beings, economic contexts and enterprises can be looked at in this way (Cadet, 2006) – these techniques prove largely to be non-operational.

In fact, they take into account only particular linear relations between units artificially chosen or isolated from the overall context; this results in representations that are too simplified for dealing with the management of information and taking appropriate decisions. The first necessary condition for obtaining these units is epistemological: it consists firstly in considering the network, or the system, as a whole rather than ‘extracted’ variables regarded as being representative. Such an option leads to a change of methodological paradigm. It leads in fact to abandoning the General Linear Model (GLM), considered to be artificial and reductive, and to adopting complex paradigms. Some very revealing characteristics and properties excluded de facto from GLM can be employed again. Here are some of them: dynamic systems of learning and developing (in enterprises and sports teams), conceptions relative to auto-organization, autopoiesis, activation (Collins, Loftus, 1975), emerging structures, multi-agent systems with procedures of decentralized decision making. Finally, the

very important role played by interactions within units and levels, as well as between units and levels, is worth mentioning here.

Ignored in the paradigms of GLM analysis, they manifest their effect in real situations sometimes unexpectedly and powerfully, as we see in the a posteriori analysis of technological catastrophes. Thus, the choice of setting, the collection of data, the ability to read and use this information, working out the principle of management are the challenges that face every researcher in the study of complex systems. The project of 'understanding' how globalization develops is not limited, as we can see, to managing empirically its manifestations or to constructing appropriate models. More fundamentally, the core issue of understanding globalization is the elaboration of a new theoretical framework which could be possible only after a kind of 'Copernicus's revolution' took place in epistemology. This implies that we should give prevalence to a new theoretical approach in studying the relationship between the facts of actual life and the formalisms based on them; in the meantime, judging from some very recent events, such theoretical issues continue to be neglected.

# Globalization and Synergistic Philosophy of History

Vladimir BRANSKY  
Svyatoslav POZHARSKY

## Introduction

Globalization is an important modern phenomenon which has penetrated different spheres of our life (economic, political, cultural, etc). Its complex character is difficult to understand without seeking an explanation in the philosophy of history. Globalization is *a special type of social self-organization*, so its analysis is better made on the basis of the general theory of social self-organization, which is social synergetics (Haken, 1999; Nazaretyan, 2001; Sagatovsky, 2003; Yegorov, 2002; Mosiongnik, 2003; Knyazeva, Kurdyumov, 2005, etc). Hence, for a successful analysis of globalization we need a synergistic philosophy of history (synergistic historicism). Theory of social self-organization studies general laws of the relationship between order and chaos, the tendency of overcoming the opposition of chaos and order, and it gives a clue to the explanation of an arising tendency of humankind to create a *global unity* on the basis of ever-growing local diversity in the last quarter of the 20<sup>th</sup> century. The synergistic theory of globalization gives not only an explanation to the observed process of globalization, but also can predict the development of this process in the future. Although globalization as a phenomenon is connected with such well-known processes as integration (amalgamation of social structures into structures of a more complicated type), modernization (the use and spread of advanced technologies), glocalization (the spread of some local institutions, ideals and values on a planetary scale)<sup>1</sup>, nevertheless it cannot be reduced to these processes only.

Globalization as a form of integration (it is necessary to distinguish different aspects of integration) is characterized by the following main terms and features: integration of social *institutions* (establishments, organizations); integration of *functions* of these institutions and *knowledge* necessary for their functioning; integration of *ideals* (value references) defining motives for the functioning of the institutions; integration of *norms* of behaviour according to the ideals; and integration of *sets of values* created by such activities based on the corresponding ideals (value references, ideological outlook). Among the main features of globalization we want to emphasize the following: *comprehensiveness* (many aspects) showing the tendency to integration in three main spheres of human activities (economic, political and socio-cultural) (Utkin, 2002; Chumakov, 2005;

---

<sup>1</sup> The term 'glocalization' is the blending of the terms 'globalization' and 'localization'. It generally means the interaction of local and global forces: 'the global' becomes local and 'the local' becomes global (ed.).

Yakovets, 2003; Panarin, 2003; Friedman, 2000; Robertson, 1992, etc), *mass participation* ('democratization'), i.e. involvement in the process and a tendency to participate actively in this process by all social layers; *planetary* character ('global'), i.e. the tendency of all the above-mentioned integration processes to cover the whole world; *spontaneity* (self-organization, spontaneous character), i.e. the lack of the external sources functioning as a special organizer; *chaotic* character of the process, i.e. no orderly arrangement of integration processes and the presence of occasional fluctuations.

## 1. Synergistic Philosophy of History

The synergistic philosophy of history<sup>2</sup> consists of three parts, which answer three main questions: *how*, in general, self-organization takes place (phenomenology of self-organization), *why* it takes place (essenceology of self-organization) and *where* it eventually leads (eschatology of self-organization, from the Greek word 'eschatos' meaning 'last' and 'logy' meaning 'the study of').

As the basic concept of social synergetics is a 'dissipative structure'<sup>3</sup>, the *phenomenology* of self-organization can be reduced to two alternative processes: hierarchization and de-hierarchization.

Both of these processes are connected with such important elements of self-organization as bifurcation<sup>4</sup> and attractors. Due to bifurcation the processes of hierarchization and de-hierarchization can evolve differently using different channels (scenarios). This results in self-organization acquiring a 'branchy' (non-linear) character. In addition, owing to the presence of attractors, self-organization has a 'wavy' form (it oscillates between marginal states of opposite types: between the so-called 'simple' and 'strange' attractors<sup>5</sup>).

The driving force of this process is social selection. Its main factors are: '*thesaurus*' (the multitude of new possible bifurcation structures resulting from the transition of quantitative changes into qualitative ones in the depths of a currently existing structure); '*detector*' (inner interaction of the original system); '*selector*' (the principle of stability, on the basis of which the detector chooses such a new structure from the thesaurus which is the most stable in a given environment).

---

<sup>2</sup> There is a narrow and wide explanation of synergetics, but all agree that the subject of it is the study of the laws of self-organization. Self-organization can take place both in a human society and in nature. Social self-organization includes the conscious attitude of human beings to the process. The narrow understanding of synergetics is the birth of order out of chaos. When we deal with social self-organization we have a series of movements from chaos to order. The process of hierarchization and de-hierarchization is very important in this case (see more about synergetics in Editor's Notes).

<sup>3</sup> The dissipative structure is a structure which can exist only if there is a constant exchange of some substance, energy and information between the structure and environment (in a general case).

<sup>4</sup> Bifurcation means the splitting of a main body into two parts. This term can also be applied to the sets of diverging directions as a result of splitting.

<sup>5</sup> A simple attractor is the end state of hierarchization of a social structure (maximal order); a strange attractor is the end state of de-hierarchization (maximal chaos).

Thus, *essenceology* of self-organization is, in fact, a synergistic theory of social selection.

In order to have a complete picture of social self-organization it is necessary to answer the question whether the alternation of hierarchization and de-hierarchization is simply a circulation of the same processes resulting in nothing new (in other words, whether we are always confined within the same ‘fussy fuss’), or in the alteration of above-mentioned processes there is some *qualitatively new tendency* leading us outside the limits of that circulation. It is the answer to this question which constitutes the content of *eschatology* of self-organization.

The analysis of the alternation of order and chaos shows that this process essentially differs from the alternation of different types of order or different types of chaos (considered separately from each other). Unlike alternation of ‘pure’ order and ‘pure’ chaos, the alternation of forms of order and chaos necessarily brings something new (in a general case). The thing is that bifurcation and strange attractors are inevitably connected with the appearance of new possible structures. That is why the circulation of social chaos and social order generally turns out to be unstable. Prigogine<sup>6</sup> considered that the loss of freedom by mankind didn’t seem to be the best way out of a new bifurcation but, on the other hand, a world in which everything was decided by chance would hardly satisfy anyone. Thus, the question is where to find a compromise and whether another trajectory is possible. Prigogine comes to the conclusion that nobody can give an exact answer if to consider mankind from the position of the theory of processes far from equilibrium<sup>7</sup>, but it is possible to say, for sure, that globalization and network revolution lead not only *to greater connectedness between people but to the increased role of an individual in the historic process* (Prigogine, 2000: 73).

It is not difficult to notice that Prigogine speaks about two opposite tendencies in the development of modern mankind: a stable growth of dependency of each individual from the surrounding planetary socium is accompanied by a stable growth of dependency of the planetary socium from every individual living in it. The first tendency is the attraction to total programming (i.e. to the cult of order, or totalitarianism), the second is the attraction to total permissiveness (i.e. to the cult of chaos, or anarchism).

Thus, a simple alternation of social order and chaos is not only interrupted by the existence of some domineering tendency, but these *two* tendencies (order and chaos) lead in *opposite directions* (in fact, excluding each other). A similar contradictory situation to which a social self-organization leads has a special name ‘Prigogine’s paradox’ (Bransky, Pozharsky, 2004: 330-332). So, eschatology of self-organization faces a very important problem: how can Prigogine’s paradox be overcome?

The clue to the solution is in the concept *superselection*, which implies the selection of the very factors of selection (i.e. the search for new thesauruses, detectors and selectors). The key element is that there is a feedback between the

---

<sup>6</sup> See Editor’s Notes.

<sup>7</sup> synergetics

results of selection and its factors. New bifurcations and new attractors form new possibilities permitting the appearance of any number of complicated and puzzling structures (in other words, essentially modifying thesaurus for selection). Thus, a new game is born which has its own rules for selection (new selectors changing the old ones). New value references, i.e. social ideals, perform the role of these rules. With their help, quite new structures arise from this renewed thesaurus and are realized (become a reality).

From all what was said above, it becomes clear that the modification of selection rules (principles of stability in the corresponding external environment) creates the basis for the functioning of the law of self-organization of social ideals, because in socium the role of a selector for the selection is played by corresponding social ideals. In fact evolution (modification) of selectors turns out to be equivalent to the evolution (modification) of ideals<sup>8</sup>.

It is well-known that evolution of ideals presupposes their interaction ('struggle'), and in the course of struggle we can observe a tendency of discarding features typical for individual ideals, leaving only the core ideals common to all humanity (independent from individual modifications).

The formation of a *common* ideal (absolute) out of the individual (relative) ideals in the course of struggle excludes not only the cult of order (totalitarian ideal) and the cult of chaos (anarchist ideal), but also incomplete harmony (distorting shift in one or the other direction) of chaos and order (freedom and responsibility in liberal ideals of different kind, for example).

The most important normative criterion for this ideal is the requirement of *complete harmony of freedom and responsibility* (chaos and order).

Thus, in the course of self-organization we can observe a tendency of formation and realization of a common ideal which realizes a complete synthesis of chaos and order. It means that the law of superselection makes their alternation unstable and leads to the gradual 'dying out' of this process. In the end a *complete synthesis* of chaos and order, which is expressed in the subjective form of the absolute ideal, receives an *objective implementation* in the form of a special dissipative structure.

A social system implementing such synthesis turns out to be a maximal result of social self-organization, stable not only to some local but also to a global chaos of the environment. It can be considered as 'the ceiling of the complexity of a system', i.e. the limit of cultural development of mankind capable to neutralize and compensate any unfavourable impacts of the environment. Such a system can be considered as a global attractor, or *superattractor*, to which all local attractors tend to go directly or indirectly.

However, though it is possible to approach the superattractor, it is not possible to reach it in any historic time. It means that history must have an end, but the way to it is *infinite*.

The cause of such paradox of 'reaching what is not possible to reach' (Knyazeva, Kurdyumov, 2005) is in the following: every time, while realizing

---

<sup>8</sup> It means that the law of self-organization of social ideals is a necessary consequence of the law of superselection.

some individual ideals, we overcome some social contradictions<sup>9</sup>, but the process itself gives birth to new contradictions which demand new ideals for the solution. So, through this potentially infinite chain of individual ideals, a common human ideal is understood as some point which mathematicians call ‘asymptote’<sup>10</sup> and which plays a role of a ‘star showing the way’ for human beings.

Hence, Prigogine’s paradox can be solved in the superattractor. As the superattractor is an objective synthesis of chaos and order where the distinction between these objective states disappears, it is not surprising that two opposite trends (trying to attain either an absolute order or an absolute chaos) are realized in parallel.

It is evident that without admitting that there is a superattractor, Prigogine’s paradox cannot be solved in principle. Moreover, the concept ‘superattractor’ not only helps to solve Prigogine’s paradox, but also predicts the possibility of the creation of *absolute values* (not subject to the ‘vanity of being’).

As a consequence the history of mankind acquires a deep sense without going out of the framework of the scientific approach. The infinite approach to the superattractor is not deficient at all, but the advantage of a synergistic perception of the world both from the philosophical point of view and from worldly wisdom implies that the ‘meaning of history’ (hence, the meaning of an individual life and death) is qualitatively unlimited and can never be lost.

## 2. Synergistic Model of Global Progress (SMGP)

After briefly outlining the subject of the study in the synergistic philosophy of history related to our paper, we can use it now for the analysis of such a unique phenomenon as globalization. Under consideration now is the question of human aspiration for global unity which revealed itself at the turn of the 20<sup>th</sup>-21<sup>st</sup> centuries. On the basis of the conception of synergistic historicism described earlier in this paper, a *Synergistic Model of Global Progress (SMGP)* can be constructed (Figure 1).

In Figure 1 the objective tendency towards global self-organization is depicted: the alternation of states of social order and chaos gradually ceases to exist as a result of overcoming the opposition between order and chaos (in their synthesis) in the superattractor *C*. This tendency is objective not in the sense that it does not depend on human actions, but that it is the result of spontaneous interactions between these actions. Figure 1 shows how the chains of bifurcations and local attractors step by step push mankind to the superattractor *C*. The spirality of movement illustrates the asymptotic character of this process, i.e. on the one hand, the presence of a special point *C* (‘singularity’<sup>11</sup>), but, on the other hand, the potential infinite number of approaches to *C*; the wavy line denotes the equilibrium

---

<sup>9</sup> Idealization of reality is, in fact, the liberation of it from objective contradictions (in the meaning of interconnectedness of opposite qualities or interaction of counteracting factors).

<sup>10</sup> A linear asymptote is a straight line that a graphed curve becomes closer and closer but never becomes identical to (ed.).

<sup>11</sup> ‘Singularity’ near which a function exhibits extreme behavior.

of the global social system between simple and strange attractors (alternation of processes of hierarchization and de-hierarchization), simplification and complication of these structures; the ‘branchiness’ denotes the nonlinear character of the movement connected with bifurcations of different types (coincident and not coincident with attractors).

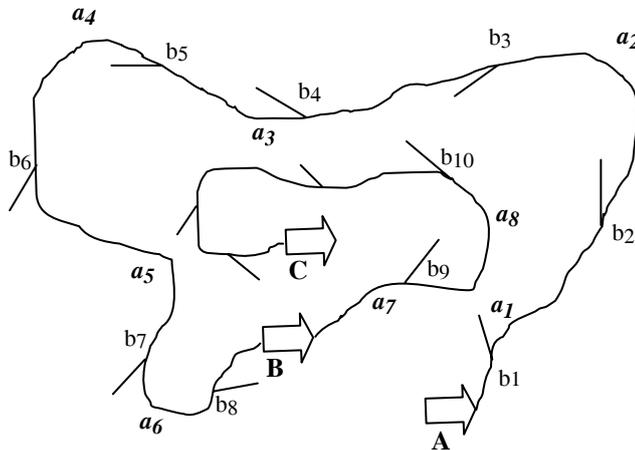


Figure 1. The Synergistic Model of Global Progress.

The wavy line from A to B – is an observed history - ‘the past’;  
the length from B to C – is an unobservable history – ‘the future’;  
the state of human socium B – ‘the present’;  
the state of human socium C – the supperattractor;

a1, a3, a5, a7 – strange attractors (chaos) on the bottom of the wave;

a2, a4, a6, a8 – simple attractors (order) on the top of the wave;

b – bifurcation, the line goes from the spiral (wavy line) and symbolizes a set of possible developments, one of them goes to the attractor.

Point A denotes conditionally the beginning of a social history known to us; point B is the modern state of global socium; point C is its end state (superattractor). Bifurcation (‘branchy’ line) and attractors (‘wavy’ line) in Figure 1 show visually where the diversity of dissipative structures comes from which characterizes self-organization. A gradual approach of the trajectory of self-organization to the point C (spirality and singularity) also demonstrates visually the movement of global social variety to the unity.

So, the synergistic philosophy of history reveals the essence of globalization in such a way: globalization is observed because there is a movement of socium to the superattractor with movement to the unity taking place on the basis of a dynamic diversity but not a static one. The Synergistic Model of Global Progress

'addresses' us with the slogan: "Go ahead to the global unity on the basis of *potentially infinite* (not finite) local diversity!"

### 3. Characteristic features of a globalization process

Synergistic approach to globalization allows us to predict a number of characteristic features of the process which have not been observed clearly yet, but which are almost certain to have to be dealt with in the future. We want to draw your attention to the most important ones in our opinion.

Globalization will reveal itself first of all in the tendency towards *integration* of social structures (institutions, enterprises), social ideals (value references) and social values based on such ideals at the planetary scale and associated with the information revolution in communication technologies (computerization and the Internet). This integration will acquire a synergistic character, i.e. to be expressed in *hierarchization* of dissipative structures leading to the formation of upper dissipative structures of higher order ('networkization') built on the top of the previous ones.

We should discern, first of all, *one-dimensional* globalization from *comprehensive* globalization. One-dimensional globalization takes place only in one sphere of social life (for example, economic). Comprehensive globalization covers all spheres of activities – economic, political, socio-cultural, etc. Though at the turn of the 20<sup>th</sup>-21<sup>st</sup> centuries globalization is predominately economic, there is a tendency of its penetration into political and socio-cultural spheres.

Also, *homogeneous* (not mixed) globalization should not be confused with *heterogeneous* (mixed) globalization. The former implies integration of dissipative structures in the framework of one social sphere (for example, only economic structures or only political structures), the second is connected with the integration of structures belonging to different spheres (for example, economic and political, economic and socio-cultural, political and socio-cultural and so on). Thus, in the future, mankind will inevitable come across the tendency of mixed dissipative structures of very different types and the formations of 'network' structures on the basis of them at the upper level, perhaps, of some unusual and extravagant character.

There are also two types of globalization related to stability criterion: *stable and unstable*. We come across unstable globalization very often in our life. The specificity of stable globalization evidently consists in the economic foundation of economic globalization connected with new information technologies. As such this type of globalization (especially as seen in the formation of a lot of transnational corporations – TNC) is the consequence of economic self-organization. But this type of globalization is only possible on the basis of interaction between *economic order* (planning, business plans of companies) and *economic chaos* (market, market competition, which is taken into account in business plans). Hence we have a *synergistic* character of the market economy, and hence a counterposing or an absolutization of both a planned economy and a market economy is inadmissible

because both market fundamentalism and planning fundamentalism are inconsistent.

In the synergistic philosophy of history, it is especially important to distinguish *relative and absolute* globalization. According to the phenomenological alternation of processes of hierarchization and de-hierarchization of dissipative structures, planetary globalization will one day reach the unstable state leading to *de-globalization* (disintegration of global structures into many new local structures). But this new social chaos (combining elements of economic, political and socio-cultural elements) will show the tendency to a new globalization due to the creative function of chaos. Due to the superselection alongside with instability of any new global order, the instability in the alternation of order and chaos itself will appear. Consequently, there will again be the movement to the superattractor, i.e. to such a state where any de-globalization becomes impossible. Hence the absolute globalization is not a continuous process but it is implemented according to the method of successive approximations.

Perhaps, the most important expectation about the future of globalization is that due to the inevitability of the co-evolution of an individual (a man) and socium (mankind), the globalization of mankind will lead to the *globalization of an individual* ('the problem of a supraman'). The concept of a superattractor implies such meanings as 'suprahumanity' and a 'supraman'. The law of self-organization of social ideals implies evolution of not only the ideals of socium but those of an individual. In other words, in the course of social self-organization we deal not only with people but also with their ideals what kind of people they must be. So the ideal of a totalitarian man emerges (who meekly follows all state's orders), the ideal of an anarchist (who, on the contrary, rebels against all state's orders), the ideal of a liberal man (who supports a certain balance of freedom and responsibility) and so on.

In the course of the evolution of different individual ideals of a man, the tendency appears to lead to the gradual formation and realization of ideals common to all humanity ('absolute') reflecting in itself the common human basis in any man – the common spiritual basis for all human generations (past, present and future). Synergistic conception of a supraman implies the *conformity* of a real man formed at the end of history *with an ideal of a man common to all* (absolute). In other words, in reality, a supraman is the embodiment of the common human ideal of a human being which is, in its turn, the product of the whole world history. Only in such a man it is possible to achieve an absolute harmony of freedom responsibility, rights and duties<sup>12</sup>.

Globalization of socium can produce a different impact upon the change of human nature in a short term and in a long term. In the short term, globalization of socium can make the nature of man worse instead of improving it. It can produce a degrading effect upon the personality (which can be observed in a number of

---

<sup>12</sup> The concept of a 'supraman' in the synergistic interpretation is possible to trace to Feuerbach, Nietzsche, and Solovyov. However, their interpretations of a 'superman' are essentially different from ours.

regions and layers of our society now). Hence we distinguish a socially *responsible globalization* and socially *irresponsible globalization*.

So the practical question is how to make a globalization process humanistic (and how to avoid an alternative scenario)? An analysis of this question from the synergistic position demands that we first answer what a historical meaning of economic growth so much spoken about by governments is.

There are two approaches to the solution of this problem. In the first the demand in economic growth is connected with the need of survival of humanity, in the second with the growth of material well-being for as many layers of society as possible. Evidently without economic growth it is not possible to guarantee both 'survival' and 'well-being'. However, if synergistic philosophy is applied, the 'meaning of history' is not limited in any way by the solution of narrow tasks: it is the movement to the superattractor, in other words, it is connected with the formation of a supraman and suprahumanity (i.e. *suprahumanization*<sup>13</sup>). It means that for the definition of the meaning of history the decisive role belongs to spiritual values but not utilitarian ones. The creation of utilitarian values is not the aim, it is a means for providing the necessary conditions for a spiritual creativity connected with the perfection of the human nature itself.

Thus, the only justification for economic growth (which can be discovered only in the long term perspective) is the need to *finance suprahumanization*. Hence, globalization must be channeled into a humanistic direction, it is necessary to spend the greater part of global macroeconomic profits received by the world community on suprahumanization in the long term perspective. The synergistic philosophy of history connects globalization of humanity with the solution of an eschatological problem: whether social history has an end or whether there cannot be any end at all. The answer is paradoxical but not illogical – there is an end but the movement to it is infinite.

#### **4. A synergistic scenario of globalization**

What is a practical significance of the synergistic theory of globalization? It gives us a hint what to do next. The clue to the solution of social problems under globalization lies in changing human behaviour and values. Hence, two other questions will follow: what transformation of a man is optimal and how to implement it in practice? The choice out of many possible ones can be determined with the help of the synergistic theory of globalization. We must decide which modification is the shortest way to the realization of the ideal common to all human beings in the image of a supraman (suprahumanization). In this image the full ('absolute') harmony of rights and duties (freedom and responsibilities) is achieved which implies unconditionally the priority of spiritual values over material ones. Only a man, who is neither totalitarian nor anarchic man, inspired by the idea of the harmony between freedom and responsibility and who treasures

---

<sup>13</sup> Suprahumanization is such a process of social self-organization the result of which is the formation of a new man who is the absolute human ideal of a man.

spiritual values more than material ones can become an important preliminary stage in the formation of a supraman.

But the transformation of a man presupposes the formation of *many supramen* around. So the question is how to transform the consciousness of so many people? Though the natural way for the change of ideals and the transformation of a man is the change of generations, for the formation of a *supraman* it is not enough: a new system of education, up-bringing and empathy (the reform of humanistic activities) must be created. It will also demand the reform of social institutions which is not possible without political and economic reforms. The transformation of a man demands his new attitude to nature and the use of its resources.

Thus, the transformation of a man is not possible without the transformation of his surrounding world. However, not all transformations of the world are connected with the positive transformation of a man ('positive' means leading him to a supraman); it is possible that some transformations of the world can produce a negative effect upon a man (degradation in scientific, ethical, aesthetical and other fields). The question arises: what is the form of a society which can realize on a mass scale the ideal of a *supraman*? What must be the social structure which will be able to combine a high stability of socium with high 'quality' of all its individual representatives?

It is the society in the economy of which the socio-cultural services prevail. Only they, thanks to their specificity, can provide the stable improvement of 'qualities' of an individual. These services are connected mainly with education, up-bringing and empathy. The 'quality' of man depends, first of all, on the quality and quantity (volume) of his knowledge and skills which he uses or develops. Secondly, it depends on his world outlook, social ideals and moral norms based on his world outlook and the ability in implementing the ideals. Thirdly, it depends not only on his rational but also emotional development (i.e. the degree of empathy towards other people expressed directly or experienced indirectly through art). The institutions which provide services for the development of such qualities are educational, scientific, medical, ideological<sup>14</sup>, sport and art institutions.

Researchers often use such terms as post-industrial, network, informational society and so on, which is misleading. Socium is a dissipative structure and such a structure cannot exist without a regular exchange with its surroundings (nature and society) via substance and energy in any case. But such an exchange is not possible in a modern society without industrial machinery. Thus the 'post-industrial' society contrary to 'pre-industrial' society, *cannot exist, in principle*, according to synergistic theory. The same can be said about information society: any society is an information dissipative structure, it cannot exist without an exchange of information.

The best name for a society with the predominance of socio-cultural services will be *post-utilitarian society*. It best expresses the most important feature of this society: the shift from the financing of utilitarian ideals to the financing of the realization of spiritual ideals (the production of spiritual values).

---

<sup>14</sup> We also include philosophical and religious organizations into ideological category.

Thus, in the solution of the problem of how to create a supraman (in our specific meaning) and post-utilitarian society, a socio-cultural shift should be subsidized from global macro-economic profits. Different social forces will suggest their different variants how to do it.

Nowadays the struggle between globalists and anti-globalists is in fact the struggle for the optimal way of globalization (Panarin, 2003). Everyone supports globalization on the basis of one's own social ideals and is against globalization on the basis of the other's ideals. One wants to transfer his local ideals to the global level. In this case it is especially important for societies to use such a selector as a 'principle of minimization of violence in the dialogue'.

## Conclusion

Speaking about the optimal choice of the scenario for globalization, the question of the possibility of governing the process naturally arises. But globalization is a special type of social self-organization, and self-organization and governance are conflicting processes.

If we consider this paradox within the framework of synergistic historicism, this paradox will turn out to be illusory. According to the synergistic theory of social choice the moving force of self-organization is a social selection (the interaction of a thesaurus, detector and selector). The role of a detector is usually played by the inner interaction of elements of the system (the 'balance of power' determining the direction of the change of the whole system).

So, the contradiction between self-organization and governance will take place until the governor acts as an external element towards the self-organizing system. When he gets inside the self-organizing system the situation changes radically. Now, his activity is an important element in a process of self-organization. The governor becomes a part of a detector and begins to participate actively in the inner interaction between elements of the system influencing the selection of possible bifurcational scenarios of the evolving system (owing to his influence upon the balance of power). But the governance is the choice of one out of many possible decisions. Influencing the selection of possible scenarios (resulting from bifurcation) and in the (preferable for him) direction the former external observer becomes a *participant of governance of self-organizing system*.

Thus it is possible to govern globalization if a governor is inside the self-organizing global system and becomes a participant in the inner interaction which takes place in the system ('interiorization' of governance). However, the governance of a globalization process within both a short and long term has its own peculiarities. In a short term, a governor can provoke new bifurcations and new acts of selection, consequently, he can produce an impact upon the direction of a globalization process. As far as a long period of time is concerned he can only speed up or slow down the process in a certain direction, but he cannot change the direction itself. It may happen that in the long-term perspective there is a great probability of 'getting into the detector' (interference in the inner interaction) by other governors influencing the inner interaction not only in various directions but

in various *opposite* directions. As a result, a globalizing process can be unstable during a short period of time, but becomes stable during a long period of time due to intercompensating fluctuations and counterfluctuations caused by different governors.

Thus globalization can be better understood within the framework of the synergistic philosophy of history. The complete unity is not possible to reach in the limited (finite) diversity. Such unity can be reached only in the potentially infinite diversity and it cannot be static: it is always dynamic both horizontally (enlargement of variants on the qualitatively same level) and vertically (appearance of new variants on the qualitatively higher level). Any globalization leads to a new de-globalization, and new de-globalization leads, in its turn, to a new globalization. However this process must have an end and the movement to the end is asymptotic (infinite approximation).

# Moral Agency under Globalization

Nina SLANEVSKAYA

## Introduction

All our life experience shows that we are not indifferent to moral issues although some may deny being worried about morality and some can break moral principles. But in any case we do know that there is something wrong with our moral behaviour when we act immorally, and we try to present it to others as something much better conceived or morally good. It does not matter which argument we use to justify such behaviour: national identity, ethnic tradition, religious ritual, the economic system, political reasons or personal circumstances. Such an attempt at embellishing our actions can be expected from us because rationalization is typical for human beings as is selfishness. But the problem is that the moral basis in human beings is also unavoidable, and it is the question of time and the development of events which can delay the solution of morally wrong behaviour or decisions made at the individual level or social level (social - old sacred rituals of killing people as a sacrifice, or slavery, or Stalin's Gulag<sup>1</sup>; individual – Dostoevsky's Raskolnikov<sup>2</sup>, Shakespeare's Lady Macbeth, etc.).

Cognitive neuroscience, which has been experiencing an upsurge recently and which has accumulated much information about human cognitive functioning, allows researchers to put forward the theory of the 'moral brain' and genetically inherited moral thinking due to the evolutionary process of a human being as a social being. Although in Russia this move to moral studies in neuroscience is a rather recent phenomenon (Zernova, 2007) in other western countries it has resulted in the publications of many books and articles on the brain and moral thinking (Szasz, 1996; Gazzaniga, 2005; Tancredi, 2005; Freeman, 2005, etc.). Such studies in cognitive neuroscience promote the theories of ethical realism, such as ethical intuitionism and ethical naturalism.

Specialized bodies of thought and knowledge are influenced by the social and cultural contexts in which they are produced and develop to satisfy the needs of the

---

<sup>1</sup> Gulag is the Russian acronym for The Chief Administration of Corrective Labour Camps and Colonies (see Editor's Notes).

<sup>2</sup> Raskolnikov is the main character of Dostoevsky's (1821-1881) novel *Crime and Punishment* which focuses on the mental anguish and moral dilemmas of Raskolnikov, an impoverished St.Petersburg ex-student who decided to kill a hated, unscrupulous old-woman money-lender, thus solving two problems – improving his financial state and ridding the world of an evil worthless parasite. However, he had to kill her half-sister as well which he didn't plan. After that Raskolnikov begins to behave as though he wishes to betray himself, so that the detective Porfiry begins to suspect him purely on psychological grounds. In the end Raskolnikov goes to the police himself to confess.

society. I believe that the increased interest in cognitive neuroscience is due to globalization processes.

Globalization processes which have been more and more pronounced in informational, economic, cultural, and political spheres demand a ‘common denominator’ for common actions on the global scale. What can become such a ‘common denominator’? No doubt, the best is something which is inherent in all human beings. And cognitive neuroscience finds it: moral thinking. It is true that all dilemmas in which people are engaged, demand a moral decision. Moral argument is one of the most powerful arguments for all people. If cognitive neuroscience proves that we have similar moral thinking and basic human values irrespective of national, religious or ethnic identities, then this ‘common denominator’ will be found, and a very powerful lever for different aspects of global activities will be found, and a functioning global society can be created based on similar moral values.

## 1. The ‘moral brain’: findings in cognitive neuroscience

Although individual morality is generally considered to be socially constructed, nevertheless, it is based on a natural ability of the brain to think morally. One would have failed to build any social morality if there were not a natural foundation for it. It is like the innate ability of a human being to learn the syntax of a language as Noam Chomsky claims: a small child would never be able to grasp such a complicated system as the syntax of a language if he did not have an innate ability for it (Chomsky, 1972: preface; Foucault, 2002: 81-148<sup>3</sup>). The same can be said about the innate ability of moral thinking.

The ‘*moral*’ brain (Tancredi, 2005<sup>4</sup>) consists of two broad regions of the brain (Snell, 1980<sup>5</sup>): (1) the ‘*emotional*’ brain (limbic system or our ‘old brain’) and (2) the ‘*rational*’ brain.

The emotional brain consists of four main parts: the amygdala, the hippocampus, the hypothalamus and the anterior cingulate cortex.

The rational brain is the frontal lobes (see Figure 1). The prefrontal cortex is the brain’s ‘command post’ (near the forehead above the eyes). It is supposed to be the centre of personality and identity, and of the integration of emotions and thoughts. Virtually every functional part of the brain is directly interconnected to this cortex and is controlled by it.

We should also mention the *mirror-neuron system and neuroplasticity* (Tancredi, 2005; Gazzola, Aziz-Zadeh, Keysers, 2006: 1824-1829). The mirror-neuron system has a certain type of neurons united into the network and engaged in understanding, imitating and learning, which is at the basis of human culture and social life. Experiments have shown that a man observing another develops the activation of the same zones of the brain subconsciously.

---

<sup>3</sup> The conversation with Foucault and Chomsky

<sup>4</sup> The description of the ‘moral brain’ is based on Tancredi.

<sup>5</sup> The division into two parts and structural description is based on Snell.

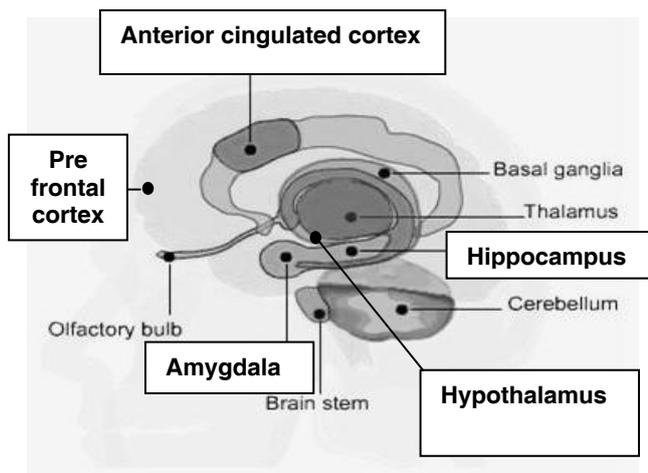


Figure 1. Moral brain

When a challenge occurs involving moral decision making, the amygdala produces a range of emotions from fear and anger to disgust. Conditioned fear is its main responsibility. The inhibitory mechanism – the hippocampus and hypothalamus are activated. The anterior cingulate cortex judges if everything goes right between what we expected as a reward, for example, and what we have got. It activates the prefrontal cortex warning that something is wrong and presses the prefrontal cortex to intervene. The amygdala’s apprehension, anxiety, and fear cause the hypothalamus to accelerate, resulting in a full range of bodily symptoms – increased breathing, racing pulse, and sweating. If we get into a similar fearful situation to the one which we have had earlier, such as a loss, for example, the hippocampus, which frequently works in tandem with the amygdala, becomes activated. Although the hippocampus does not generate emotions directly, it has the power to affect reactions by linking specific memories with emotions, thereby influencing the amygdala and the hypothalamus (Tancredi, 2005).

The amygdala responds to winning and losing by different sides: the left side in the left part of the brain is activated during winning, the right side in the right part of the brain during losing. Economic losses are especially threatening for the amygdala. A pattern of loss in a previous experience will reappear in similar situations. During the financial crisis of 1998 in Russia, the pattern of loss continued over a long period of time. People were afraid of keeping their savings in banks and they were not capable of making rational decisions. The same can be said about other people who suffered from the stock market problems of the late 1990s in the world, inasmuch as they might also have declined rational investment opportunities.

Prolonged frustration or distress, or depressing moral issues cause an over activation in certain zones of the brain with an over activation of certain

neurotransmitters in the synapses<sup>6</sup> during synaptic connections between neurons. If it is repeated for some time, the *neuroplasticity* helps to remember the ‘distress pathways’ through the cortex and a person cannot get out of depression (or moral stress – for example Dostoyevsky’s Raskolnikov). When a person starts using some diverting mechanism in order to ‘forget’ and ‘overtrick’ himself (drugs, gambling, smoking, alcohol or other addictions), what was at first temporary becomes a fixed habit due again to *neuroplasticity*. Thus, the remodeling of neural networks can take place leading to the change of a person’s identity.

The *mirror-neuron* system is responsible for imitating the behaviour of others in the vicinity (criminal surrounding, social violence, family abuses, etc.), and if it lasts for a long time neuroplasticity can make such imitation permanent. The neuroplasticity also can help to get rid of bad habits under the pressure of will, good surroundings, mental control or other techniques.

The expression of empathy, positive and negative reciprocity and a psychological need for trust, social respect, justice and fairness are considered to be an involuntary reaction on the part of a normal brain system which we have inherited as social creatures, if, of course, the brain was not damaged as a result of injury, or due to poor genetic inheritance, or through an acquired malfunctioning of the brain in the unfavourable surroundings and fixed by the mechanism of mirror-neuron system and neuroplasticity.

## 2. Moral philosophy

### 2.1. Ethical theories of the first and second order

There are ethical theories of the *first order* (how we should behave) and ethical theories of the *second order* (meta-ethics, i.e. theorizing about ethical theories).

Among the *first-order theories* we can discern three main groups:

- (1) duty-based (e.g. Kant’s ethics and Christian ethics) (Kant, 1995; Lewis, 2002);
- (2) consequentialist (e.g. utilitarian ethics of Bentham and ethics of Mill) (Bentham, 1988; Mill, 2001);
- (3) virtue theories (e.g. Aristotle’s ethics) (Aristotle, 2004).

(1) Duty-based ethical theories assert that acting morally means acting according to our duties (either we ought to perform some actions or we ought not) disregarding consequences which might follow them. The motives for actions must be ‘pure’ and cannot include any calculated benefits. The word ‘duty’ actually means a morally necessary thing to do which you also want other people to do to

---

<sup>6</sup> Neurons are nerve cells in the nervous system. Each has an axon, which carries nerve signal away from the soma (central part of a neuron) to the dendrites of another neuron, and also several dendrites which receive the impulse. The shapes and functions of neurons can be different. Neurons communicate with one another via synapses which can be excitatory or inhibitory. The axon terminal of a neuron containing synaptic vesicles with neurotransmitter chemicals release neurotransmitter chemicals into the synaptic cleft between the axon and the dendrite of another neuron (which has special receptors for it) in order to communicate with target neurons.

you and which can be regarded as a universal law for all. Happiness cannot be a universal principle because a person may want to become happier at the expense of another's unhappiness. If, for example, Georgians, who want to join NATO but cannot because they have an ethnic conflict with South Ossetians on their territory, attack and kill South Ossetians, who want autonomy it would be an immoral act, according to Kant, to solve a problem in such a way<sup>7</sup>. His 'categorical imperative' (command to act in a certain way) is to act only on the maxim (a general principle underlying the action) which you rationally want to become a universal law applied by others to you.

(2) Consequentialist ethical theories are based on the principle of the greatest beneficial consequences of the action: 'good' is whatever brings about the greatest total happiness (negative utilitarian theories – 'good' is whatever brings about the least total unhappiness). Thus, it is morally right for Georgians to attack South Ossetians because it could bring the greatest total happiness for Georgians who are the majority in Georgia and who want territorial integrity and membership in NATO.

(3) Virtue ethical theories focus on the character of an individual and his personal life on the whole, unlike the previous ones focusing on the rightness or wrongness of particular actions. Happiness comes from coping with life's problems morally which is due to the acquired virtues. So, if all Georgians and South Ossetians had been brought up correctly and had really developed moral virtues individually, no killings would have taken place on the territory of Georgia at all. Georgians and South Ossetians would mutually have respected each other and lived peacefully.

*Ethical theories of the second order (meta-ethical theories)* can be divided into two broad groups: *realism and anti-realism* which include five broad views about the nature of morality: subjectivism, naturalism, non-cognitivism, nihilism and intuitionism. Ethical realism presupposes the existence of objective moral truths. Ethical anti-realism, on the contrary, claims that there are no objective moral values at all. There are two main groups of ethical theories belonging to realism: ethical naturalism and ethical intuitionism. And there are three main groups of ethical theories belonging to anti-realism: subjectivism (moral statements are not objectively true), non-cognitivism (moral statements are neither false nor true) and nihilism (moral statements are false).

- Ethical subjectivism (including cultural relativism) holds that moral values are subjective: it is the individual's or group's attitude of considering something as 'good'. The value facts are reduced to psychological preferences. If I say, "The Russian president is good" it shows only my attitude to him. If someone else says, "The Russian president is not good" it shows his attitude: no objective truth is possible.

- Ethical non-cognitivism claims that evaluative statements cannot explain what the world is. They express only a speaker's emotions or can be treated as imperatives. If I say, "The Russian president is not good", for a non-cognitivist it

---

<sup>7</sup> The conflict in August 2008 (see Editor's Notes).

sounds like “Boo to the Russian president” or “Do not deal with the Russian president”.

- Ethical nihilism (called also ‘the error theory’) claims that evaluative statements are generally false because they assert things which do not exist in reality. If I say, “The Russian president is good” it is neither a false nor a true statement because there is no such a property as ‘goodness’ in reality, there is only the Russian president out there.

- Ethical naturalism holds that objective moral properties exist but they are reducible to non-evaluative terms. If I say, “The Russian president is good”, he can be considered good objectively, for example, if he improves the well-being of his citizens. Moral statements must be expressed either in non-evaluative terms or justified empirically on the basis of observation.

- Ethical intuitionism claims that moral properties are objective: there are such objective properties as ‘goodness’ or ‘evilness’ and they do not depend on someone’s attitude. They are irreducible (we cannot but use an evaluative language speaking about value facts saying ‘good’, ‘evil’, ‘desirable’ and so on).

If I say, “The Russian president is good”, it means he is, indeed, ‘good’ independent from someone’s or my own attitude towards him, and other people understand what I mean, i.e. they understand this property ‘good’. I do not need to use any other non-evaluative terms to be understood by people.

Below is the diagram (Figure 2) based on the classification suggested by Michael Huemer (Huemer, 2005: 7).

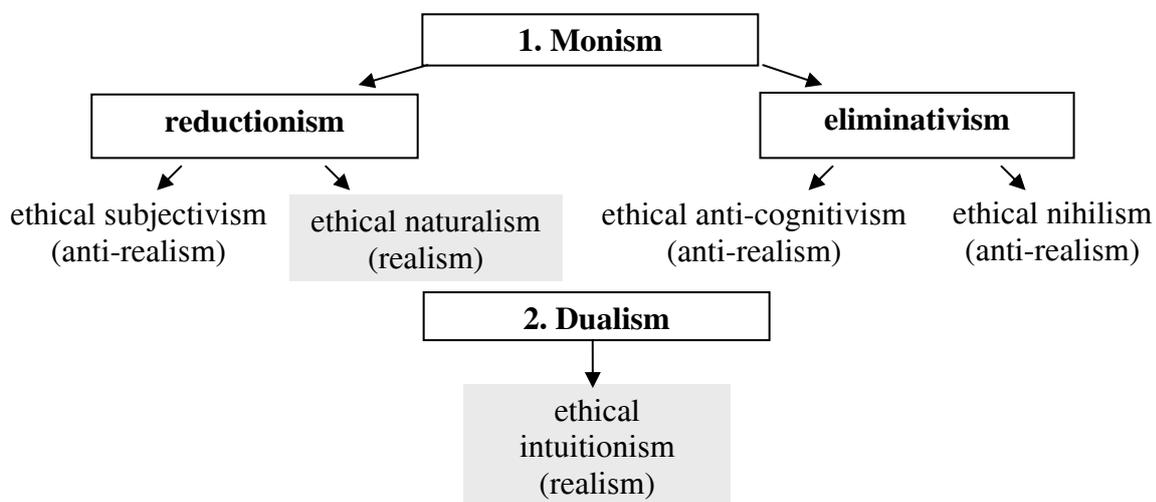


Figure 2. Meta-ethical views

Monism (1) and dualism (2) belong to the classification in the tradition of the philosophy of mind where monism is presented by two methodological philosophical approaches: reductionism (reduces moral statements to non-evaluative facts or psychology) and eliminativism (eliminates possibility of moral truths). Ethical theories are grouped according to both the philosophical approach (monism and dualism) and the traditional classification of ethical theories (realism and anti-realism). Two shaded boxes (ethical naturalism and ethical intuitionism) belong to realism.

Dualism is understood here as the existence of two fundamentally different kinds of facts (or properties) in the world: evaluative facts (properties) and non-evaluative facts (properties). Only intuitionism includes both of them. Such classification first of all allows Huemer to put the most important question of what exists in the world and to show that “subjectivists, naturalists, non-cognitivists, and nihilists all agree in their basic view of *the world*” (they are monists) implying that either there are no value facts at all (eliminativism), or value facts are entirely explicable in terms of non-evaluative facts (reductionism) (Huemer, 2005: 8).

Intuitions are defined by Huemer as “mental states in which something appears to be the case upon intellectual reflection (as opposed to perception, memory, or introspection), prior to argument” (Huemer, 2005: 232). We have intuitions (‘intellectual appearances’) about certain abstract truths including self-evident principles similar to perceptual experiences (‘sensory appearances’) about the physical world. Our intuitions are merely the form of our awareness: we are directly aware of moral facts. It can be compared to our awareness of a physical world via sense perception: we are directly aware of physical objects. Moral intuitions can conflict with our moral theories or fixed moral beliefs resulting from culture, religion and ideology. They also can be affected by bias as much as our sensory experience.

The main objection against ethical intuitionism is that we cannot be certain of moral truths based on intuition unless we find a way to show that intuitions are reliable for verification in general. But no such verification is required to show that sensory perception or memory exists. Huemer states that “it appears, then, that the present objection relies on an epistemological double-standard: the objector imposes demands on intuition that would not be placed on any other fundamental source of knowledge” (Huemer, 2005: 236). He asks why this process of cognition should demand a second cognitive process and remarks that even a utilitarian will use his intuition and will say that to kill a healthy human being to distribute his organs to five other people is not good in spite of the basic principle of the utilitarian theory: the greatest total happiness. There is also a lot of disagreement about objective, factual questions in science. Human beings are subject to making mistakes in all fields of human activities. Intuition may fail sometimes because it can be affected by cultural, ideological and religious indoctrination. So intuition should be considered as a good and reliable source in moral knowledge as are other sources of cognition such as, for example, sensory perception or memory.

### **3. The findings in cognitive neuroscience strengthen the position of ethical realism**

New findings in cognitive neuroscience supply ethical realism (naturalism and intuitionism, which admit objective value facts) with good material for the argument with their opponents representing the anti-realist trend. What is interesting is that the initiative in discussing the main questions of the philosophy of mind (explanation of a human being either on the basis of one substance in the framework of monism or two distinct substances in the framework of dualism and

their ratio in moral behaviour) has moved to neuroscientists who build bridges between their discoveries in neuroscience and moral philosophy using the philosophy of mind or provide the possibilities for others to make such links. What is common to ethical naturalism and ethical intuitionism is the belief that there are objective moral facts and moral thinking is objective. But ethical intuitionism considers such a phenomenon to exist due to distinct mental states irreducible to physical states while naturalists use the work of the brain as the explanation of objective moral thinking.

### *3.1. The brain directs the mind: a person is not responsible for her moral behaviour*

For his naturalistic monistic conclusion that the brain directs the mind, Tancredi (Tancredi, 2005) gives the following reasons:

1. Clinical research on patients who have been afflicted with brain injuries (lesions) show the change in their abilities of cognition, memory, behaviour and feelings. The same can be said about patients suffering from strokes or degenerative disorders affecting the brain.

2. Patients with psychiatric and neurological disorders show difficulty in emotional control and cognition. Examination of these patients showed that the normal pathways of neural networks were changed because some parts of the brain have defective performance.

3. Discrepancies in genes, especially gene combination, which serve as the basis for differences in brain biology reveal the impact on personality.

4. Highly refined technologies such as magnetic resonance imaging (MRI), single-photon emission computed tomography (SPECT) and positron emission tomography (PET) help to compare normal and abnormal brains. These technologies produce computer-generated pictures of the brain with special colour indicators of the zones of the brain showing the degree of their activity. For example, in a drug abuser (cocaine, heroine) the technologies reveal abnormal blood flow or deviating metabolic rates of specific areas of the brain affected by the drug. Complex emotions like grief, empathy, uncontrollable anger, fear, guilt and shame arise in specific areas of the brain and engage other brain areas distorting their motor and intellectual functioning.

Tancredi through the whole book uses a medical case of a criminal in order to illustrate the distorted moral judgment due to the distorted functioning of the brain. The story is about Ricky Green, 29 years old, who was charged with the serial killing of two women and two men. He had sexually mutilated his victims after drinking with them and having sex. The pre-history is as follows: he started drinking at 9, and at the age of 14 he was a heavy drinker and smoked marijuana. His elder brother and father went to prison, and his mother died at 45. His father was very demanding of the boys, he abused his wife when she was alive and slept with his daughter. Ricky Green had an intense fear of his father, had no friends, had protracted bed-wetting until 16, and as a child he liked killing animals and starting fires. He ran away from home twice at the age of 11 and 16. His attempt to escape at 16 ended up in a casino where he was picked up by a homosexual old

man. At the age of 18 he had got a woman who liked to hurt him during sex. He found a new girl-friend who was a drug-abuser and married her. After killing a victim Ricky felt so guilty and had such a strong impulse to confess to someone that he used his wife for that against his own best interests. Tancredi classifies Green as a psychopath who lacks an ability to shape a moral issue, conscience and sensitivity for empathy, and who displays extremely abnormal behaviour - violence, deception and harm (though he is not considered to be fully anti-social).

Recent research shows that psychopaths have a malfunctioning brain, perhaps due to defective wiring (neuropaths), which leads to undesirable moral behaviour and cannot exhibit what we consider 'free will'. Tancredi comes to the conclusion that Green is a biologically driven murderer resulting from exposure to a prolonged stressful environment which most likely altered the neurobiology of his brain because each person has a threshold, the limit of his ability to withstand stress and provocation. This is dynamically set by the force of amygdala responses (leading to fear, anger, and rage) and the power of one's limbic structures and anterior cingulate cortex to inhibit impulses. Under extreme frustration and helplessness the biology of the brain may cross a stress threshold, decreasing the ability to control undesirable instincts and desires (similar to prolonged alcoholism which also changes the biochemistry of the brain). He arrives at the conclusion that genetic predisposition must be somehow activated by the environment in order to become the permanent trait of character.

Tancredi states that some recent findings indicate that a moral sense is innate ('hardwired in the brain'), and we begin to display it at a very young age. The phrase 'it's not fair' can be heard from 4-5 year old children. Studies among preschool children have shown that the sensitivity to fairness becomes refined with age.

Tancredi gives interesting examples with monkeys which show that they have a feeling of fairness based on inequity aversion. Researchers at the Yerkes National Primate Centre in Atlanta studied how brown capuchin monkeys (5 males and 5 females) responded to unequal rewards in their group. Their conclusion is that monkeys have an innate sense of equality and fairness and that this capacity, essential for cooperation, might have evolved in social primates before it did in humans. Chimpanzees, for example, possess reciprocal altruism (generosity with food and sharing) which is important for getting a higher social status.

Tancredi illustrates the biologically malfunctioning brain with many cases of immoral behaviour starting from 'corporate criminals' ignoring social norms because of the basic obsessive-compulsive dimension to their personality that causes them to behave anti-socially and steal corporate money and finishing with gamblers for whom gambling becomes a psychostimulant drug.

### *3.2. The mind directs the brain: a person is responsible for her moral behaviour*

*James W. Jones* relies on *dualism* in his research. He, on the contrary, argues that the mind can control the physical substance and cure both the brain and the body (Jones, 2005: 36-60). Jones has practised clinical hypnosis as part of his

behavioural medicine work. He has found it very effective in the treatment of anxiety, chronic pain, stress-related disorders, and smoking cessation. Central to his own practice is the use of imagery. When he asked his patients to imagine warming their hands over a fire, the blood flow to their hands increased and blood vessels dilated. This may help in relieving vascular headaches. When he asked his patients with chronic pain to imagine their hands in a bucket of cold water it induced a numbness in the hands which can be transferred to the parts of the body with chronic pain. Imagery under hypnosis can produce the impact on the functioning of the immune system. Thus, the power of mental imagery affects the body. He writes, “A person forms a purely inner, mental power act (an image) and the *following* result is that the blood pressure changes, or pain sensations decrease, or other physiological processes alter. In light of such practices, it is hard for me to deny that inner, mental activities can control physiological processes” (Jones, 2005: 37). He adds that it is also possible that “an active thought can reduce heart rate, change skin conductance, relax musculoskeletal tension, and even shift brain wave patterns”. The latter is the most philosophically interesting question for him: to what extent can nonreductive physicalism account for such phenomena?

Meditation-derived techniques are widely employed in behavioral medicine and are proven to be effective in treating anxiety disorders, stress, eating disorders, depression and personality disorders. Meditation produces an impact on such “basic functioning as brain hemispherical laterization, immune system functioning, an emotional processing” (the increased activity in the left cerebral hemisphere under meditation increases positive emotions). Advanced meditators showed “under laboratory conditions, the ability to control fundamental physiological processes, such as basic reflexes, formerly thought to be beyond conscious control” (Jones, 2005: 39).

Reductive physicalists, nonreductive physicalists, and dualists, all agree about scientific discoveries: functioning of neurotransmitters, the growth and decay of neuronal cells and that some parts of the brain are more activated during some mental activities and so on but the explanation they use is different.

Reductive physicalism explains the primary causation via physical factors, i.e. brain activity. But in the above mentioned examples the cause is the thought itself which changes the brain activity. Jones examines the possibility of nonreductive physicalism to explain such a phenomenon and his conclusion is negative.

Nonreductive physicalists admit that the mental cannot be reduced to the lower physical level of neurons for the explanation of mental states and they try to explain it using the concepts of ‘emergent property’ and ‘supervenience’. Jones claims that the explanation with the help of these concepts is unsatisfactory because the main question is not answered: “from where does the mind acquire the property of downward causation” forcing the physical body to move or to change the brain activities, if these powers of causality are not determined by the causal processes in the brain? (Jones, 2005: 51). He analyses the ‘emergent property’ explanation and comes to the conclusion that a new property can emerge only from something similar to it (e.g. a word from its constituting letters, water from its constituting atoms) but ponders how our thoughts emerge from neurons, which

have quite different physical characteristics such as space and time, unlike thoughts. Jones remarks that those who use an ‘emergent property’ thesis understand the lack of convincing power themselves. For example, Clayton suggests ‘pluralistic ontology’ not being able to reject a monistic materialist approach characterizing the contemporary scientific approach but at the same time admitting that mental states can be explained as physical only if we understand ‘physical’ not in the ordinary sense.

Jones also criticizes the ‘supervenience’ thesis which does not admit causation (when one event causes another event), instead putting forward the idea of correlation of events at different levels and the relation of dependence under certain circumstances.<sup>8</sup> Our mental states supervene on a lower level of neuron firings but appear at certain circumstances. Thus the subvenient property of neurons can cause the supervenient property (mental states) without determining it. But such underdetermination is not a top-down causation and cannot explain mental causation when a thought changes brain wave patterns or physiological processes. Jones analyzes Murphy’s thesis of ‘triggering and structural’ causes. ‘Triggering causes’ are impulses travelling between the neurons according to the laws governing the movement of ions through neurons. These impulses are structured by the density of the neurons, the amount of neurotransmitters, the strength of the impulses (Jones, 2005: 46). Mental causation is an example of ‘structural causation’. According to Murphy people come across physical objects or events in the world, learn and remember. After some time they get used to the physical causation that they have come across previously and matched thoughts appear and become associated with the physical reaction of the organism to the environment. Thus, as Jones argues, supervenience is understood as a process of learning which admits only conjunction and not causality for the mental states. His final conclusion is that nonreductive physicalism cannot explain mental causality.

Jones comes to the conclusion that “natural science as currently conceived cannot provide a robust enough account of mental causation to account for the findings of research in behavioral medicine, meditation, hypnosis, and other fields of psychophysiology” (Jones, 2005: 56). He suggests that, perhaps, we should rethink what is physical after all, or take the position of those who claim that consciousness is simply another irreducible dimension of the universe or believe religious people’s claim that “within the depths of human consciousness is a window on the universal and the divine” (Jones, 2005: 57).

### *3.3. The influence of theoretical debates on social practice*

We can see that the different philosophical positions of Tancredi and Jones make them treat the findings of neuroscience in different ways. Though very promising, the position of Jones seems to be weaker due to the ‘scientific prejudice’ existing in the present scientific community. Scientific objectivity is

---

<sup>8</sup> Jones illustrates the supervenience thesis with the following example: a ‘penny’ cannot be considered a penny though it has the image on it and is made of metal if someone mints it at home or if there is no law about the use of a penny for payment in the country.

supposed to be based on the physicalist monistic approach but Jones rejects the existing physicalist explanation of mental causality. However, other researchers try to investigate the mental states Jones is interested in using Tancredi's approach, though they have not answered Jones's question yet either. "Mainstream neuroscience suspects that mystic experiences are correlated with certain brain activities, noting that several electroencephalographic (EEG) studies of meditation, a frequent precursor of mystical experiences, show shifts of neural activity while participants are meditating" (Krippner, 2005: 65). Single photon emission computed tomography (SPECT) applied to meditators (Buddhist meditators and Franciscan nuns in the experiment described) showed increased blood flow, while other regions showed marked decreases during the experiment. Krippner states that "It is not unreasonable to suggest that these meditators and nuns permanently altered their brains in such a way to predispose themselves to a god experience through a neurological process referred to as 'kindling'" (Krippner, 2005: 66). Then, it is possible to suggest that religion helps people to acquire consciously new neural circuitry to cure 'distressed' neuropaths. Religion reflects people's intuition for self-help when their mind is disturbed.

There are some studies by distinguished scientists in parapsychology as well (Price, 1995; Kieruff, Krippner, 2004) but the scientific community does not take them very seriously. The parapsychologists can put forward only the minimal claim nowadays that there are genuine paranormal phenomena to be scientifically investigated. "Many scientists working primarily in other areas seem to have regarded the claims of parapsychologists as a threat to established knowledge and to the credibility of science" (Mulkay, 1983: 83). However, it seems to me that the study of parapsychological phenomena is the best opportunity to understand consciousness and the properties of the mind because such cases allow a glimpse into the reserves of powerful abilities of the mind. The study of normal human beings will keep us away from a full understanding of the mind for some centuries time.

Dualists struggle for the right to admit the existence of a mental state as something quite distinct from the physical in a modern understanding of 'physical'. Ethical intuitionists are mostly dualists and insist on the innate moral intuitions. And though none of us can deny that we know what intuition is and have experienced it in our lives, nevertheless 'intuition' is regarded as something unscientific. However, for intuitionists, objective moral thinking is innate, due to the spirituality of a human being supplied with certain intuitions from birth, meanwhile for naturalists, objective moral thinking is inherent in all human beings due to the biochemical functioning of the brain, the result of genetic inheritance in the process of evolution and human social form of life. Both naturalists and intuitionists admit that moral human thinking is socially conditioned, i.e. innate objective moral thinking can be influenced (distorted or improved) by social surroundings.

The theoretical argument between naturalists and intuitionists is, no doubt, interesting for philosophers but the question as to what application it can lead to is much more important for society. If our moral objective thinking is based on

uncontrollable inherited biochemical work of the brain, the conclusion is that no person is responsible for his behaviour and our duty is to help him to improve his moral judgment by pharmaceutical means; brain implants<sup>9</sup> and genetic interference<sup>10</sup> should be used. If society chooses this path, then no doubt a new powerful lever will be used politically. Special devices will be implemented for testing the morality of people in court ('Brain Fingerprinting' has already been implemented in the USA<sup>11</sup>), by police, and in other social institutions. But as we know, where there is power there is abuse.

The morality of society does not necessarily coincide with innate moral individual intuitions. In the course of history there has never been any perfect society that has not needed improvement.

The prospects of social practice based on ethical intuitionism and Jones' dualism look like being less gloomy. A human being endowed with spirituality and consciousness which is distinct from material substance can control his behaviour, irrespective of the inherited properties of the brain. Cognitive neuroscience demonstrates that our mind can control brain activity, i.e. the material substance. Thus everyone is responsible for his actions though bad or good surroundings also matter due to human mirror-neuron system and neuroplasticity.

The way of improvement is engagement in art, philosophy, religion, meditation, self-hypnosis, treatment through images and so on. All of that is based on the willingness of a person to improve his behaviour and to attain 'moral virtues'. Moral virtues are a means of improving a person's psychological state that is directly connected with a good physical state. It is also necessary for successful social communication. However, a person of high moral virtues in the background of an immoral societal system would hardly be successful, so the question is of creating good surroundings in the basis of which lies an adequate political and economic system.

#### 4. Generative Ethics

The famous German philosopher Immanuel Kant (1724-1804), a representative of the Enlightenment, believed in the power of human reasoning and that moral laws can be established by reason *a priori* but ought to be tested in practice. He defined the understanding of what is moral in such a way that it can be applied to

---

<sup>9</sup> Brain implants are technological devices directly connected to the brain and usually placed on the surface of the brain or attached to the brain's cortex (see Editor's Notes).

<sup>10</sup> Human genetic engineering is the modification of the genotype of the unborn individual to control what traits it will possess when born.

<sup>11</sup> Brain Fingerprinting is a controversial forensic science technique that determines whether specific information is stored in a subject's brain by measuring electrical brainwave responses to words, phrases, or pictures that are presented on a computer screen invented by Lawrence Farwell and based on the theory that the brain processes known, relevant information differently than it processes unknown or irrelevant information which is revealed by a specific pattern in the electroencephalograph (EEG). 'Brain fingerprinting' has been applied in a number of high-profile criminal cases in the USA, including bringing to court a serial killer Grinder and helping an innocent convict Terry Harrington.

any society in any century. What he suggested coincides roughly with what we understand as morality in our everyday life. Kant is the supreme representative of a duty-based moral theory. He was interested in the question ‘what is a moral action?’ and ‘how to define it?’

The moral action is based on a moral duty which a human being imposes on himself. He feels free to act according to his understanding of what is morally necessary for him to do. His rational choice ought to disregard his desires, feelings, and any external influence or consequences. It is a courageous morality demanding one to be honest with others and especially with oneself, knowing best one’s own motives for the action. The motives must be pure: the moral act is directed at another person without waiting for any benefits from the action. It is ‘good will’<sup>12</sup>(Kant, 1995b) which means one will act morally because one rationally wants to do so. Kant connects the act with the will which does not presuppose any condition resulting from any inclination, it is *a priori*. It is hard to liberate oneself from one’s own inclinations, feelings and passions but Kant insists on the freedom from even any good inclination because it is not a sure guarantor for a moral act: circumstances can change and one may lose one’s natural inclination to behave morally and only one’s reason can be a guide for a moral action. Kant uses the word ‘maxim’, i.e. a general subjective principle underlying an individual action. One must choose such ‘maxims’ which one wants to become an objective moral law universally applied to all (including oneself) and by all. It is a principle of universalizability and is called a ‘categorical imperative’ by Kant, i.e. an unconditional moral command to act in this way (a conditional duty is called a ‘hypothetical’ imperative by him starting with ‘if’, e.g. ‘if you want to be respected you ought to...’). Another categorical imperative is to treat people as ends in themselves, never as a means to an end. We should recognize humanity and respect people.

Such a universal presentation of morality as made by Kant is the most suitable principle for the formation of a global society with common value system, but, at present, a theory of moral relativism seems to be still popular, and Kant is rebuked just for what is the most valuable in his moral theory – a universal application based on humanity.

Alasdair MacIntyre, while paying tribute to Kant’s heritage, criticizes Kant for having “an essentially conservative view” in spite of “the period of rapid social change” caused by his leading “an isolated academic existence” near Prussia’s eastern limits, not noticing that “in different societies there might be different moral schemes” and conceiving “his task as the isolation of the *a priori*, and therefore unchanging, elements of morality” (MacIntyre, 2005: 185). He also claims that “the Kantian doctrine is parasitic upon some already existing morality,

---

<sup>12</sup> “Good will is good not because of what it performs or effects, not by its aptness for the attainment of some proposed end, but simply by virtue of the volition; that is it is good in itself, and considered by itself is to be esteemed much higher than all that can be brought about by it in favour of any inclination, nay even of the sum total of all inclinations.” (*Foundations of the Metaphysics of Morals* translated by Thomas Kingsmill Abbott).

within which it allows us to sift – or rather, within which it would allow us to sift if the test it provided were a reliable test” (MacIntyre, 2005: 190). “The logical emptiness of the test of the categorical imperative is itself of social importance. Because the Kantian notion of duty is so formal that it can be given almost any content, it becomes available to provide a sanction and a motive for the specific duties which any particular social and moral tradition may propose. Because it detaches the notion of duty from the notions of ends, purposes, wants, and needs it suggests that, given a proposed course of action, I may only ask whether, in doing it, I can consistently will that it shall be universally done, and not ask what ends or purposes it serves. Anyone educated into the Kantian notion of duty will, so far, have been educated into easy conformism with authority” (MacIntyre, 2005: 191).

I disagree with MacIntyre’s opinion and I want to use Kant’s reply made in the 18<sup>th</sup> century in his preface to *The Critique of Practical Reason*, “A reviewer who wanted to find some fault with this work has hit the truth better, perhaps, than he thought, when he says that no new principle of morality is set forth in it, but only a new formula. But who would think of introducing a new principle of all morality and making himself as it were the first discoverer of it, just as if all the world before him were ignorant of what duty was or had been in thorough-going error? But whoever knows of what importance to a mathematician a formula is, which defines accurately what is to be done to work a problem, will not think that a formula is insignificant and useless which does the same for all duty in general” (Kant 1995a: 127).<sup>13</sup> Kant clarifies in the *Foundation of the Metaphysic of Morals* that all maxims must have “a *form* consisting in *universality*; and in this view the *formula* of the moral imperative is expressed thus that the maxims must be so chosen as if they were to serve as *universal laws of nature*” (Kant, 1995b: 96). All maxims have a “*matter*, namely, an end, and here the formula says that the *rational being*, as it is an end by its own nature and therefore *an end in itself*, must in every maxim serve as the *condition limiting all merely relative and arbitrary ends*” (Kant, 1995b: 96) (the italics mine).

What can be more explicit as a goal or richer as a content in a moral theory? The content of Kant’s moral theory is a respect and fairness to human beings who should be treated as an end in themselves in society. So the guideline for a universal law is to treat others in the same way as if you wish to be treated by them. Irrespective of time and territory, a society based on fairness and respect where all people are governed by such categorical imperatives, will be perfect and does not need any further specifications of the ‘ends’, ‘purposes’ or ‘wants’, because Kant’s moral principles automatically exclude the possibilities of traditional, or religious, or political, or economic distortions in societies. A person cannot follow ‘easy conformism with authority’ at all because such a perfect society where all people including the authority follow Kant’s categorical imperatives, however simple they might seem, does not exist yet and, in any case, if the authority acted according to Kant’s moral principles, such ‘conformism’ could be worth pursuing. Kant’s principles of ‘fairness’ and ‘treatment as yourself’

---

<sup>13</sup> Translated by Thomas Kingsmill Abbott

demand actually dismantling all existing nation-states at present. So without formulating any political goals for a society, just applying Kant's moral formula is enough to create a morally perfect political and economic system for any society and international world. However, we have a theory of moral relativism, the idea of which is to allow every society to distort the basic human morality expressed by Kant, to the degree it can afford.

Kant gives an example of how a categorical imperative works in the case of 'promise keeping' which is also described by MacIntyre. One can find himself forced to borrow money but is not sure if he can give the money back. So he thinks about promising without keeping his word because he wants to get out of a difficulty and he is ready to invent a maxim for himself, "when I need money and have such difficult circumstances I can break my promise and not return the money". But Kant recommends we ask, "How would it be if all other people did the same?" Could promise keeping exist at all if other people used this maxim?" Thus, such a maxim cannot become a universal law applied to all. Hence Kant's categorical imperative is "Keep your promise!"

MacIntyre claims that one can formulate the question in such a way that anything can become a universal law, for example, "I may break my promise only when....", so his conclusion is that Kant's principle of universalization of maxims cannot work properly (MacIntyre, 2005: 190).

However, the question of difficulty in implementing Kant's morality lies in quite a different area, to my mind: his intentional emphasis on a rational part of our 'moral brain'. It is true that experiments show that the principles of 'fairness' and 'justice' are very important innate moral criteria in human beings (even in monkeys) and that a rational part (prefrontal lobes) of the brain can promote a rational decision very well, but our emotional part of the moral brain should also be engaged in order to make a 'will' stronger, i.e. to support a rational part. Even Kant's word 'duty' disturbs people because it seems to be depressing and completely ignoring 'happy' emotions and stripping people of the enjoyment of performing a moral action.

He did not engage an emotional part of a moral brain in his theory to make people comfortable and happy. Kant denies 'happiness' as the greatest moral principle because, sometimes, the only way to achieve one's happiness is to achieve it at the expense of another's unhappiness. Besides, happiness cannot be a universal law because people need different things to be happy. However, he considers that a person's moral duty is to take care of herself and to enjoy life if it does not contradict a categorical imperative. But rejecting 'happiness' as a moral basis and a 'moral feeling' as a criterion of morality due to his mistrust of emotions, Kant goes against human nature which is both rational and emotional and, unfortunately, does not engage an emotional moral brain to reinforce his moral theory. However, international politics, the nature of which is supposed to be less emotional, can be based on Kant's moral principles.

Kant's three principles – good will, the universalizability of an action and treatment of a human being as an ends in itself - *generate moral actions* and can be

called *Generative Ethics*<sup>14</sup>. Good will implies no selfish interest or benefits in performing an action expressing our good will to act morally. Universalizability means that one rationally wills that the chosen action will become a universal law applied to all including oneself. ‘A human being as an end in itself’ means that one respects humanity and treats a human being as an end in itself and not as only a means to achieve something through another human being. The application of all these three principles is required for an action to be moral. A totality of all leads to fairness, social respect and positive reciprocity based on good will.

1. *Good will*      2. *The universalizability of an action*      3. *A human being as an end in itself*

No selfish interest in the moral action

A chosen action for being a universal law applied to others and to oneself (e.g. promise keeping)

Respect to a human being

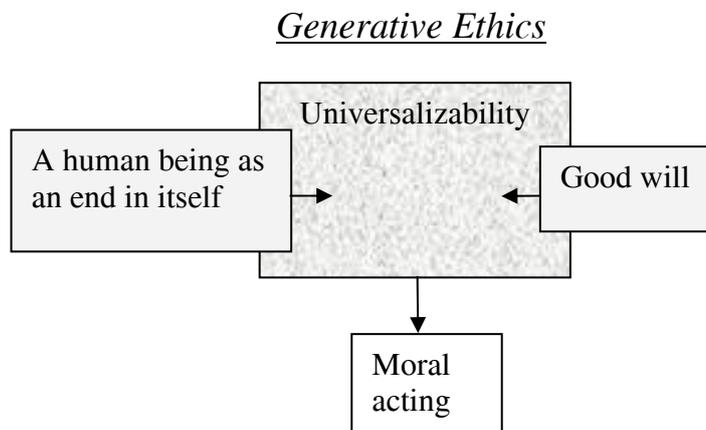


Figure 3. Generative Ethics.

At the top there are three of Kant’s principles for calling an action moral: good will, the universalizability of an action and a human being as an end in itself which generate moral actions. In the second row there is the same idea but depicted in a different way.

Kant’s moral principles are cosmopolitan while moral relativism refers to a communitarian approach. Considering international relations Molly Cochram examines possibilities of three approaches: cosmopolitan, communitarian and pragmatic (Cochram, 1999). Her choice is pragmatism based on the American pragmatic philosophical tradition because cosmopolitan and communitarian ethical positions are assumed to be irreconcilable, while pragmatism gives the opportunity to adjust different ethical opinions. However, the ethics of the European Union is based on three competing ethical principles: cosmopolitan, communitarian and pragmatic, which causes some friction but, on the whole, it does not prevent it from existing as a union. Such a mixture of ethical positions is typical nowadays

<sup>14</sup> I have borrowed this term from Noam Chomsky’s *Generative Grammar*.

for international relations in the world. Logically the formation of a global society demands the application of cosmopolitan ethics based on Kant's universalizability.

## **5. An ethical component of sustainable development in the context of global processes**

One of the most widely discussed topics nowadays is sustainable development under globalization<sup>15</sup>. However, to answer the question "how to make the development more sustainable?" we must first answer another question: "what kind of system has a moral worth developing and sustaining?" The next thing to do is to develop a strategy taking into consideration the complexity of human cognition and its continuous process. "Living as a process is a process of cognition" (Maturana, Valera, 1980: 13) and our cognition as living systems is complex. So economic, political, social, moral and other aspects of our life constitute a whole and demand a certain strategy for sustainable development which will take into consideration all aspects of our life.

Economic theories of development under globalization consider a welfare state<sup>16</sup> as something obsolete and redundant. However, a *welfare state* which is arranged on the unconditional universalistic principle pursuing de-commodification at best provides the necessary conditions for a human being. Fairness, equality, empathy, desire for social protection, freedom for the development of human abilities and justice – all these ethical questions are a part of the human natural way of thinking.

Modern mainstream economics neglects ethical questions for the calculation of profits and efficiency due to its thesis about a self-interested rational actor. However, Amartya Sen argues (Sen, 2005) that actual human behaviour is seldom rational and that consistency characterizing rationality can characterize irrationality as well if a person consistently continues doing the wrong things to achieve his aim. Rationality cannot serve as an equivalent to maximization of self-interest either. "To consider universal selfishness as a requirement of rationality is patently absurd" (Sen, 2005: 16). Mainstream economic theory considers the behaviour irrational if the actor rejects the maximization of his self-interest in decision making due to moral thinking. But as we know from cognitive neuroscience, no one can escape moral thinking in decision making: moral zones of a human brain are constantly engaged in decision making rationally and emotionally.

### **5.1. The formulation of a new social morality by Anthony Giddens**

Anthony Giddens puts forward the idea of a new welfarism: he calls for the preservation of the neoliberal economic basis and the restructuring of the welfare state by deepening individual political involvement and by introducing the

---

<sup>15</sup> Globalization is understood here as the process of transformation of some activities or phenomena into global ones. This process is a combination of economic, technological, sociocultural and political forces where people function together unified in a single global society.

<sup>16</sup> I consider 'a welfare state' as a state which assumes responsibility for the welfare of its citizens not only beyond a minimum level but for a middle class as well.

criterion of individual responsibility and selected eligibility to welfare funds instead of the traditionally universalistic and unconditional. So, instead of a welfare state's risk minimization system he suggests, in fact, creating a risk management system based on individual responsibility (Giddens, 1998). However a neoliberal economic logic based on an individual owner getting profits during his lifetime and reducing costs in any possible way, does not coincide with the logic of a welfare state (for example, ecology, human resources) intended for generations.

There is a discrepancy between private-economic rationalization to increase individual profits and societal rationalization to provide all the citizens and future generations with social benefits. Giddens's proposal to use a neoliberal economic basis for deepening democratic involvement in a new type of a welfare state based on individual risk management and responsibility (shifting the burden of responsibilities from the societal level to the individual level) is contradictory.

The logic of democratic political involvement demands mass participation and societal solidarity, while neoliberal logic requires individualization and the prevalence of private interests. Besides, one simply needs more free time for political participation which will not be available due to the increased 'individual responsibility' in all spheres of life and risk management at the individual level. Besides this logical contradiction between the deepening democracy and the neoliberal economic basis, Giddens' proposal denies human psychological needs in unconditional social protection and universalistic attitude.

## *5.2. A welfare state under globalization. The decision of the neo-liberalized social democratic elites to fail a new economic model of a welfare state in Sweden*

It is not the question that it is not possible to create an economic mechanism under globalization to preserve universalistic and unconditional welfare states. The problem is in the lack of political will (not speaking about Kant's good will), and the lack of desire to introduce a new socio-economic redistributive policy because it might demand a new distributive principle concerning the property of those who have the main political influence in the state.

For example, the old successful *Swedish model*, the so-called the Rehn-Meidner model, was revised and adjusted to new economic trends in the 1970s and was called *Wage earner funds plan* made by the same economist Meidner who was a co-author of the previously successful model, but it was never implemented as it was first suggested by Meidner. It was a political act to prevent the implementation of the model because it could lead to the gradual socialization of the means of production.

Magnus Ryner argues that "the crisis was fundamentally political in nature" and that "the neo-liberalisation of Swedish social democracy itself played a decisive role". Thus, it was a socially constructed phenomenon due to "political practices of social democratic elites, pursuing a particular kind of neo-liberal strategy ('compensatory neo-liberalism')". Thus, such practices can be changed through alternative practices, which will be consistent with "traditional commitment to social citizenship and de-commodification" (Ryner, 2002: 1).

The old Rehn-Meidner model is based on a national system of collective bargaining under a macroeconomic commitment to full employment, where pay norms are set centrally by the representatives of employers and employees, according to the principle of ‘solidaristic wage policy’. This means that inefficient enterprises are forced out of business as they cannot pay the going rate, whilst at the same time labour and other resources flow (through the aid of active labour market policy) to more efficient, productive and competitive enterprises. Hence, the latter enterprises actually get a more stable and secure supply of labour and a lower wage bill than they would in the free market system, which would be likely to generate bottlenecks and shortages of skilled labour. Hence, the Rehn-Meidner model secures both a competitive and efficient industry as well as laying the foundation for a universal welfare state through full employment and the elimination of waged poverty.

In addition, according to the new model, the wage restraint was to have been compensated (the high-profit enterprises could not pay to their employees more than it was defined by the ‘solidaristic wage policy’) via the corresponding issue of shares that would have gone to these high-profit enterprises for their development as equity held by the Trade Union. The shares were to have become compulsory to all enterprises with more than 50 employees and envisaged 20% of pre-tax profit backed by law. An individual worker at such a high profit enterprise would not have been given dividends from these shares but he would have acquired the corporate decision-making power according to the shares and would have elected his representatives democratically. Dividends and equity capital would have belonged to the Trade Union regulating the equal distribution of social goods among all citizens irrespective of their working place.

The implementation of this model was blocked, in fact, and it provoked a crisis that helped to create the discursive popular platform for pushing further the neoliberal economic policy as ‘inevitable’. Thus, the modification of the old model was not introduced in a proper way and at the proper time so as to strengthen the welfare state. Instead of it, a new neoliberal economic system was created in Sweden which caused a crisis in the welfare state.

### *5.3. Moral thinking and socio-economic development*

We cannot deny that human beings consider the principle of equality to be very important. Equality seems to produce a special effect within our minds. Amartya Sen argues that virtually all social theories which stood the test of time demand *equality* of something – something which is important for the particular theory. They are all ‘egalitarian’ in some essential way, arguing resolutely for equality of something. For example, John Rawls demands equal liberty and equality in the distribution of ‘primary goods’, but Robert Nozic demands equality of libertarian rights and so on (Sen, 2003). It seems as though all the authors of well-established theories know that there is some ethical code in the minds of people to which they can appeal so as to have success.

*Empathy* is another thing which is connected with the innate ability of the mirror-neuron system to imitate and feel the same (Wicker, Keysers, Plailly,

Royet, Gallese, Rizzolatti, 2003; Singer, Seymour, O'Doherty, Kaube, Dolan, Frith, 2004). Experiments show that the same areas become activated in the brain of an observer if the experimenter causes pain to another person, especially a loved one. The politician who would dare to announce that he does not care for the poor will hardly win an election. Empathy is installed into the human brain from birth if it is not deficient due to genetic inheritance or injuries.

*Fairness and reciprocity* have powerful implications for many economic domains. Ernst Fehr and Simon Gächter (Fehr and Gächter, 2000: 159-181) came to the following conclusion in their study of the effect of reciprocity in economics, "Reciprocity is an important determinant in the enforcement of contracts and social norms and enhances the possibility of collective action greatly. Reciprocity may render the provision of explicit incentives inefficient because the incentives may crowd out voluntary co-operation. It strongly limits the effects of competition in markets with incomplete contracts and gives rise to noncompetitive wage differences". The traditional view in economics of a human being exclusively self-interested and rational does not allow awareness of the phenomenon of reciprocity. Companies that give the employees additional benefits and show generosity and trust to their employees get better profits, while punishment and distrust lead to resistance and the avoidance of working properly. Sales managers know from experience that a smiling shop-assistant, discounts, and free samples given to customers lead to good profits. It is an example of positive reciprocity. Sustainable development requires political and economic systems to be based on the innate moral human thinking such as equality, empathy, reciprocity, fairness and justice. Human beings are neurologically unfit for strict utilitarian thinking in any field of their activities. The separation of ethics from economics is unscientific in its approach, contradicting natural laws and leading to social conflicts.

## **Conclusion**

Human beings, while acting as individuals or as groups, produce certain repeated patterns of behaviour that can be described as systems. Such systems are central to the analysis of both group and international relations. Interactive patterns of agents' behaviour can be examined at various levels of analysis focusing on the question to what extent agents have the ability to shape their destiny being constrained by external forces which we call structures. The analysis of interplay of structure and agency within the system (or subsystems in relation to the whole system) is one of the most instructive ways to study social, political and economic problems.

Moral agency is doomed to *become global* in the globalizing world. The process can already be observed now: humanitarian interventions, activities of international non-governmental human right organizations, European court of Human Rights, International court of Justice and so on.

The question of moral choice is usually central to any social argument and it is a powerful instrument in domestic and international politics. The insistence on moral

relativism by the governments of the states, in many cases, suppresses individual innate moral understanding of the world.

The increased intensity of international relations nowadays demands common understanding of this world, or in other words, working out common moral criteria for the formation of a global society. Such cosmopolitan moral values need philosophical foundations and scientific proof based on empirical findings which is necessary for the validation of scientific discoveries in the scientific community. In this paper I suggest a *philosophical foundation based on Kant's moral principles* because his moral philosophy seems to have been the best available version of a cosmopolitan approach since the 18<sup>th</sup> century. As far as scientific validation is concerned, I suggest *the findings of cognitive neuroscience related to innate moral thinking*.

The theoretical interpretations of empirical findings usually find their way in social practice, i.e. applying findings in the way we understand them. Cognitive neuroscience cannot escape this tendency because knowledge, on the whole, is a cultural phenomenon. Thus, contending theoretical approaches presented in the paper demand social and political assessment.

The insufficient study of paranormal psychological phenomena by the scientific community hinders the discovery of a new perspective for explaining of what mental states are, why thoughts can change brain waves, how thoughts can be transmitted by telepathy and what moral intuitions are and so on.

However, the increased influence of the school of ethical realism claiming that moral values are objective has been recently observed. It has been caused, on the one hand, by the findings of cognitive neuroscience in the field of moral thinking, and, on the other hand, due to the needs of the globalizing world in an objective basis for working out common moral values.

And finally, I want to say that dismantling welfare nation-states without creating a global welfare society is not a good political move because the human mind has innate moral criteria based on fairness, justice, equality, respect and empathy which are not possible to eradicate from the social consciousness.

# Public Decision Maker's Pathologies and Remedies of a Prospective Approach

**Ali SMIDA**

## **Introduction**

Numerous are the examples, studies and reports which witness, describe or indicate that a crisis is taking place in the system of public decision making in France (Conseil Economique et Social, 1998; Bailly, 2000; Galam, 2000). Public decision makers themselves admit the malfunctioning of the system and citizens criticize the evident incapacity of their Republic to manage the country administratively (Le Moigne, 1999).

What can cause the breakdown of the decision making system? Is it connected with the paradigmatic foundation of public decision making, or with the instruments used, or, perhaps, with the decision makers themselves?

Here are some important points of discussion related to decision making in France:

- In spite of some reservations concerning the ways the democratic processes are elaborated and implemented by the government, it is not a democratic choice of the government but, on the contrary, it is its deficit which causes the problem (Le Duff et Schmidt, 2000).

- As far as political economy is concerned the dissemination of ideas in favour of a weaker state at the beginning of the 1990s helped to reach the consensus among those who appreciated market economy (Osborne et Gaebler, 1992; Pollitt et Bouckaert, 2000).

- The social choice of public decision makers is the object of hot debates. It is also a social Europe which continues to oppose the public decision makers promoting changes both from different countries and inside their own countries. However, the increasing exchange of ideas enriches the thinking in this field.

- Meanwhile, the new instruments which have started to be used for public management are less and less opposed. For the last 20 years public decision makers have learnt a lot and that allowed them to manage the present realities better, (Smida, 2006) using, for example, the Management by Results, the Theory of Government, etc.

Theoretical, paradigmatic, and instrumental dimensions (instruments for decision making) in the current situation of public management also seem to be in the process of stabilization or to be subject to the theoretical discussion promoting further consideration. On the contrary, the attitudes and behaviours of public decision makers themselves are sometimes not adapted to the reality and can, therefore, be qualified as 'pathological'. Curiously, these attitudes and behaviour

of public decision makers are seldom the focus of the researchers (Bailly, 2000; Smida, 2002).

Meanwhile, the Prospective theory, which is a relatively new discipline, meant to predict the future of organisations, insists upon the importance of the attitudes of a decision maker and their adjustment to the complex reality. Berger remarks that first of all the 'prospective' is an attitude, which was turned into a method and later into a discipline (Berger, 1959). The prospective approach could be mobilized to help to solve the problems which seem to be caused by the behaviour of public decision makers.

This article examines the references of the public decision making in France, it diagnoses certain types of pathological behaviour of a public decision maker which seems to be connected with these references, and finally, some attitudes leading to the prospective approach are proposed as a possible remedy.

## **1. The principle references of public decision making in France**

The decision can be defined as “a choice which might take place between several alternatives and the solution connected with it.” (Amiel et al., 1998: 54). These alternatives are different solutions for the problem, the reactions facing the opportunities or threats and the present orientations of enterprises for constructing their future.

The representatives of the school of decision making think that the organisation, whether it is public or private, is in a permanent change trying to identify and solve its problems (Ansoff, 1965; Andrews, 1971; Cyert et March, 1970; March, 1988; Mintzberg, 1994; Simon, 1983). In the case of public organisations, it is for the public decision maker to propose the solutions. But the choice of such solutions depends on the referential mobilization which can be either formal or cognitive. In fact, all cases of decision making demand to be exactly defined as the analytical work lasting for some time and resulting in the introduction of the rupture which is 'the moment of decision'. This rupture corresponds to the modification of the decision maker's activity, with the previous work resulting in the informational output necessary for the action of choice, with the abstract and virtual becoming real and subject to the constraints of the reality.

The decisional behaviour is not the decision achieved but the consequences, which are evaluated (and not without much difficulty). These consequences can sometimes be very different from those which were originally foreseen by the decision maker. It is then that we speak about rationality and irrationality. There are numerous models of processing decisions which can be classified into two main schools of thought often presented in the framework of Kuhn's paradigms (Kuhn, 1970).<sup>1</sup> But we will prefer the reference to the paradigm which is on the whole the same (Kuhn's paradigm of a 'normal science') but which focuses mainly on the fact that the decision makers prefer to make reference only to the *particular*

---

<sup>1</sup> See Editor's Notes.

categories of information and, balancing only *particular* parameters, reach their decisions (Smida et Cadet, 2006).

### 1.1. Formal reference

The first reference is formal and axiomatic and is illustrated by the works of von Neuman and Morgenstern (Morgenstern, 1947) and of Savage (Savage, 1954). The decision making rests upon such things as probability ( $p$ ) and utility ( $u$ ), the estimation of which can be made in a valid way only by verifying the axiomatic relations expressed in the postulates related to the situation under consideration. To make a 'good decision' means to correlate one's decision making with the axiomatic rules which usually allow evaluation of the expected utility ( $p*u$ ) of each possible action and deciding in favour of that which has more expected utility.

The decision is determined by the criterion of maximization of the value in the case of gains or minimization of the consequences in the case of losses. This approach is widely used in economics. However, the formal approaches are rarely used by a decision maker placed in a real situation or by any of us when we are to choose. We tackle the situation spontaneously, in a more 'natural' way (Zsombok et Klein, 1997), more often starting from the estimation made outside all axiomatic references. The situation is treated with the help of mobilization of cognitive resources such as attention, perception, and memory by applying different procedures of evaluation of the informational significance.

However, there is a split among researchers concerning the priority of either axioms and theoretical models or the intuition of experts and managers. Concerning the polemic with Michel Godet about the place of estimations of experts in the determination of interconnected impacts, McLean (McLean, 1976) notices that concentrating attention on the manipulation and clarification of estimated probabilities, the approach of interconnected impact omits the fact that such estimations are not the purpose in itself, but temporary substitutes for understanding the causal structure of socio-economic processes. According to Olaf Helmer (Helmer, 1981), knowing the regularities of the laws, we, however, feel the necessity of completing them by intuitive visions as practitioners. The Nobel prize-winners Daniel Kahneman and Amos Tversky claim that individual decision makers (as is often the case of public or private managers) do not confirm the traditional hypotheses of rationality. Moreover, the cognitive means of the axioms of probability are simply neglected (Kahneman, 1994; Tversky et Kahneman, 1981).

### 1.2. Cognitive reference

It is the second reference which is more widely used and which is formed on the basis of totally different conceptions. It is connected with the processing of information and could be summarized on the whole as follows (which may not seem evident but which, however, is): for better decision making, it is necessary to consider the most valuable pieces of information as, for example, in diagnosis. The criterion does not constitute the reference, the reference has a procedural character.

We find this trend in psychology, starting from the experimental works by Hogarth (Hogarth, 1980), von Winterfeldt and Edwards (Winterfeldt and Edwards, 1986), and also Cooksey (Cooksey, 1996).

This trend can be called cognitive. It differs from the first one (formal reference) in the way that we do not decompose situations analytically into dimensions. We start processing and evaluating them using an overall judgment, or the representation of the situation (Kahneman and Tversky, 1979). The research in cognitive science carried out since the 1980s shows that we have passed from ‘the normative models to cognitive processes’ (Cadet and Dracon, 1999) or from the formal reference to the cognitive reference.

There are numerous works belonging to the latter trend which demonstrate that preferences of decision makers are based on simple cognitive strategies and possible efficiency is studied within the framework of the prospective approaches by Kahneman, Slovic and Tversky (Kahneman, Slovic and Tversky, 1982) and by Gigerenzer (Gigerenzer, 2002).

In management science, the passage from the approach based on the models of the 1970s and 1980s to a more cognitive approach developed in the last 15 years illustrates also the tendency of transcending disciplines (Lauriol, 1995). A complex approach or a system approach, which we can observe if we turn to both humanities and natural sciences, shows also the importance of this trend which gives a preferential place to qualitative and global methodologies at the expense of exclusively analytical and decomposing techniques (Avenier, 1993; Genelot, 1992; Le Moigne, 1990; Morin, 1990).

In France, a public decision maker seems to fluctuate between two references. Educated within the walls of the “Grandes Ecoles Françaises”, the decision maker is often tempted to use formal reference. But this tendency has become less prominent because of the emergence of new approaches of public management (Smida, 2006). The cognitive reference tends to occupy a more important place. But it is marked by the tradition of centralization of public power and the determining role of a welfare state, which seems to result in producing a subsequent long-lasting kind of behaviour of public decision makers in France.

### *1.3. The suggested typology of long-lasting behaviour of a decision maker*

In this work we only consider the long-lasting behaviour (recurrent or chronic).<sup>2</sup> The table (Figure 1) shows two types of long-lasting behaviour (on the left of the table): ‘normal’ and ‘not normal’. The ‘normal’ behaviour is understood as pragmatic and rational integrating the return of information for adjustment of one’s decision (Simon, 1957). If it is the opposite case, the behaviour will be considered as being outside the norms or ‘not normal’. These types of behaviour can contribute positively or negatively to the realization of the objectives initially fixed

---

<sup>2</sup> Here, we exclude the case of occasional behaviour which leads or does not lead to the realization of objectives. In this case one can speak about occasional mistakes or unforeseen cases.

by the decision maker ('consequences after the realization of pursued objectives' in the table).

	Consequences after the realization of pursued objectives	
	Positive	Negative
Long-lasting behaviour 'normal'	'Prescribed' behaviour	?
Long-lasting behaviour 'not normal'	'Creative' behaviour	'Pathological' behaviour

Figure 1. The types of long-lasting behaviour of a decision maker.

The interaction of these values ('normal' or 'not normal' types of behaviour, on the one hand, and the consequences, on the other hand) produces three types of a decision maker's behaviour ('prescribed', 'creative' and 'pathological'):<sup>3</sup>

- The *'prescribed'* behaviour is usually considered as 'normal'. It focuses on the objectives sought for as 'anticipated';
- The *'creative'* behaviour is 'unexpected' but it gives positive results, nevertheless. It is, for example, the case of intuitive understanding (insight);
- The *'pathological'* behaviour is expressed in the decision maker's persistence in reproducing the same behaviour in spite of the manifestation of negative consequences for the realization of his objectives.

In the case of the French public decision maker, there seems to be an adaptation failure of the decision making system. There is a gap between the decision making and the realities in the country and even in the world which is caused, to a great extent, by the legacy of power centralization and the ways of taking decisions (Conseil Economique et Social, 1998; Bailly, 2000).

This gap has appeared due to the difference of the rhythms of change:

- The environment, whether internal or external, has been developing very fast: political, economic, technological and social interdependence and rapid change of behaviour of citizens;
- The public decision making has been too slow in adjusting to that. It seems to be still the prisoner of historic bureaucracy of public administration.

The old fixed visions in the culture and history as well as the paradigms and the theories which are used by the powerful decision makers constitute a great force for resistance to changes. Some researchers believe that the power holders of the old order always oppose fiercely alternative visions (Kuhn, 1970; Armenakis et al., 1993; Kanter, 1987; Kirkpatrick, 1985; Pettigrew, 1987).

<sup>3</sup> The case of long-lasting behaviour which is 'normally expected' but which has a negative consequence is incompatible with this model.

In any case, different references, in particular cognitive, determine partially the behaviour of a decision maker who, in his turn, produces an impact upon decisional processes. Figure 2 schematizes the interconnectedness of these values in a very simplified way. This figure shows that an adapting failure of the decision making system can find explanation in the behaviour of the decision maker. The gap between the reality of life and the decision making process in France is caused by a form of behaviour which we can characterize as pathological.<sup>4</sup>

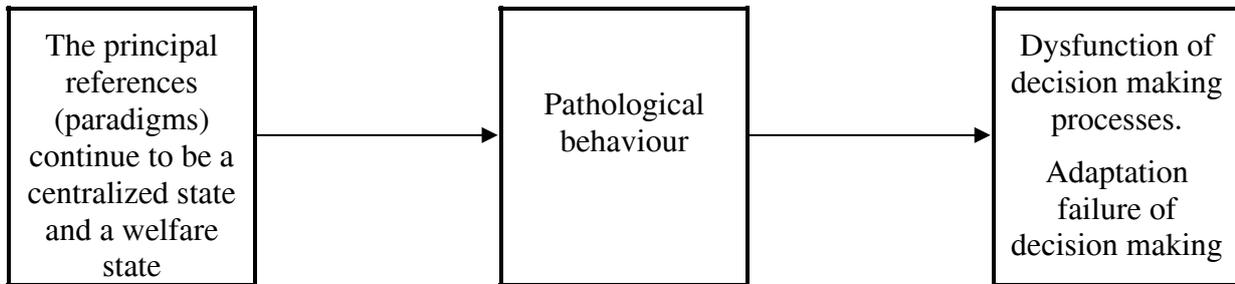


Figure 2. The schematic interconnectedness between references, behaviour and decisions.

## 2. Pathological behaviour of a public decision maker in France

Pathology is a term used in medicine. It gives the name to the field of science where the disorders affecting both the disposition of organs and the processes of ‘normal’ functioning of these organs are studied. Two principal branches are usually distinguished in medical studies (Dictionnaire de la Langue Française, 1998):

- the external or surgery pathology belonging to the disorders which can be treated by practical intervention with the help of different instruments. It usually takes place at the level of the anatomy of the organ;
- the inner medical pathology demanding remedies of a medical character or hygiene. It usually involves processes.

In these two cases, pathology denotes either lesion or physiological dysfunctioning. Using these medical definitions, we consider as pathological the long-lasting behaviour of a decision maker who ignores generally admitted norms. This leads to the consequences or the results preventing the realisation of his decision.

Continuing the above-mentioned medical distinction we propose distinguishing pathological behaviour based on the pathology of the public decision maker as an individual (‘inner’ pathology) from the behaviour characterized by the pathological relations to environment (‘external’ pathology). We shall call the first type

---

<sup>4</sup> Pathology is a manifestation of the excess or deficit which violates a ‘normal’ state of good health for a patient. So, we have two types of pathology which affect a decision-maker: the pathology of excess and the pathology of deficit.

*'particular pathological behaviour characterizing the decision-maker'* and the second one *'relational pathological behaviour'*.

### *2.1. The 'particular pathological behaviour' characterizing the decision maker'*

#### *The 'national retrenchment' behaviour or the behaviour of a 'coq gaulois'<sup>5</sup>*

Facing interior and exterior changes, the public decision maker guards his old conceptions of centralization and protectionism. He presents himself as a guardian of the good and takes upon himself the right to take care of citizens. This behaviour can also result from the social representation. The decision maker thinks of himself as invested with this mission and resists all changes that can endanger certain elements considered to be a cornerstone of social representation (Abric, 1994; Guimelli, 1994): the vision of the state being of the superior importance and the 'mission' to protect the culture or the image of the country.

But this immobility and the quasi-systematic recurrence of the old vision concerning the role of a public decision maker have been shaken very much by the contemporary world realities. A certain national vision inherited from the past can, for example, result in lagging behind in the fields of certain technologies. Thus, clinging to Minitel<sup>6</sup> and wishing to give the opportunity to French technologies to compete in the field of Internet, the public decision makers were late to introduce and spread the latest foreign technologies in France, and they also blocked American methodology of heating blood waiting for the development of the French own methodology, thus allowing the spread of HIV and in the haemophiliac cases blood contamination. In the end, the Department of Justice demanded those Ministries of the Republic that were involved to give the explanation, and, subsequently, some higher officials of France were even sentenced to prison.

#### *The 'cartesian' behaviour*

Being absorbed in applying analytical tools, the public decision maker isolates an element for study and believes that it is possible to study the element cut off or isolated from other elements. In this case, the risk of exclusion arises and entails, in its turn, a violent reaction on the part of the excluded, often obliging a public decision maker to 'reconsider the case'. There are numerous examples for this. Let us take the case of PSD ('prestation spécifique de dépendance', i.e. special allowances for dependency – the aid aimed at improving the care for elderly dependent people). The senior citizens' homes, being the main actors for retired citizens, were ignored in the first legal texts, which aimed at improving the care for

---

<sup>5</sup> The cock ('coq' in French) is a symbol of the French national pride.

<sup>6</sup> The Minitel is a Videotex online service accessible through the telephone lines. It was launched in France in 1982 and is considered one of the world's most successful pre-World Wide Web online services.

the ageing population. A great mobilization was necessary for the senior citizens' homes to modify the initial text.

The instruments of making decisions have also been inspired by the analytical study and in the majority cases are subject to pure economy of logic. Even political mass media are often characterized by a strong inclination to parcelling, determinism and quantification. In the French high administration, as Gimbert asserts (Gimbert, 2000), in the 1960s and early 1970s, people believed only in rationality. They applied models excluding feelings and thought that the social life was structured like a material object. People were under the influence of the structuralist thought of the 1950s. For them, everything had a structure.

### *The behaviour of mental blindness*

In fact, we find a paradox in the situation which makes a public decision maker (an agent) to achieve the result that he did not want and he even feared; and more often that he did not expect at all (Cadet, 2000). Some authors (Beck, 1982; Godet, 1985) qualify these error deviations as a phenomenon that originated in the inadequate information or in the behaviour of actors who found themselves modified by the 'effect of announcement'. It could produce self-defeating or self-fulfilling ways for decision making. Edgar Morin (Morin, 1990) distinguished three principal sources of judgment error:

- the facts are not correctly recorded due to inadequate information,
- the failure of reasoning is caused by logical mistakes,
- it is the type of mind which is poor at seeing and understanding things, i.e. the so-called 'mental blindness'.

This last source of mistakes is the worst and has two forms. The first one, which is the most frequent, is the blindness we have while thinking about something which seems evident and natural. The second is caused by the analytical framework not suitable for the analysis of a given problem. Such behaviour of mental blindness (Morin, 1990), or irrational behaviour (Cadet, 2002), besides being a cause of repetitive mistakes (Beck, 1982; Godet, 1985) is also a cause of other deficits.

### *The deficit of voluntarism*

The research in cognitive sciences (Costerman, 2001) shows that different ranges exist for decision making. The choice of action can mobilize the minimum of cognitive resources: attention is limited, the analysis is rapid and general, the accumulated information is of little importance and the activation of memory is brief and dominated by automatisms. However, if the situation is new, and if it involves deep personal engagement (affective or financial), or if the stakes are high, etc., all the functions prove to be activated much better and the totality of resources, knowledge, and attitudes the decision maker has at his disposal turns out to be mobilized to deal with the situation.

But even in this case, the weight of bureaucracy can hinder voluntarism. The public decision maker finds himself inclined to reason along the traditional lines and according to the continuity connected with the world of stability and certainty.

He finds his refuge in the existing recipes which can be applied in the case of an emergency to calm down a troublesome situation in a superficial and temporary way. The dealing with 'revolts' of the youth in the suburbs or the grievances of students related to CPE ('le contrat du premier emploi', i.e. the Contract of the first employment) are the examples of this 'based on short term reasoning' behaviour of decision makers. It is clearly seen, however, that the rigid vision of the past transferred and imposed upon the future reveals its inability to provide the decision makers with the images of the future they need to determine their policies and to be prepared to overcome or diminish obstacles or to outline them in order to seize the opportunity whenever it might be possible (Zentner, 1980). If these decision makers are content with the opportunity of using recipes of the past, a thing which seems to happen rather often, the decision making processes can lead only to the dysfunction that will occur very often.

## *2.2. The 'pathological relational behaviour'*

### *The behaviour of rationalization*

"The word *rationalization* is correctly used in pathology by Freud and by many psychiatrists and shows the desire to frame the reality in a coherent system. And all that in the real life contradicts a coherent system is omitted, forgotten, pushed aside, regarded as an illusion due to appearances" (Morin, 1990: 94). This behaviour is the result of the exaggerated confidence in the theories and dominant ideologies. The decision maker, thus, refuses to doubt and to question the ideas and the proposed solutions based on the theoretical system or ideology to which he adheres. For him, the reality must obey the theory. However, it is the theory which should be tested by reality and if there is a dissonance, the solutions must be questioned. This type of behaviour shows that the decision maker forgets that 'the map is not the territory' by neglecting the evidence and doubts.

For him the system comes first, the individual must not have interests which contradict the interests of the system. But Nietzsche once remarked that it is not doubt which makes us fools but certainty. The extreme and exaggerated rationalization in the sphere of public decision making was observed in the planned economies of the old Soviet bloc. It can also be seen, of course to a lesser degree, but, nevertheless clearly enough, in the centralized and planning countries such as France. The public decision maker considers himself to be responsible for the protection of the working mechanism of the system based on the established rules by and for the system itself. He retrenches himself behind the laws and rules and becomes their prisoner. He becomes insensitive to all forms of flexibility and compromises. And rather often, when he accepts engagement into negotiations, he uses it as an alibi for the decisions already prepared in advance.

### *Obstinate behaviour*

Lewin (Lewin, 1947) studied the phenomenon which he qualified as a 'gel effect' of decisions and which manifests itself in the obstinacy of a decision maker who maintains his initial decision as it was at the very beginning in spite of the

present evidence of its inappropriateness. In other words, according to the process of adherence, when the subject perceives himself engaged in the first decision he tends to maintain this decision even if the change of circumstances makes it inappropriate. This behaviour is quasi-pathological and the obstinacy results from the fact that certain decision makers are too much confident about their ideas, and their confidence serves them as the proof in their eyes for the necessity of pursuing their initial decision without sufficient analysis of the forces of inertia involved. Soon the contradiction between their propositions and the facts becomes evident.

It especially refers to those who have too much power due to power centralization. They admit dialogue with difficulty; they take 'their desires for the reality' and think that they are the only ones who can decide whether to introduce changes or not. The theory of Engagement shows that their understanding of liberty and power reinforces sometimes their obstinacy. Brasseur (Brasseur, 2002) claims that this theory gives evidence to the tendency to preserve the line of the existing behaviour when the environment allows and when the original behaviour was for a situation of this kind. Finding support in the theory of Cognitive dissonance, the theoreticians of Engagement consider that attitudes, opinions and beliefs are formed in the process of rationalization of the behaviour to maintain our cognitive structures in the consistent state.

### *The 'spasmodic' behaviour of decision makers*

The majority of decision makers, particularly in the public sector, have a habit of working in a state of emergency (Riveline, 1991). Even if some dose of moderate emergency can be regarded as stimulating, the lack of time for assessment of the events and the lack of anticipation are often the source of maladjustment of actions and, thus, of dysfunctioning. In an emergency the public decision maker is the object of decisional spasms (Hatchuel quoted by Bailly, 1998). But as Michel Godet (1992) stresses, anticipation must be prior to an efficient action because to decide and to act, it is necessary to anticipate the action first. One should always continue asking oneself 'difficult' questions to avoid strategic mistakes.

### *Behaviour showing the deficit of assessment of the informational flow*

The criteria used by the public decision maker are often predetermined. One tries to search for the information which is believed to be exact, meanwhile it has already become obsolete before being found. And even if it is exact and up-to-date, it will be necessary for the public decision maker to readapt or readjust the strategy, because, in fact, the new values have modified the information acquired by the decision maker and made it out-of-date. The recent studies of 'limited rationalities' show that all new elements must be questioned in the context and in the light of the rationality itself (Cadet, 2000).

Limited rationality is contingent because it proceeds from the cognitive elaboration carried out in a particular situation, and because it depends on the available information in the context at a definite moment of the process of decision making (Simon, 1957). Limited rationality is also emergent in the sense that it

disengages itself from specific information which characterizes a given system at a given stage of evolution. But the mentality forged by the bureaucracy does not permit questioning: it can only survive, not because of its capacity for adaptation but due to its fluctuation and weakness (Mandraud, 2007). The culture of centralization, the habit of working in an emergency, the belief that the citizens must be protected by a welfare state, are among the factors which form the behaviour of a classical public decision maker in France and affect him in several ways: he is in favour, in particular, of the action at the expense of reflection. The public decision maker tries to act quickly without allowing the time for the ideas to mature and if he decides to consult the persons concerned, he will opt for a quick consensus which does not bring any decision but only an apparent legitimacy. To deal with the recent changes in the world, the public decision makers must have a different culture: one that admits other language, accepts concessions, and that has not only the vision of a nation state but also the vision of a ‘global village’.

### 3. The prospective approach: possible remedies for the pathology of a public decision maker

These pathological types of behaviour of decision makers which have been observed by a lot of researchers are the source of dysfunction of the public decision making in France. To improve it, it is necessary, as some authors claim to renovate the existing instruments of decision making or to propose other instruments more suitable to the present complex reality. However, before doing anything the behaviour of the decision maker himself should be modified. Such modification is expected to take a long time and, in this case, the prospective approach can contribute to the change of behaviour of the public decision maker.

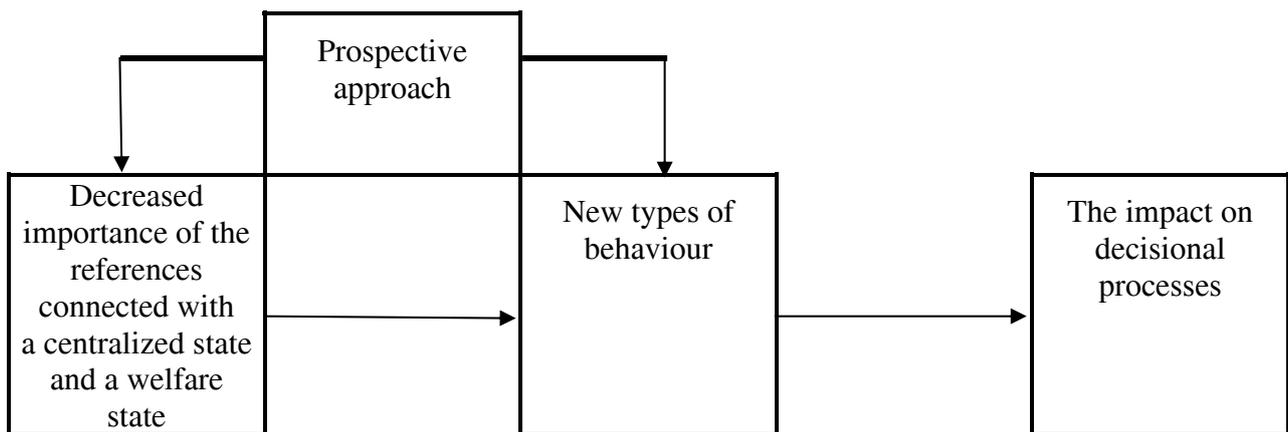


Figure 3. The contribution of the prospective approach.

#### 3.1. The attempts to respond

Approximately fifty years ago some researchers in the field of decision making were aware of the limits of the instruments used and advocated the study of a more

suitable approach for the context. Morgenstern (1950, preface) stated that the universe in his epoch was already "...stochastic. That is why defining principles of our theoretical constructions must open the way to new forms which will allow us to take into account the irreducible uncertainty of our knowledge". This remark is still very relevant to the contemporary world because of two reasons:

- complex reality which the decision maker faces at present is far from being explained by classical methods;
- history and context which has led a public decision maker to adopt certain behaviour has created, as it turns out, a gap between the decision and reality.

To understand the complexity, some authors have developed global thinking, favouring the systemic reflection (Probst, Ulrich, 1989) and others have proposed a complex approach (Morin, 1990) which rests on three basic principles: the 'dialogic' principle, the principle of 'recursivity' and the principle related to 'holography'<sup>7</sup>. Some also advocate the "reinvention of the 'deliberation' as a creative complex and not as an artificial procedure of manipulation with the aim of forcing consensus. Everyone complains in the democratic countries about a manipulating character of a multiplication of deliberations used to justify the decisions already implemented. And we do not take into consideration the fact that no one has been taught to argue, to form a judgment, to supply himself with the information, and then to reform his judgment, in one word 'to deliberate'" (Le Moigne, 1999: 221).

Being aware of the deficit of public debate, the public authorities started the initiative of encouraging citizens' forums. Here also certain rituals seem to take place: meetings analyzing a general state of food supply, education, science and environment. Recent practice seems to orient the public decision maker in search of a legitimization of his decisions concerning some new departments or establishments before giving them a legal status. This approach was, for example, used for starting the gerontological network (Journal Officiel de la République Française, 2000).

But the attempts to adjust the instruments of decision to the present reality or to involve citizens in reflection on the affairs concerning these instruments come across the blocking behaviour of the public decision makers. Therefore, the majority of these attempts to reform public decisional process do give poor results because only in rare cases do decision makers take them, indeed, into consideration. Very often, as soon as the 'grand meeting' is finished, everyone returns to his work and continues to apply old recipes (Falloux, 1998). But when a decision maker really tries to apply new methods, the numerous dysfunctions appear, because the old behaviour continues to be a source of serious blockage. For example, the PSD ('prestation spécifique dépendance', i.e. special allowances for dependent people) for French aged people was an experimental approach in the period of 1997-2002. This experience was aimed at consolidating the legitimacy of

---

<sup>7</sup> See Editor's Notes.

public decisions and clarifying the view of public authorities themselves, but it ended in failure.

### *3.2. From the prospective approach to the attitude of public decision maker*

The prospective approach, which manifests itself in different ways (voluntarism, openness), could, in our opinion, help the public decision maker improve his performance and solve the problems he faces, make the choices he has to and manage the projects he has proposed. It could, in particular, affect the behaviour of the public decision maker emphasizing a kind of ‘mental re-engineering’ by freeing the decision maker from the historical burden of centralization and ‘dependence’ from classical instruments. Some founding fathers of the prospective approach such as Gaston Berger and Pierre Massé also think so. They were themselves higher officials and served as decision makers.

Whatever the level the decision maker may have (state, central administrative, regional or local) he has, to a different extent, to confront with a complex reality he cannot totally master. Success and failure are often connected with such a perception of this reality and depend on the behaviour and attitudes he has to this reality. The metaphor ‘the king’ was proposed by Bertrand de Jouvenel (de Jouvenel, 1970) who saw the decision maker presiding over all but managing nothing. The supreme public decision maker is a core of the system of extreme complexity, but he can only act in the fields which he can comprehend. It is his attitude which helps him understand the complex system. The method of the prospective approach uses the instruments and techniques adjusted to the complex reality, and it always bears the evidence of the importance of the decision maker’s attitude.

#### *The attitude resolutely turned to the future*

In introducing the concept of the ‘prospective’, Gaston Berger wanted to outline a new vision of the future and propose a new approach towards the future and new methods for anticipating rapid changes which can assault us (Berger, 1964). The first dimension of this approach is to regard the attitude to the future as the true lever for actions. The past should be used by the decision maker only to search for landmarks, tendencies and constancy. The past has already been realized, it is unique, and there is nothing to be done for its change. It is the future which is to be invented and realized. It is the project where the possibilities are still open. At the beginning of the 20<sup>th</sup> century, Herbert George Wells, who is regarded as a forerunner of the prospective approach, drew attention to the necessity of human action resolutely directed at the future. He also emphasized that it must be extremely stimulating and profitable for our intellectual life to consider historical, economic and social studies with the reference to the future and to be more preoccupied with the future by thinking about it constantly, deliberately and courageously (Wells, 1904). This priority given to the future is necessary for acting at present but not for adopting a contemplative attitude. The place reserved for the future in thoughts, actions and preoccupations of the decision maker should be as much important for him as it is for the life of any man in the society and the

society itself. However, at present, the public decision maker only allows limited preoccupation with the future: he is more concerned with the solution of the present problems. Within the framework of the prospective approach, the decision maker is oriented towards the future and he does not try to hide himself behind specialists and instruments to avoid thinking about the future by himself.

### *The attitude permitting the decision maker to have a far-seeing vision*

The prospective attitude is to foresee tendencies in the distant future in order to choose the direction and prepare better for the actions in the present. This far-seeing vision gives sense (direction and significance) to decisions. The prospective approach does not seek to predict but to make sense of the present decisions, at the same time to indicate the main directions of change and to explain the meanings of actions by finding explanation for them. This approach is more about the states than events. The preparation for the future, this attempt to anticipate the future becomes a necessity due to the quick changes at all levels, particularly the technological level which characterizes the modern time. The horizon of the prospective study is not measured by the number of years, even if it is admitted that the prospective approach is connected with the distant future. As the phenomena concerned are at a risk of being ruptured and each of them is able to produce different scenarios, the horizon should be estimated according to the degree of uncertainty and probability of endangered stability of the system or the phenomenon (Smida, 1999). The shorter the duration of the life of the structures concerned - which is more and more the case observed - the closer the horizon for the use of the prospective approach.

### *The attitude characterized by permanent questioning*

The attitude implying future and directed at the distant future is accompanied by questioning the evolution and interdependences of the phenomena under consideration due to the decisions and the impact of these decisions in connection with discontinuities and bifurcations involved. The following five questions can serve as a guide for the understanding of the attitude of questioning (Godet, 1998): What can happen? What can I do? What am I going to do? How to do it? Who am I? The last question is the most important one because it allows the introspection which helps the decision maker to learn about himself. It is not only awareness but also permanent attentiveness which causes us to ask questions, to interrogate, to search in order to understand. Einstein considered it essential never to stop asking questions. This attitude allows reasoning with regard to the duration and gives the coherence and consistency for decisions. The decision maker can use the time in putting questions and trying to answer them until a certain situation and reflection mature without useless debate, without pretending to achieve consensus and artificial compromises. This attitude of questioning can allow the decision maker to insure consistency and time for important initiatives to follow. This essential aspect of the prospective approach can be, indeed, very helpful for the decision maker (Bailly, 1998).

### *The attitude of openness*

Berger claims that in human affairs all actions like all decisions are synthetic (Berger, 1959). The attitude proposed by the prospective approach, which could serve the public decision maker well, has a wide perspective taking into consideration interdependences and the complexity of present phenomena. It is necessary to be ready to listen to different opinions and to overcome the narrowness of specializations. It could help the decision maker pursue principal activities at best:

- solve the problems which emerge from administration, institutions or a firm, and which are in perpetual change (Cyert et March, 1970; Simon, 1983; March, 1988);
- prepare for the future (Berger, 1959, 1964; de Jouvenel, 1972; Massé, 1967-a, 1967-b; Lesourne, 1981; Godet, 1996; Smida, 2007).

However, these problems are not so evident for an observer, that is why an important aspect of the processes of management seems to be dedicated to the search and the hierarchy of these problems (Louart, 1999).

The future possibilities are not easy to imagine and, moreover, to get prepared for. The decision maker, due to his attitude of openness, is supposed to give an impulse to the conquest of the future (Hamel et Prahalad, 1993).

The openness towards diverse specialties, the possibility of minorities to express what they think about the current situation and permanent questioning could help discern the problems better and establish the priorities, i.e. to decide best and urgently. They could also enlarge the field of future possibilities or “*futuribles*” (de Jouvenel, 1970).

### *The attitude based on deep and creative analysis*

The focus on the future necessitates a deep analysis. This requirement makes the public decision maker feel dissatisfied with the present procedures frequently used for suggesting or justifying the decisions. In fact, the action often rests on the precedent, analogue and extrapolation. It is widely held that the same causes produce the same consequences, and that the phenomena reproduce themselves identically. The required attitude to the analysis and the creativity is, on the contrary, to try to apprehend the future with its proper ingredients, i.e. events, variables and elements mostly new, with all of them resting on the determinants, tendencies and the facts connected with the future and influencing the behaviour of people and societies.

According to Pierre Massé (1967-a), the analysis of the phenomenon must reveal the facts connected with the future, i.e. the signs or forerunners of the future changes. This required attitude admits that it is in vain and dangerous to search, at any price, for an imaginary precision to which classical instruments founded on ‘cartesianism’<sup>8</sup> have been attached for a long time. The prospective attitude privileges the comprehension of mechanisms which govern the dynamics of the phenomena under consideration, the behavior of actors and the inner coherence of

---

<sup>8</sup> See Editor’s Notes.

every future scenario, rather than the precision expressed in figures about the dates or quantities. The prospective vision is not granted free, it is the compensation similar to 'bergsonian'<sup>9</sup> intuition, which we often misunderstand, and which is the result of long analytical work. Simplicity is something that we have to conquer (Berger, 1959).

### *The courageous and voluntarist attitude*

The prospective approach inspires the public decision maker to take a risk. Berger asserts (Berger, 1959) that the investigation within the framework of the prospective approach is a courageous act and that we can, in the course of development, modify our actions so as to adjust them to the circumstances. The recent studies in decision making associated with the problem of change, consider that a good manager or a decision maker is supposed not only to take the risk of being involved, due to the voluntarist attitude, but also to have courage to disengage and be ready, at any moment, to change the decision (Brasseur, 2000).

For Gaston Berger, the prospective approach, more than other methods of search involving the future, sets itself free from the purely contemplative attitude and helps to act. Bertrand de Jouvenel (1965, 1972) sees in the prospective approach the possibility of giving a new freedom for the imagination of the future and working for it, thus it gives a man a new participatory citizenship and the power to construct possibilities for the future choosing the most desirable. Besides voluntarist (Wells, 1904), anti-fatalist (de Jouvenel, 1972) and anti-chance (Massé, 1967-b) attitudes, the prospective approach supports, first of all, the idea that the future should be handled and rejects all passive and timid attitudes connected with the desire to preserve old comfortable security. It permits the public decision maker to pass from the attitude of retarded response lagging behind the events and being punished for that to the proactive attitude which makes the public decision maker a real leader who provides society with the impulse for actions.

### *The attitude which places man in the centre of preoccupations of the public decision maker*

The prospective approach means the public decision maker's constant thinking about man placing him in the centre of his preoccupation. Berger points out (Berger, 1959) that the prospective approach is attached to a human factor. Large scale events and technical progress are interesting only from the point of view of their consequences for man. In the prospective study, it is the man who provides the scale. The public decision maker and public institutions which do not reserve a central place for the man are subject to the risk of losing their mission.

It is significant for us that the Academy of Sciences in France is the object of criticism because it does not pay enough attention to the place of man in the contemporary technological system.

---

<sup>9</sup> See Editor's Notes.

Another institution, the Academy of Technologies, born in the recent years, is less criticized: it often explains the public decisions on the basis of the impact of new technologies on man and society (Morin, 2000).

The public decision maker has to take into account the consequences of new technologies and to find the mechanisms to master them (Berger, 1967). This attitude also shows that the future is not a fatality, which obscure forces or uncontrollable environment are going to impose on man.

The public decision maker should permit a citizen and society to take responsibility by themselves and for themselves in the future. The future will become a new space of freedom for them. It will be associated with the choices and planned strategies for the construction of their destiny. There is a multitude of future possibilities and one should prepare oneself now to have a better chance for choosing among these possibilities in the future.

## **Conclusion**

In France, the present system of public decision making was created and shaped by the circles of centralized power during the decades of the use of the instruments conceived for a relatively simple system and for a stable environment. The present system of public decision making is characterized by the increasing gap between the national context and the international contemporary context.

Attempts have now been made to apply instruments and approaches more apt to the apprehension of the present complex reality. It was due to the failures of dealing with the reality caused by the blocking behaviour of the public decision makers who displayed an adherence to the past and to the feeling of security behind the old model of decision making. Action directed at changing the behaviour of the public decision makers should precede all reforms in the field of public decision making. This task is not, of course, easy, that is why it is easier and more tempting to change the instruments than to try to introduce changes in people's habits, attitudes and behaviour.

The prospective approach, if used by the public decision maker, would lead to tackling present-day complexity on the basis of a new mentality. This mental preparation would allow the public decision maker to free himself from the constraints which have been imposed on him in the course of history, and to put aside the classical instruments which have reassured him but which do not adequately match the present reality.

# Globalization: What is Going on in Practice and How it is Explained Theoretically

Gérard LAFAY

## Introduction

Globalization has its origins in the conjunction of two historic movements. On the one hand, it is the emergence of the Third industrial revolution marked by the continuing decrease of transport costs for containers and the explosion of new information and communication technologies, and, on the other hand, the spread of the market economy by the liberal wave following the collapse of the communist system.

We observe the increasing role of enterprises behind these changes in parallel with the permanency of nation-states. These enterprises are the principal vectors of this process. In the first part we will examine how these enterprises have made globalization work. In the second part we will consider theories offering an explanation for this phenomenon.

## 1. Implementing globalization in practice

In the past the theory of international exchange focused only on nation-states neglecting the important role of enterprises. However, it is evident that it is enterprises which produce and essentially affect economic relations between territories. The global market constitutes the field of action for these enterprises. Big corporations implement their production strategy in such a way that they might respond to or direct global demand, and these corporations introduce their own supply by localizing their production in different territories. Increasingly, middle-sized enterprises have the same concerns. Even small enterprises which are seldom able to produce in other countries have to rethink their strategies taking into consideration the competition in the world market.

### 1.1. *Two logics of the global space*

The logic of enterprises does not coincide with the logic of a nation-state. An American author Robert Reich (Reich, 1991) arrived at the extreme conclusion claiming that national economic interests had nothing in common with the interests of big corporations coming into existence originally on their territories. He thinks that the old adage “what is good for *General Motors*<sup>1</sup> is good for the USA” is an obsolete conception. Having both the global vision of the evolution of markets and

---

<sup>1</sup> General Motors Corporation, a multinational corporation and the world’s largest automaker, was founded in 1908 in the USA (ed.).

the conditions for costs these corporations observe only their own interests in localizing the production directly or indirectly in the territories of different nation-states. The national productive system has recently shown a tendency towards absorption by the system of world production and has at its disposal only the instruments of macro economic policy: a nation-state has to be content with making its national territory attractive for enterprises whatever origin they may have.

In reality, for the big industrial countries this is not quite the correct conclusion. The majority of corporations show national characteristics though their field of activities may be world-wide. It concerns not only small and middle-sized enterprises which are engaged mainly in the domestic market but also big corporations which have become deeply globalized according to their field of activities. They continue to be attached to the country of their national origin by their capital, culture and principles of management. Everyone agrees it is not the same to work for an American, Japanese or German transnational corporation. France constitutes the exception in the regard of 'the management of enterprises' due to the weakness of its capitalism. The funds of Anglo-Saxon Pension Funds constitute a share of more than 40% of the capital of the 40 biggest French companies (CAC 40<sup>2</sup>) having a real possibility of the 'management of enterprises' and make the French companies constantly think about the menace of the Public Offer for Purchase.

We also observe new complementary factors between a nation and enterprises. Whilst enterprises continue to expand their activities internationally and financial capital becomes more and more mobile the national public-owned infrastructure, as one of the main factors, continues to be attached to the national territory. Besides, each nation wants to preserve its identity, and it results in attempts to limit labour migrant flow both out of and into the country.

The territory of a nation-state is attractive for production by local or foreign enterprises if it offers favourable conditions. *As far as the supply is concerned*, the attractiveness exists in the real exchange rate as well as in the quality of the territory: whether it provides maximal benefits from the qualifications of the workforce, a low salary cost of different categories of employees, a potentially high level of research and development capability, a developed transport and communications infrastructure, a good fiscal environment and legal regulations favourable for investment. *As far as the demand is concerned*, the host country obtains new opportunities and a steady growth rate in making the territory attractive for investment by local and foreign enterprises. Nation-states compete in order to attract these enterprises.

At first glance no matter may it be the USA, or Japan, or Germany, or even France, the decisions on the national territory to which foreign enterprises

---

<sup>2</sup> On the indicators of these 40 companies the index CAC 40 is built. The CAC 40 is a market value-weighted index of 40 richest French companies according to the number of issued shares by a company (ed.).

effectively contribute by creating jobs and wealth do not seem to differ among different establishments. Meanwhile, the criterion of the nationality of enterprises continues to play an important role, not only in the case of crisis, but also for the strategic decisions of productivity and the strategy of enterprises. It is characterized by durable relations of confidence not only between the state and the enterprises of the same nationality (mutual economic understanding, national system of innovation), but also among enterprises themselves (privileged partnership with national sub-contractors, the role of professional organizations). This 'economic patriotism' is practised everywhere, and it is more efficient than the isolated system of management of separate units conceived exclusively for making quick profits.

### *1.2. Old international economy*

In these conditions international economy functions whilst facing great changes.

Beginning from the end of the 19<sup>th</sup> century the logic of economic development of all industrial countries was marked by the continuous progression of salaries due to the simultaneous actions of two forces: the compensatory role of trade unions and the social attitude of the union of entrepreneurs.

a) The compensatory role of trade unions in the market economy is explained by the inequality of work contracts. According to Charles Brook Dupont-White (Villey, 1964), the isolated salary is, in fact, placed in the disadvantageous situation where, on the one hand, work is a perishable commodity and, on the other hand, wage is an urgent want. The collective agreements negotiated by powerful trade unions appeared to be, thus, a means for preserving equilibrium in the labour market.

b) The social attitude of entrepreneurs can be considered as a 'Fordist' compromise which was applied initially by Henry Ford in the USA. Having overcome local paternalism the world of entrepreneurs recognized the advantage of wage progression and national social regimes, which offered the possibility for mass internal consumption, guaranteed social peace and after 1945, protection from the challenge of the communist bloc.

In all economies managed by this social pact, the investment choices of enterprises were aimed at the envisaged development of the economies of territories of their origin, both concerning the demand and the supply. Every nation had its own dynamics of growth. From that time economic relations with the rest of the world focused on regulating the variations of relative prices<sup>3</sup> between territories reflecting the disparity of external exchanges. When relative prices rose too high, the domestic economy continued its trajectory, meanwhile external

---

<sup>3</sup> Relative price is the price of a commodity such as a good or service in terms of another. It is the ratio of two prices and may be expressed in terms of a ratio between any two prices or the ratio between the price of one particular good and a weighted average of all other goods available in the market (ed.).

commerce had deficit, and local production saw their competitiveness declining (the inverse phenomenon was manifest in the case of relative prices going too low.)

In the dynamics of a nation-state existing autonomously, the two key variables were the following: investment into production and real salaries<sup>4</sup>, because their evolution contributed to the determination of the growth rate in volume and, thus, the growth of employment in the country under the constraints of monetary policy taking into consideration the external trade balance. The global context characterized by the growth in volume and the evolution of prices affects the evolution of relative prices and external trade balance.

### *1.3. The change of monetary regime*

Since that time a traditional mechanism has been dismantled because the world space has been greatly transformed by two major events. First of all, in 1973, the international monetary regime changed, and, then, more recently the process of globalization has started. The process of globalization has modified radically the nature of relations between enterprises and nation-states which are no longer an expression of a simple growth in international trade exchange.

Comparing the evolution in the monetary field with the whole world evolution, we can see that the variation of the real exchange rate (the relative level of prices) does not depend only on the difference in inflation, but is also a function of the relative variation of the nominal exchange rate.<sup>5</sup> Thus, in the regime of fixed parity, the real exchange rate can rise only if the zone is more subject to inflation than the world. This corresponds to the old form of the rise of real exchange rate, which was observed in different ways in the European international monetary system which was established at Bretton Woods in 1944.

After the collapse of that system the same phenomenon was manifest in the countries participating in the European monetary system. In such a regime, symmetrically, the rigorous monetary policy, on the contrary, causes a decline in the relative level of prices.

Under the regime of a floating exchange rate, the current nominal exchange rate depends partly on the rule of parity of interests which is the function of two variables: on the one hand, it is the difference of rates of interest for a short term, on the other hand, it is the idea that the working mechanisms will make the future adjustment by themselves.

The rate of national interest fixed by the Central Bank is usually compared with the world rate. The anticipation of nominal exchange rate is determined by such indicators as predicted evolution of domestic prices and the external trade balance. In this regime the rise of the relative level of prices results more from the variation of the nominal exchange rate than from differences in inflation. So the effect of monetary policy can be reversed from that moment. One can envisage the case of

---

<sup>4</sup>‘Real salaries’ mean the salaries that have been adjusted for inflation in contrast to nominal unadjusted ones (ed.).

<sup>5</sup> See Editor’s Notes.

an exaggerated tight monetary policy. The gain obtained on inflation is overcompensated by the rise in the nominal exchange rate (example of the mark zone, followed by the euro zone).

#### 1.4. *The effect of globalization on the domestic demand*

In current language, to judge from practice, the term '*investment*' denotes two concepts radically different from the past. Either it describes the financial concept, which insures the financing of capital liabilities<sup>6</sup> of a firm, or it describes the productivity concept, i.e. the use made of these financial resources in order to buy equipment goods, not only to increase productivity, but above all to extend production capacities, which is then reflected in the assets.

The concept of *financial investment* corresponds, in fact, to the transfer of savings. It concerns the property and the forms of its placement which can have the aim of modifying the management by changing the composition of collective share-holders (*brown field*). It is true for both the 'portfolio investment' (pension funds) and a part of 'direct investment', especially in the developing countries. The concentration of multinational corporations takes place via the Public Offer for Purchase or Public Offer for Exchange.<sup>7</sup> Such a form of financial investment can raise productivity, but the merger or acquisition does not directly denote any extension of production capacities, and the closure of plants or enterprises may occur. The other part of 'direct investment' which is mostly seen in developing countries (*green field*) corresponds, on the contrary, to the creation of new activities.

*Investment in production* is radically different. A large part of it is financed by national resources, with a part from a foreign country which is definitely smaller for the majority of countries. No matter that they may be of local or foreign origin, those enterprises which are engaged in the world strategy decide on the localization of their capacities of production by comparing the attractiveness of conditions of national economies. When the cost of salaries seems to be too high on the territory of the country they are inclined to refuse any extension of the capacities on this territory, and, on the contrary, promote the production in more attractive foreign territories directly (*green field* investment), or indirectly (the partnership with a network of enterprises).

If there is a rise in the cost of national salaries in comparison with the world average, the level of relative prices leads towards the average term, the investment in domestic production with the profit only from productivity and capacities of production staying constant. The growth is restrained not only by the slowness of demand but also by the break in the dynamics of supply.

---

<sup>6</sup> A liability is a present obligation of the enterprise arising from past events, the settlement of which is expected to result in an outflow from the enterprise of resources embodying economic benefits (ed.).

<sup>7</sup> A company issues common stock or shares to the public seeking capital to expand. The money paid by investors for the newly-issued shares goes directly to the company in contrast to a later trade of shares on the exchange, where the money passes between investors (ed.).

### *1.5. The formation of salaries*

It is clear that the change of behaviour and the formation of salaries are connected. The big corporations which play a key role in the diffusion of the norms of salaries change their attitude as soon as the public power abandons all national and regional preferences. The salaries are perceived only at the angle of costs since the vast perspectives of new external markets for sales are open due to the growth of emerging economies. The excessively high level of relative prices produces a strong pressure on the low level of real salaries, which brings about the eventual abatement of domestic consumption. And other enterprises get involved in this process, even those that are directly concerned only with the situation in the local market.

In countries where the relative level of prices is too high and the money is too expensive, the growth of domestic demand slows down to the average condition, since the investment in production and consumption is delayed. In the countries where the prices are relatively low the same logic gives opposite results: the cheap money, in fact, indicates that the growth is stimulated to reach the average term with the help of domestic investment in production of both local enterprises and foreign enterprises. However, salaries can increase as long as their relative level stays low.

In the world core economies the working mechanism is accelerated by the network of enterprises which form the most recent type of internalization imposing it on international commerce and direct investment into the foreign country. The creators, or the 'motor' agents, of every network bring their competence into local activities in the regions of the greatest dynamics and get notable gains from the exchange. They acquire substantial revenues without the necessity of investing massively into these regions.

It must be noted that if in the near future the evolution of investment in production represents one of the elements of demand, its role will be even more important concerning the supply. The growth allows not only the productivity to be increased but also facilitates the capacity of production. It increases as a result of the potential growth of the economy and, thus, enhances the position of this economy in the world. In the perspective dynamics, it is also essential to know if the economy will prefer its progression in volume reinforcing its potential productivity according to the cumulative processes, or if, on the contrary, it will search its own valorization with the help of increasing the real exchange rate.

### *1.6. Slow tendencies*

In the segmented world economic space one has to admit nowadays that the processes which tend to reinforce the power of enterprises weaken the power of nation-states to the same degree with the exception of the USA which has transformed into the superpower.

For the last quarter of the century the evolution observed has shown eight slow tendencies in the world:

- a) the 'management of enterprises' focusing on profits with the claim of getting the ideal norm of 15% return on equity;

- b) the gradual tendency of questioning the social gains presented as ‘rigidities for the labour market’;
- c) the rise of social inequalities within countries;
- d) the stagnation of purchasing power of a great number of salaries in the developed countries and their alignment to the lowest;
- e) savage competition of the countries with low salaries, permitting the commercial intermediaries to capture the major part of profits in exchange;
- f) systematic tendency towards privatization, which no enterprise can escape;
- g) the gradual dismantling of different public services which sometimes questions the governing function of the state;
- h) the dominance of the experts of main ideology over international institutions.

Although all these tendencies have not reached their end, their logical development and their orientation are gradually becoming clearer, which is why one should investigate the reason for the conversion of elites towards this process. Several explanations can be advanced here.

We must first remark that not long ago the communist bloc was a political counterweight to the extent that it claimed to offer a counter model; however, it is not only the communist regimes that have failed and collapsed but their disappearance has encouraged enterprises to abandon a reasonable behaviour to which they adhered in the ‘Fordist’ period.

Then, we must note that social democracy has come to its impasse: the continuing growth of relative weight of obligatory taxes and strict regulation by system are approaching their limits by stifling the spirit of initiatives and paralyzing economic dynamism which served as an initial justification for the liberal bend at the beginning of the 1980s.

And finally, the counter power of trade unions has become weaker because the trade unions were implanted everywhere in the traditional industries, the power of which has been declining steadily.

From now on, the pressure of *lobbies* has been supported by a powerful movement of ideas that has played an important role in integration. The dominant economic theories are formed on the basis of the neoclassical paradigm the character of which is artificial and dogmatic and disguised by a mathematical apparatus which gives it a scientific appearance. In the political field we see the appearance of a liberal-libertarian ideology where the favourite target is a nation-state presented as a dying phenomenon. Balanced liberalism, not to say an old liberalism, has been superseded by unlimited liberalism. The wild capitalism of the 19<sup>th</sup> century has reappeared in a modern form.

## **2. Theoretical explanation of globalization**

We have observed the uncontested triumph of liberalism over Marxist regimes in the world: the processes of deregulation and privatization have becomes global

recently, and the failure of different types of collectivism has been evident for several decades.

If China has preserved a communist regime it is because it has oriented itself towards the market economy since 1978 under the leadership of Deng Xiaoping. In Eastern Europe the collapse of the Berlin wall, which happened on 9 November 1989, triggered the chain of events culminating in the collapse of the whole Soviet bloc. Everywhere else the policy of statism has failed even in its moderate form: in Western Europe the attempts to overcome the problems by raising public expenses have turned out to be useless after two consecutive oil crises. For developing countries those which chose bureaucracy and autocracy, the chances of bridging the industrial gap were lost.

So, the victory of liberalism is not contested. Moreover, its triumph seems to be almost total in the theoretical realm. Those who disagree belong either to the Marxist remnants or to the 'alternative globalization' movement, or to those who speak vaguely about 'economic horrors'. The dominant paradigm has become the paradigm of neoclassical school of Arrow (Arrow, 1971) and Debreu (Debreu, 1959) developing the analysis of L.Walras. Their use of mathematical formalization has created the illusion of an exact science for economists. Relations between enterprises, households and administrations have also been included in the general model of equilibrium where the market reigned wonderfully, and where prices played a fundamental role. But this wonderful mechanism is questioned under globalization: instead of providing the coherence of the systems of prices it only strengthens their divergence in four different areas: spatial, sectoral, qualitative and conceptual.

### *2.1. The divergence of prices among countries*

The neoclassical theory of international exchange dating back to the works by Heckscher (Heckscher, 1919), Ohlin (Ohlin, 1933) and Samuelson (Samuelson, 1948), supposes that there is a complete dichotomy between the real and the monetary spheres of economy. The real sphere is entirely constructed on the existing world price for each product. The gap between a national price and a world price for the product is explained by a custom tariff or by indirect non tariff customs obstacles equivalent to tariff customs obstacles. The Law of One Price is the basis of the principle of Purchasing Power Parity<sup>8</sup> of money introduced by Cassel (Cassel, 1928), which presupposes the alignment to average prices expressed in the same currency.

Since that time empirical studies have delivered a blow to the principle of the Purchasing Power Parity of money and, *a fortiori*<sup>9</sup> to the Law of One Price. In the 1950s the forerunning works by Gilbert and Kravis (Gilbert and Kravis, 1954)

---

<sup>8</sup> The Purchasing Power Parity theory uses the long-term equilibrium exchange rate of two currencies to equalize their purchasing power and is based on the Law of One Price, claiming that in an ideally efficient market identical goods should have only one price. The purchasing power exchange rate equalizes the purchasing power of different currencies in their home countries for a given basket of goods (ed.).

<sup>9</sup> especially

presented the evidence of deep disparities between the systems of national processes. These works led to improving the Project of International Comparison, namely a system of periodic studies which is used by all international organizations for a proper comparison of the Gross Domestic Product of the majority of countries in the world.

Bela Balassa (Balassa, 1964) and Paul Samuelson (Samuelson, 1964) tried to explain the disparities of prices by the existence of a hidden sector of international competition, assuming that the Law of One Price is applicable only to the products of exchange. It is a fact that for a long period of time one can observe the connection between the average level of prices of one country and the relative level of development resulting partly from the disparities of productivity between the hidden sector and the sector exposed to international competition. However, the studies show also that we observe neither the levelling of prices (Purchasing Power Parity), nor, *a fortiori*, the Law of One Price for each product in the exposed sector only.

One would think, *a priori*, that the global extension of the market would ensure the convergence of national prices, at least for the sector which is exposed to international competition. The transition of the international monetary system in 1973 to a floating exchange rate was supposed to produce such a result. But it did not. Of course, it is true that numerous currencies continued to be manipulated by authorities, in particular, in developing countries which practised undervaluation systematically. However, it was sufficient to observe the relationship between the USA dollar, European currencies and Japanese yen to see that the Purchasing Power Parity was seldom observed after 1973.

The development of technologies of information and communication constituting an essential element of globalization was also supposed to bring about the convergence of prices. But one continues to observe the maintenance of great disparities of prices which naturally involve the disparity of nominal salaries. The real salaries are also affected. As a consequence, the neoclassical analysis of the labour market is distorted because it usually ignores the existence of this 'monetary angle'.

As far as enterprises are concerned they evidently do not ignore the disparities of prices and salaries. They operate in the world which is not homogeneous given that it is a world of segmented economic spaces and national currencies. Logically the most globalized enterprises integrate these disparities into their strategies for investment, localization of activities and sub-contracting. They try to get profit from capturing the majority of benefits from international exchange, with the remaining benefits transferred to consumers.

## ***2.2. The divergence of prices for every product***

The perfect and pure competition presupposes that the products are homogeneous. But this postulate has been questioned in light of the accumulated facts of many decades. The differentiation of products also confirms the theory of monopolistic competition described in the works by Chamberlin (Chamberlin, 1953). In the field of international trade, the differentiation of products plays an

especially important role as we observe both vertical differentiation (different qualities) and horizontal differentiation (different varieties of similar products).

The neoclassical theory of international exchange turns out to be insufficient. It explains the exchange solely through the specialization based on production factors, leaning on relative endowments of labour and capital. However, the specialization itself has a greater origin to the extent that in the major part it results from the innovation (the classical theory of Ricardo is, in fact, richer than neoclassical theory which postulates the identity of modes of production in the countries). But everywhere profit at the expense of the differentiation of products explains the fraction of exchanges which do not arise from specialization. Using the works of a forerunner Lassudrie-Duchêne (Lassudrie-Duchêne 1971), one of the leading school representatives Paul Krugman (Krugman, 1979), developed a new theory of international commerce, founded on imperfect competition.

Instead of making such analyses obsolete, globalization reinforces their validity. Technological changes tend, in fact, to accelerate the process of differentiation of products. In many fields the standardized products are replaced by the range of increasingly diversified products and 'à la carte' products. The extreme case, which occurs rather frequently, is the entirely personalized product. It is applied not only to the goods but also (and rather often) to multiple services, especially to those which use new technologies.

Globalization shows two contradictory tendencies. On the one hand, due to the *Internet*, the enterprises can rationalize their processes of production by choosing the cost of supply which is the lowest for intermediary goods and the most standardized. On the other hand, for an increasing number of goods and often services, the personalization of products is expressed by segmentation of the markets more and more, and in a more prominent manner. Consumers come across the offer of more diversified and less uniformed products. It is rare for the scale of prices to go from one to three for similar products.

The divergence of prices reaches its maximum when the producer can no longer establish a tariff and be paid by its client directly. The free access to services has been the norm for a long time for activities such as audiovisual. Radio broadcasting and digital television channels have to finance themselves either with the help of advertisements or taxes. So this phenomenon has spread to various services connected with the *Internet*, services which have been offered free to consumers or pirated systematically. That is why numerous enterprises of 'new economy', advertised by financial markets prior to 2000, have accumulated losses while those who are engaged in music business have come across more severe competition. It is difficult in fact to establish a profitable mode of toll.

### ***2.3. The extent of divergence of the quality of products***

In the real economy transactions are usually made in values, or, in other words, in prices, and at the current rate of exchange. The interaction between volumes and prices is a simple convention which is necessarily arbitrary. It has a double role: to supply private operators with signals to ensure the macro economic functioning of markets and to clarify the situation to the public powers so to regulate macro

economic evolution. However, the notion of prices only makes sense if it takes into account the quality of the products concerned.

The measure of quality poses serious problems in any given moment. It refers also to the field of public markets. The simplified application of the procedure of supply can lead to benefiting the producers who propose much lower prices, but whose products or supplies are of lower quality than those of their rivals. Over time the evolution of the quality of products causes more serious difficulties. The national accounts, in fact, were conceived at the time of the 20<sup>th</sup> century. It was in the period when a more important role was played by standardized goods which had characteristics that evolved slowly.

The first group of problems belongs to the rapidity of technological development affecting goods. First of all, we have seen Moore's law<sup>10</sup> applied to micro processors and memories in the core of micro-electronics: the regularity of innovations, and, in particular, the one concerning the capacity of semi-conductors has multiplied by ten every five years. Statistical data does not incorporate structural changes of such amplitude at all well. Spontaneously the national accounts tend, in fact, to mitigate the distortion of prices which results from it. Since the flow is measured directly in value, it means that the growth in volume tends to be mitigated equally.

It is true that recently the statistical national institutions have tried to correct this distortion based on which one often makes estimates and each year it represents an order of 1% of Gross Domestic Product. However, the corrections implemented so far have been only partial and they have raised concerns, especially in the American economy (qualified as hedonic prices).

The second series of problems belongs to the increasing weight of services in the value of Gross Domestic Product<sup>11</sup> related to employment. The interaction between prices and volumes is exceptionally delicate in respect of services which are becoming increasingly diversified in space and increasingly volatile in time. As for the services, the indices of price and volume are also constructed in such a way that they affect various imputations. This arbitrary character on the basis of such statistical conventions has a tendency of increasing in the course of time.

Such uncertainties would not be too serious if the dominant economic theory did not attribute a decisive character to the index of price development. In this case the monetarist version of neoclassical theory is founded on two postulates: on the one hand, there is the hypothesis that the currency affects only the rhythm of inflation, namely the variation of prices, which is supposed to be totally neutral to the growth in volume; on the other hand, there is also a requirement according to which monetary management must be entrusted to the Central Bank, independent from political power.

---

<sup>10</sup> Moore's law describes the trend in the history of computer hardware. It was named after Gordon Moore who wrote a paper in 1965 where he claimed that the number of transistors that could be inexpensively placed on an integrated circuit was increasing exponentially, doubling approximately every two years (ed.).

<sup>11</sup> See Editor's Notes.

To begin with, we can contest the postulate of neutrality of money by claiming that monetary mass affects first of all the progression in value of Gross Domestic Product. One must especially study the operational character of monetary policy, which focuses on the indicator of inflation<sup>12</sup> which has become rather obsolete in light of the structural transformation of the economy.

In parallel, the notion itself of monetary mass tends to dissolve: the financial innovations and the emergence of electronic money question the old method of monetary regulation. This method has been preserved and is still used by the Central Bank of Europe for managing the euro and it clearly belongs to the past.

#### *2.4. The divergence on the concept of capital*

Monetary policies have become more ineffective concerning transactions based more on assets (financial and immobility) than on products (goods and services). For the last ten years the inflation of the first has superseded the inflation of the second. Assets have been involved in the speculative bubble. This development poses the question of the meaning of the concept of capital.

The notion of value has been completely distorted by the dominant paradigm coming from the neoclassical theory. This school of thinking which seems to impose itself under globalization not only criticizes Keynesian analysis, which was the most widely spread in the middle of the 20<sup>th</sup> century, but also reduces the market relations to the set of equations, thus losing the foundation of the classical theory of liberal economy.

Moreover, when we speak about investment or capital we use the language, which was conceived for the old profoundly different concepts and which meant more productive activities than financial operations and do not correspond to their modern use.

For studying the conditions of economic production one naturally wants to measure the following factors: on the one hand, the work (active population available), on the other hand, the *productive capital* represented by the means of production (immovable property forming fixed capital and stocks forming circulating capital). These two factors are combined according to the production function and are incorporated into gross production.

This analysis of factors is helpful for detecting the physical constraints which are a burden on growth. However this analysis turns out to be misleading if one wants to use these two factors of production together for establishing the artificial correspondence to markets.

In the symmetrical way to labour where salaries, or remuneration in the form of salaries, are generally perceived as a counterbalance to the production activities, the market of capital is also perceived through the ‘false window’ producing an impression of a harmonious edifice.

In reality it is evident that productive capital has not yet been created by the owners of funds. Besides land, the goods accumulated for forming a fixed capital which is used at a given moment, i.e. the goods of equipment and buildings, have

---

<sup>12</sup> See Editor’s Notes.

been produced by the activities of the workers in the previous period. It is the same for circulating capital represented by the gross product achieved through work.<sup>13</sup>

In the dynamic perspective the creation of values is, thus, essentially due to the whole active working population, no matter whether they may be nationals or foreigners. This workforce is not limited to workers, it includes other employees: administrative and commercial staff and engineers who are the source of innovations. But, first of all, there are the entrepreneurs who organize production to satisfy demand. The sum of added values is expressed also by the Gross Domestic Product, resulting from work in agriculture, industry and services.

The *financial capital* has a different nature. The holders of funds provide the means of financing which is necessary for buying different forms of productive capital. It will be remunerated according to the effort of saving instead of immediate consumption. This remuneration is perfectly justified and operates in the form of interests (the lending is connected with the ultimate reimbursement) or in the form of dividends (the property of the enterprise implies the risk).

One can ask why this logic, which is very clear and which was the logic of classical economists such as Adam Smith (Smith, 1976) and David Ricardo (Ricardo 1997), was superseded by the artificial symmetry of neoclassical construction.

The responsibility for it, perhaps, lies in Marxist deviation. It started with the classical analysis distinguishing a 'dead' work (accumulated before) from work which is 'alive'. However, it seems to have ignored the fact that the value of goods and services produced must be validated by the demand expressed in the market. Besides a Marxist theory is founded on the restrictive and materialist conception of the value of work reducing this factor only to the activity of workers. All profit was considered as a 'surplus value' perceived as a burden on the backs of the proletariat.

In opposing Marxist dogmatism the neoclassical school wanted to construct a harmonious edifice based on mathematics. In reality, it simply proposed another form of dogmatism. Marxism was defeated not so much by the neoclassical theory but by two simultaneous events: on the one hand, it was the adoption of a social economy of the market under the pressure of social forces in Western countries; on the other hand it was the failure of the communist regimes in Eastern countries, which was symbolized by the collapse of the Berlin wall.

## 2.5. *The creation of value*

Since the collapse of communism, globalization has been considered as a process of integration by neoclassical theory. As far as enterprises are concerned an entrepreneur is subject to the pressure which is more evident in the case of Anglo-Saxon Pension Funds. For such share-holders the aim is not to manage in the course of time but to acquire increased profits from their funds (the tendency is to impose a minimal return of 15%) and thus to increase the value of shares held.

---

<sup>13</sup> For the reason of simplicity we do not consider here the role of the public sector, which brings a specific contribution to the creation of value in economy.

Financial markets tend also to dictate their rules. The dominant theory justifying this practice considers that the financial markets are, due to their transparency, the most efficient markets of all.

This affirmation is strongly opposed by Orléan (Orléan, 1999). It is sufficient to examine the development of the rate at the stock exchange by observing the strong conjectural variations with the alternative explosion and liquidation of speculative bubbles. In reality the value of a share is not determined by objective variables. The value is determined by the anticipation of future profits which are naturally not yet known. The operating people follow the auto-referential and mimic rules of behaviour which were described by Keynes. To anticipate the tendency of the market one should see the average selection made by other operators following the same principle as at a beauty contest.

The 'creation of value for the share-holders' is thus an antipode to the durable creation of real values for the whole economy. Its virtual character is revealed by the fact that it cannot become evident simultaneously to all the share-holders. In fact, the function of financial markets is to respond to the demand of liquidity without waiting for uncertain results. The objective of financial markets is to permit share-holders to use their power to negotiate instantly by avoiding risks inherent in the nature of the shares themselves.

Such a practice is the transgression of soberly conceived principles of capitalism in which power is exercised by stable share-holders ensuring directly either the management of an enterprise or the control over the direction of management in the course of time.

Financial markets are affected by opinion. It leads to the creation of 'enterprises' without plants and even without salaries eradicating all the problems connected with sub-contracting.

In parallel such predominance of financial markets creates dangerous components for the stability of the system itself: enterprises can increase their profitability rate in an artificial way buying back their own shares, and the households of the share-holders of pension funds diminish their savings while the sum of their virtual richness increases.

In the USA the inflation of assets at the stock exchange has ousted the inflation of products. Thus, the insufficiency of domestic savings makes it necessary to turn to the world capital. The Federal Reserve has actually declined because of the fight against its pervasive practice to avoid a break in growth. The actual difficulties of the American economy illustrate the impasse in which the predominance of financial markets has involved the whole economic and financial system.

Besides these systemic risks, the financial drift throughout the world is expressed by spreading the 'management of enterprises' where the main result has been an increase in social inequalities everywhere. In the name of the mythically ideal market, neoclassical theory justifies the weakness of the counter power of trade unions, with nation-states gradually being deprived of their sovereignty. Wishing to increase the excess of profitability and ignoring the risks due to the dilution of invested capital one denies shares their veritable justification transforming the dividends into 'surplus value'. The paradox is that it is this return

to the 19<sup>th</sup> century capitalism in a modern form that ultimately risks a revival of perished Marxism.

## **Conclusion**

The liberal doctrine which has triumphed over the world is the doctrine of freedom and responsibility. It includes, in particular, freedom of thought. Thus, the possibility of questioning the dominant theories is the key to scientific progress.

In the field of economy nothing is more dangerous than confining liberalism to the only possible thought which, in this case, would take the relay baton from Marxist dogmatism. At the dawn of the third millennium it is precisely the case of neoclassical theory which seems to be moving further and further away from the reality which it claims to represent. One after another, the fundamental principles of the neoclassical paradigm are undermined by the development of global processes. That is why from now on we should be more appreciative of the guarding principle of liberalism which is pushing us to the new development of economic theory.

# Central Europe in the Globalized World of the 21st Century

**Leon OLSZEWSKI**

## **Introduction**

As a result of the political and military events taking place in the second part of the 20<sup>th</sup> century, the Eastern part of Europe found itself under the control of the Soviet Union. For almost 50 years, the countries of Eastern and Central Europe existed in the system of highly centralized economy and centralized political control imposed by the Soviet regime. As a result of the political, economic and social changes in the 1980's and 1990's, the system of planned economy finally collapsed.

For the countries of Eastern and Central Europe, the last decade of the 20<sup>th</sup> century and the first decade of the 21<sup>st</sup> century is the time of momentous political, social and economic changes triggered by the collapse of the centrally planned economy and accelerated by the dynamic processes of globalization of the world economy.

Liberalization, deregulation, the opening of free markets and development of information and communication technologies, quickened the pace of the European and world market integration. Geographical divisions were no longer a barrier for economic development.

The transformation of the political and economic systems of the countries of Eastern and Central Europe was the immediate result of a political revolution in the Soviet Union initiated by Gorbachev's perestroika<sup>1</sup>. The cooperation between the Communist party and the emerging new Russian political class created the possibilities for a relatively quick opening of Russia towards the West.

Despite the attempts to reform the system of the centrally planned economy, its deficiencies were so great that the societies and governments of Central and Eastern Europe promptly accepted the proposals of the World Bank and International Monetary Fund to transition into the new market economy. The transition appeared more desirable, because it was often described as a socially painful but relatively short-term process.

The process of transition into new economic systems started in the 1980's in Latin America and Africa. The knowledge and experience gained by the World Bank and IMF while introducing structural changes and stabilization programmes

---

<sup>1</sup> Perestroika (in Russian) means restructuring. This term is used to refer to economic reforms introduced in 1985 by the Soviet leader Mikhail Gorbachev (ed.).

in Africa and Latin America were used to formulate a general plan of systemic changes for the countries moving from the centrally planned to market economy.

Individual programmes were being developed for the countries of Central and Eastern Europe, taking into account each country's unique characteristics (However, external circumstances of restructuring processes changed. The globalization of the economic processes accelerated, due to various reasons).

The countries of Central and Eastern Europe unanimously accepted the programme of changes leading them towards the market economy and initiated the restructuring of the political and government institutions and economic instruments in accordance with the guidelines established by the World Bank and IMF. Departing from the system of the planned economy, they accepted the reforms proposed in the Washington Consensus (Williamson, 1990)<sup>2</sup>.

The Washington Consensus model is based on the neoclassical perception of the modern market economy. Freedom of business activity, clearly delineated property rights, the constraining of government intervention into economic processes and openness towards global markets are at the core of the universal policy of systemic changes developed by the IMF and the World Bank.

Foreign investments are deemed to be another important aspect of the process, creating a foundation for the new economic structures necessary for social and economic development.

## **1. Theory of economic transition**

After the collapse of the communist system there was no economic theory of transition to market. This kind of transition had had no precedent in history. The transition had specific characteristics in different countries of Central and Eastern Europe due to their different determinants.

The regulation theory seems to be more helpful for the explanation of profound changes caused by historical and political factors than other theories.

The combination of macro economic models including descriptive economic data and the analysis of various factors gives a clue to a researcher for understanding how institutions function and how entities behave under specific historical conditions.

As the capitalist economy takes different forms, the regime of accumulation and the mode of regulation (Boyer, Saillard, 1994) determine the operating stability of economic system or the emergence of contradictions leading to a crisis of the national economic system.

The regulation approach rejects automatic self-regulation of the market and focuses mainly on the institutions forming a network of links in economy, essential for the national regime of accumulation.

Economic activity is a set (network) of social relations characterized by dynamics leading to the emergence of contradictions and crisis in a given society.

---

<sup>2</sup> See Editor's Notes.

The regulation approach is a structural analysis referring to Marxism and using its methodological assumptions.

Behavioral economics is trying to explain the transition processes. Its method relies on a combination of traditional statistical analysis and the testing of econometric models. This approach facilitates understanding of individual entities' decisions. Transition success or failure according to behavioral economics depends on proper acceptance (positive reception) of macro economic policy pursued in a country transforming into another system (Letiche, 2006).

The approach mentioned above takes into account the factors used in the neoclassical analysis. In the conditions of an evolving global economy it is essential to implement solid macro economic policy and to provide incentives for the entities to act optimally. These factors are crucial for successful economic transition. If a given country pursues a policy in line with globalization, it may expect positive results, and vice versa. Rapid changes in technology, especially in the information and communication technologies (ICT) industry must be global for the economy to develop and maintain a high rate of growth. The analysis of historical conditions indicates that there are various paths of economic growth for different countries. The type of interaction of incentives, decision making and entrepreneurial behavior in transition economies is essential. Under globalization, the adaptation of a national economy to global processes should be considered in several dimensions. It is especially critical for the nation-state to demonstrate its flexibility and quick adaptation to changing circumstances. It can be adaptation policy to exchange rates, labor market, trade barriers, financial market and so on. The policy of a nation-state should not be rigid otherwise it will fail to achieve economic growth. All of the above mentioned approaches to transition emphasize the importance of institutions ensuring the smooth functioning of the market system (neoclassical approach), or enabling, irrespective of the variability of interests and conflicts on different levels, the stable functioning of the economy (regulation approach). The conclusions of these research approaches may be applied to the analysis of transition dynamics in the CEEC economies. The transition process varies in time and space. It is important to consider three elements in its analysis: initial conditions of an economy and their influence on a transition path, internal circumstances of systemic changes related to institutional structure and external circumstances influencing the process of changes in social economic system and political structures.

In the conditions of ongoing globalization, the CEECs introduced systemic changes proposed by the IMF and World Bank experts pursuant to the Washington Consensus (WS). Earlier, in the 1980's, the WS package was fiercely criticized by the economists representing 'development economics' due to negative structural and social consequences. This criticism was later repeated by Stiglitz (2002), (Hoff, Stiglitz, 2004).

In the 1990's the CEECs became the new field of practical application of the IMF model of economic stabilization and structural change. The aims and instruments of transition policy remained the same as in the countries that had treated their economies with a therapy of the liberal doctrine.

The synthetic analysis below emphasizes the nature of the systemic changes under way in the CEECs, especially in four Central European states at the turn of the 21<sup>st</sup> century. It focuses on the factors playing the most important role in the economic development of these countries under globalization.

## **2. The dynamics of macro economic and structural change in Central Europe in the first stage of transition**

The Central and Eastern European Countries form a specific European region, which remained on the sidelines of industrialization processes and economic growth in the 20<sup>th</sup> century. Only Hungary and Czechoslovakia, being part of the economic system of the Western countries during the interwar period, reached a development level comparable to the Western countries. The political order introduced in post-war Europe according to the Yalta Agreement enabled the Soviet Union to establish a single party dictatorship, both in politics and in the economy.

The centralized economic and political system, implemented also on the international level within the framework of the Council for Mutual Economic Assistance (Comecon)<sup>3</sup>, introduced mechanisms to level the economic development of its members. They produced mostly negative effects and slowed down the development dynamics of Czechoslovakia and Hungary, i.e. the countries that had had already market economy in the interwar period. The same process characterized some other countries of the 'socialist camp'.

However, the political and economic situations in the countries of Central and Eastern Europe were not identical. The pace and depth of systemic changes taking place in post-socialist countries at the beginning of the 1990's were considerably different. Different economic and socio-political circumstances defined the specificity of the transition period for a particular country. According to the International Monetary Fund (IMF) doctrine (stabilization, liberalization, privatization), privatization became the principal appeal and aim of the CEECs' governments. Major changes to the economic structure started with industrial and agricultural sector reduction and services sector development. International corporations entered the CEEC markets.

There were positive effects – economic growth, increase in production quality and structure, visible change in the specialization of production and international trade. Hungary, Czechoslovakia (before the division into Czech Republic and Slovakia) and Poland went a long way towards the creation of market economy institutions and mechanisms. Internal political problems and low level of development prevented the second group of countries including among others Bulgaria, Romania and Albania from a radical departure from the central planning system.

---

<sup>3</sup> The Council for Mutual Economic Assistance (also referred to as Comecon or CMEA) was formed in January 1949 by the Soviet Union, Bulgaria, Czechoslovakia, Hungary, Poland, and Romania in Moscow (ed.).

The following factors were decisive for the pace and effects of the systemic change:

- establishment of prerequisites for economic development in the form of new market institutions and regulations;
- geographical reorientation of trade;
- increase in trade with the EU in place of trade relations with the former Comecon partners;
- foreign capital inflows allowing both growth and modernization of production;
- the goal of quick accession to the European Communities according to Accession Agreements with the European Union.

In Poland, the collapse of the strategy to open for the West and to make a technological leap based on foreign credits resulted in a massive social movement 'Solidarność' ('Solidarity'). Transition processes were forced by the social protest. The demands for broader participation of workers in enterprise management were formed in the slogan: "self-reliance, self-regulation and self-financing". Due to social pressure on wages, inflation increased extremely quickly.

During the first stage of transition drastic measures to balance the economy were introduced. A 'big bang' method was used. It should be emphasized that the former 'nomenklatura' played a significant role in building the market economy institutions and structures. This phenomenon is characteristic for all post-communist countries. As a result, a power transition hypothesis was formulated (Staniszki 1991; Rona-Tas, Buncak, Harmadyova, 1999).

The fundamental privatization law was passed in Poland in 1988, before the communist government stepped down. A rapid process of self-privatization of the nomenklatura<sup>4</sup> began. Spontaneity of systemic change created favorable conditions for it: there was no transparency of economic decisions but there was a lot of corruption, mafia connections and erosion of fundamental moral norms in labor relationships.

A stabilization programme, accepted by the IMF, commenced in Poland in January 1990 with an initial package of legal acts, so called Balcerowicz's Plan ('Plan Balcerowicza')<sup>5</sup>. It introduced a harsh regime aimed at rapid balancing of the economy through the following steps: a rapid decrease of the budget deficit and the tightening of the rules of monetary policy, price liberalization, introduction of currency exchange in the current account and a complete departure from central planning (Balcerowicz, 1995).

The stabilization programme was introduced under exceptionally unfavorable conditions. For the whole decade of the 1980's, the Polish economy remained in a

---

<sup>4</sup> The Communist party's authority made appointments to key positions throughout the governmental system, as well as throughout the party's own hierarchy. The Russian term is derived from the Latin *nomenclatura* meaning a list of names. The Soviet nomenklatura was analogous to the ruling class (ed.).

<sup>5</sup> The Polish minister and economist Leszek Balcerowicz prepared a plan of extensive reforms, which was adopted in December 1989 (ed.).

deep stagnation. Except for the period of 1983-1988, there were negative values of GDP growth. Various factors contributed to this situation, including in the first place long-term trends of decreasing productivity in industry and the economy as a whole. There was no technological progress since 1979 due to the changes in the national income allocation structure, with the investment being smaller than the consumption. The result was a significant decrease in the pace of fixed assets growth and in consequence in the 1980's the Polish economy entered a stage of an ongoing decapitalization of fixed assets and their productivity. The Balcerowicz Plan was aimed at the stabilization of the economic situation in Poland, but it deepened the negative trend in the Polish economy. Fixed assets productivity further decreased - by 45% in 1991 comparing to 1978.

At the beginning of the implementation of the Balcerowicz Plan it was believed that transition processes would have been accompanied by 'creative destruction', automatically enabling new conditions for a more effective economy. In reality, the old inefficient companies were not replaced with new dynamic entities. In the first period of transition there was a certain demand-related blockade. It limited the appropriate dynamics of the development processes. Limited national demand resulted in an increased share of fixed costs in sales value, caused financial limitations for companies to negatively influence their financial results. Excessive tax burdens for state-owned enterprises also contributed to these problems. Many of the state-owned enterprises experienced losses and insufficient credit ability. The enterprises suffered from the lack of assets to finance their current activities and borrowed to pay their liabilities or delayed settlements with subcontractors. The delay in payments was connected with poor financial performance. As a result, the budget deficit increased. A vicious circle of negative relations emerged and hindered, and in many cases completely prevented the restructuring of enterprises. They planned their action for a short term and in the conditions of high interest rates and large fiscal burden. They were not able or willing to invest. Macro economic investment rate was decreasing and at the same time, the structure of investment remained unfavorable. As in the past, investors preferred fuel, power and food industries. Other factors, like high inflation, the lack of advanced financial market institutions and limited ability to get long-term credits increased the already low propensity to invest. GNP regression turned demand pull inflation into cost push inflation, strengthened with a high exchange rate comparing to the purchasing power, real interest rate and increased fuel prices.

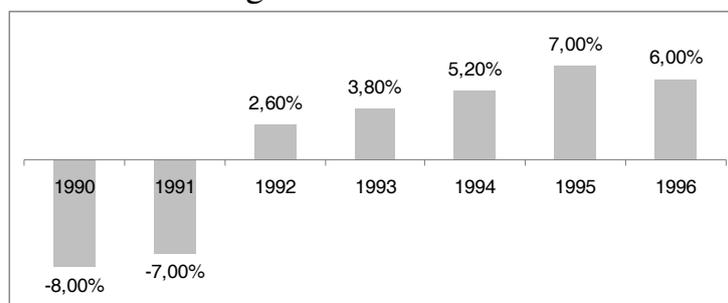
The strictness of the Balcerowicz Plan and similar adjustment programmes based on the monetarist doctrine assuming tight demand restrictions and long-reaching liberalization of international trade cast doubt on the conditions for help required by the IMF and World Bank and on the sequence of reforms. The next issue was the limit of stabilizing measures preventing negative consequences for long-term economic growth. The analyses of the effects of specific programmes list arguments both for very rapid, one-time introduction of basic programme elements, as well as for their gradual implementation. Gradual reforms are going successfully only in the case of high credibility and stability of the government.

The first effects of the shock transition of Poland to a market economy were very positive in relation to the reestablishment of normal conditions of business activity. However, due to a sharp recession and increasing unemployment restructuring principles had to be reconsidered. There were opinions, that it was possible to implement economic policy principles that would have included anti-recession programme while the main elements remained without danger to economic stability. These assumptions of anti-recessionist economic policy are based on the Keynesian theory of demand-driven growth. At first, the engine of growth was the overvalued exchange rate encouraging exports. However, when it reached the purchasing power parity, it was not able to sustain the then current expansion of exports. With spare productive capacity available it was not possible to influence investment demand. So the only possibility to start development processes was to increase consumption through an increase in personal incomes and government spending. This route out of the recession requires the government to pursue very disciplined income policy and a thorough scrutiny of the budget deficit, or otherwise demand-pull inflation may pick up again.

The mechanism of demand recovery which is most often proposed when discussing anti-recession policies assumes the application of Keynesian tools. The proponents of monetarist concept of economic policy point out that these tools are not appropriate for the conditions of post-socialist economies. There are many strong points in this position. But especially in countries reshaping their economic structures, it is crucial to find a formula to combine the elements of stabilization with the establishment of long-term conditions for national economic growth. The changes in the legal and institutional environment significantly accelerated as a result of the CEECs efforts to join the European Union. From 1990 to 1994 there was a slow transition from deep recession to several percent economic growth (chart 1).

During the same period, imports increased on average more than 20% annually. The rate of internationalization of the Polish economy measured as the share of imports and exports in GDP remains at mostly the same level, notwithstanding periodical fluctuations.

Chart 1.  
GDP growth rate 1990-1996



Source : GUS (Statistical Office database), Warsaw.

In Hungary the economic reforms continued to evolve by the gradual introduction of market economy mechanisms (Kornai, Richet 1968; Kornai, 1980). The former state property was sold quickly and at low prices to a small number of new proprietors, either to multinational corporations or to clients of the new political elite. After the Prague Spring and the Warsaw Pact<sup>6</sup> invasion in 1968, Czechoslovakia entered a period of tight political regime and economic centralization. The Czech Republic followed a very different path: there the declared goal was to distribute former public property as broadly among the population as possible, through the system of the so called “voucher privatization” (Dlouhy, Mladek, 1994). But given the balance of international economic power this road of privatization proved to be a dead-end and today the structure of economic power – and in particular the dominant role of foreign capital in the Czech Republic - is very similar to that in Hungary.

### **3. Central European Countries’ integration into European Union Markets**

The CEEC integration into the European Union was crucial for the transition process. In 1991, Czechoslovakia, Hungary and Poland signed treaties on trade and commercial and economic cooperation with the Community (Association Agreements, also called ‘European Agreements’). The European Agreements were the basic legal instruments defining relations between the Union and the CEECs. These agreements widely opened the economies of the former communist block countries.

Within the framework of the Interim Agreements customs duties and other trade barriers were abolished to gradually create a free trade zone for manufacturing products. The Interim Agreements on trade with the EU became effective by 1993 with Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, and the Slovak Republic.

In Poland, liberalization decreased tariffs to very low levels with simple average tariff protection at only 5.5% in late 1990, introduced a uniform import tariff and abolished quantitative restrictions and other non-tariff barriers. In Czechoslovakia<sup>7</sup> imports were liberalized, while restrictions on exports of scarce domestic goods were preserved. The liberalization was more gradual than in Poland, and higher tariffs were kept on imports that competed with domestic industries. In Hungary the liberalizations were also gradual, with the simple average tariff falling from 16% in 1989 to 13% in 1991. (Przeworski 1993, Messerlin, 1995).

The Interim and European Agreements stimulated both CEEC exports and imports in trade with the EU. Exports of the EU-12 to the CEECs increased much faster than imports from the CEECs, resulting in a trade surplus of ECU 7.6 billion

---

<sup>6</sup> Warsaw Treaty of Friendship, Cooperation and Mutual Assistance (or the Warsaw Pact) was an organization of communist states in Central and Eastern Europe which was established in 1955 in Warsaw, Poland (ed.).

<sup>7</sup> Czechoslovakia split into the Czech Republic and Slovakia in 1993 (ed.).

in 1995.<sup>8</sup> The Central European Countries - Poland, the Czech Republic and Hungary had the highest share of trade with the EU. Within three years the CEECs redirected their trade from the former Comecon to Western Europe. The share of trade with the EU increased. In 1995, Poland (70% of exports to the EU) and Slovenia (67.2% of exports to the EU) had the highest share of trade with the EU.

The liberalization of trade between the EU and the CEECs was planned to be asymmetric - the EU lowered their tariffs much faster than the CEECs. However, the EU countries benefited more from this asymmetry. Average import duties in the EU equaled 3-5%, while in the CEECs around 14%. This difference in protection gave relatively more benefits from liberalization to the Western European producers rather than to Eastern European companies.

The situation with non-tariff barriers was similar. The EU applied these mostly in the less competitive sectors, having regard to traditional factors deciding about a comparative advantage. The CEECs did not use any non-tariff barriers and after they had opened their market, they encountered obstacles in goods exports. In effect, the current account balance was detrimental for the CEECs. Increased demand for Western mass consumption products also contributed to this deficit. These products were a novelty in the market which for years had a small range of consumption goods. Moreover, the need to modernize production resulted in increased demand for investment goods (Breuss, 1996).

In 1990-95, the imports of intermediate inputs and machinery were an important determinant of the changes in export structure. Sourcing of inputs from abroad was a major factor underlying the expansion of the CEECs exports to the European Union (Hoekman, Djankov, 1997).

The Association Agreements established restrictions on state aid in certain sectors. The issue was extremely political as these sectors were of fundamental importance to the overall development of trade and the prospective division of markets. The CEEC's industries included coal, steel, agriculture and textiles. The products manufactured by these industries might have been able to compete on the European market mainly due to the low prices at which they were offered (Minkova, 2000). The EU was strengthening its economic links with the Central and East European countries through the pre-accession strategy. The pre-accession strategy of the EU set specific priorities based principally on the candidate countries accepting the Community acquis.<sup>9</sup> It implied increasing the institutional and administrative capacity of these countries so that they could apply the acquis and bring their companies into line with the Community standards. It depended on the compliance with the "Copenhagen criteria". The pre-accession strategy could not be achieved without recourse to the instruments providing support and financial aid. In 1999, the EU created two specific instruments of the pre-accession aid: structural instrument ISPA (Instrument for Structural Policies for Pre-

---

<sup>8</sup> ECU - the European Currency Unit was a basket of the currencies of the European Community member states, used as the unit of account of the European Community before being replaced by the euro (ed.).

<sup>9</sup> The term 'acquis communautaire' is used in European Union law to refer to the total body of EU law (ed.).

Accession) and agricultural instrument SAPARD (Community framework for supporting sustainable agricultural and rural development in the applicant countries of the CEECs<sup>10</sup>). These two instruments complemented the assistance financed under the Phare programme since 1989, which was still the main source of assistance to the candidate countries (Report from the Commission, 2005).

The CEECs accession process was taken a step further by the Commission proposal “Agenda 2000” to open the membership for the Czech Republic, Hungary, Poland, Slovenia and other countries. On the 1<sup>st</sup> of May 2004 ten new countries joined the EU. The accession opened up a number of new opportunities for the development and modernization of the CEECs. The effects of the EU membership of the CEECs were the subject of numerous analyses. They concern different micro- and macroeconomic aspects of these countries' functioning under regionalization and globalization. The CEECs integration with the EU facilitated and strengthened institutional and structural change initiated with the transition of the economy. Legal and institutional frameworks in the social and economic spheres changed and a strong institutional architecture emerged. The significant institutional framework allowed for structural change to be made and for the economic structure to be adjusted to the competitive requirements of globalization. In the last 15 years the CEECs economies have become open economies, better prepared for cooperation and competition both in the single European and global markets.

#### **4. The growth engine in Central and Eastern Europe**

The system transition of the post-socialist countries required external financial support. For 45 years of the centrally planned economy, the CEECs have suffered from a shortage of capital necessary to modernize the economy and ensure its constant growth. It was necessary to get external sources of financing, as the internal ones were too insufficient. In the 1970's, Poland opened its economy to the West and acquired large foreign loans. They were supposed to help to modernize the economy and open it to the global market. Anti-imports strategy, for long used in the centralized system was substituted with pro-exports strategy. It did not bring any satisfactory effects as it was impossible to make it work efficiently within the old institutional and decision making structures.

In the period of socialist economy, foreign loans were the main source complementing national accumulation. The central government took out these loans and later allocated them to the state-owned enterprises. This kind of policy led to a debt crisis in some CEECs, especially in Poland. This debt had significant negative social and political effects. In the 1990's there was a radical shift in the circumstances of economic growth. The systemic change resulted in a complete departure from the former political system and the principles of a centrally planned economy. Globalization and regionalization processes strengthened the CEECs

---

<sup>10</sup> SAPARD - Special Accession Programme for Agriculture and Rural Development (ed.)

government actions aimed at consistent introduction of market mechanisms, notwithstanding the growing resistance of some social groups. Privatization programmes implemented within the transition framework facilitated foreign capital entrance into the economies. They allowed foreign capital to be engaged in the restructuring policies without the need to take loans. The CEECs had a twofold expectation toward the foreign investors:

- foreign capital would significantly increase the capital resources of the economy;
- there would be technology transfers from the subsidiaries of the foreign companies to local enterprises. Spillover effects would contribute to increasing productivity of the local businesses cooperating with the foreign companies.

There were fears that CEECs participation in the global economy processes could be peripheral if foreign capital was invested in low value added areas and did not cooperate with national manufacturing structure. Multinational companies were first to benefit from open post-socialist economies. They located their main branches in three countries: Hungary, the Czech Republic and Poland. For the multinationals, a broader market was the most essential, more than lower labor costs or the relatively high productivity of Eastern European workers. Other circumstances were important too: favorable attitude of the authorities, tax exemptions in the initial phase of operation, and other administrative actions facilitating the operation of the new foreign companies. In the CEECs, the foreign companies located mostly production of mature products. This was accompanied with a policy to export goods and production units. The multinational leaders were followed by other companies, using strategies similar to those of the multinationals.

Foreign investors often decided to invest in joint-ventures in order to decrease business costs in the local market. They wanted to minimize the costs of operation in the CEECs related to undeveloped financial market, marketing practices and consulting. Foreign capital expanded especially in the financial services and consulting sectors, which, due to their backwardness, promised the largest potential growth. Privatization of the banking sector allowed many of the largest Western banks to enter the Eastern European market in a short time and on an exceptional scale. The overall outcome of the activities of the foreign investors in the CEECs within the last 15 years of systemic change is difficult to assess because of specificity of investment and internal social, economic and political circumstances in particular countries. It is also difficult to choose the criteria to evaluate the advantages and disadvantages of foreign capital presence in the CEECs.

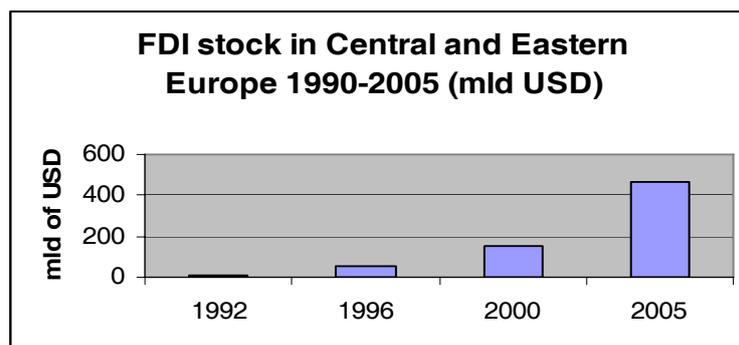
For a national economy it is crucial to establish a basis for long-term economic growth. In this regard, foreign companies' activities raise numerous questions. In the CEECs, the engine of growth is mostly international trade. For sure, the subsidiaries of foreign companies are more active exporters. The drawback, however, is that exports are tied with significant imports from subsidiaries from other countries. As in other regions of the world, the multinationals' subsidiaries in

the CEECs generally apply the practice of *transfer pricing*<sup>11</sup> leading to minimize the taxes paid in a host country, minimize custom duties and maximize the profits of the parent companies. The practice aimed to disguise capital investment profits transferred abroad and to hide their actual profitability is clearly visible in the CEECs. Usually, in the initial years of operation, the subsidiaries present significantly worse financial results. This does not result from the actual restructuring costs of the national enterprise taken over, but it is difficult to prove.

Privatization enabled capital and labor to be shifted to higher productivity sectors focused on exports. The liberalization of international trade, which was a state monopoly before, freed significant entrepreneurship forces in the CEECs. A lot of small enterprises appeared to increase competition and significantly improve company performance.

Two factors were decisive for the place and role of foreign direct investment in the CEECs: the consistent application of the Structural Adjustment Programme (SAP) and implementation of the provisions of the Association agreements. In the former case, the conditions of help in the stabilization and transition programme were essential (IMF conditionality) (Mayer, 2004). The SAP established stable economic and political conditions for foreign capital inflows, being both portfolio and direct investment. Thus, in the following years the volume of direct investment in the CEECs increased systematically. The largest share of investment in Central and Eastern Europe went to the CEFTA countries.<sup>12</sup> During the 1990's \$ 150 mld of USD were invested in the CEECs. Capital inflows were different in different countries. The most was invested in Hungary, Poland, Czech Republic and Slovakia.

Chart 2.



Source: OECD /FDI database.

FDI significantly changed the structure of international trade of the four CEECs. The share of medium and high technology products increased. As a result, there was a change in international trade specialization. The share of intra-trade

<sup>11</sup> See Editor's Notes.

<sup>12</sup> Central European Free Trade Agreement

increased in both Czechoslovakian states and in Hungary, and to a lesser extent in Poland (Dupuch, 2004; Freudenberg, Lemoine, 1999; Kaminski, Ng, 2005).

Increased inflows of foreign direct investment (FDI) to the CEECs, and in particular to the CEFTA states produced effects related not only to horizontal, but also to vertical FDI (Lankes, Venables, 1996; Brenton, Di Mauro, 1999). As a consequence, domestic companies from Central Europe joined the production and distribution networks of the largest enterprises. The Volkswagen network in the Czech Republic is a positive example of such FDI.

Increasing amount of foreign investment extended the connections between local and foreign companies. In the first transition period, subcontracting became the most frequent form of horizontal connection in Hungary and Poland. It enabled modernization of enterprises and production of more technologically advanced goods. However, the new production structure was not always followed by increased employment of more qualified workers. Subcontracting became a relatively stable and flexible form of production relations with foreign companies allowing domestic businesses to join European networks depending on their financial and productive capabilities. This form promoted some limited absorption of knowledge and new technology. It enabled domestic companies to advance to a higher level of cooperation, becoming part of international or multinational enterprise network. This kind of connections is visible in the practice of Hungarian companies (Szanyi, 2002).

The presence of FDI induced an increase in the productivity of domestic companies. Foreign investors in Hungary contributed to an increased demand for intermediary goods in the local market. A similar situation took place in the Czech Republic (Djankov, Hoekman, 2000). It encouraged local companies to invest and increase higher quality production. Foreign companies often help local suppliers to technologically enhance their products.

Foreign investment concentrates in widely open sectors, where externalities are the most evident. Productivity of companies rises which drives growth and development of exports (Schors, Van der Tol, 2002). In closed sectors, negative externalities emerge. Schor and Van der Tol's research shows that the importance of externalities is higher between than inside sectors. They add however, that this statement requires further analyses and comparisons between different transition countries. FDI has been usually placed in economically developed regions. In Poland it has been the western and central part. In Slovakia, the Bratislava region has attracted 71% of all foreign investment. The proximity of industrialized regions along the Danube in Austria and Hungary additionally contributed to this concentration in the "golden triangle". On the other hand, FDI deepened and strengthened the existing regional inequalities in the CEECs.

## **5. Social consequences of the transformation**

In a socialist economy, notwithstanding its evolution, it was the monopoly of the communist party that decided on the regulation of all areas of society. Allocation mechanisms based on administrative distribution of resources determined the

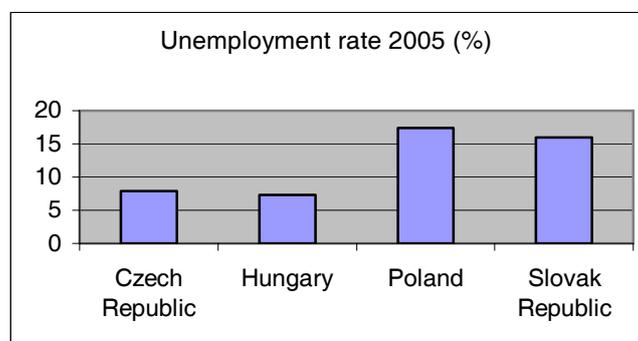
position of national economy sectors and the social position of employees. Two principles of distribution regulated social structure: according to work and according to needs. The first principle specified employee's wage and place in the national economy sector, the other, arbitrarily established by the central planner, reflected the preferences of the political authorities.

The Stalinist income distribution model was based on the principles of egalitarianism and central steering of social groups within social hierarchy. The full employment principle in socialist countries was applied quite consistently and created conditions of stable employment and low income. The reforms of the Stalinist system introduced essential changes to the allocation mechanisms (Kornai, 1980), but they did not break its foundations. Under the centralized system, the societies in socialist countries created specific social behavior, norms, incentives, other than those existing in Western countries. Although the social model developed throughout the years was criticized and not widely accepted, it ensured the stabilization of the existing social order.

The transition destroyed the existing social structure and brought many negative consequences for a large part of society. The social costs of transition (Ellman, 2001) consist of: 1. impoverishment; 2. decline in employment; 3. growth of unemployment; 4. increased inequality; 5. deterioration of public services and polarization of their provision; 6. spread of disease; 7. decline in fertility; 8. increase in mortality; 9. depopulation; 10. criminalization; 11. growth of corruption.

Unemployment was not known before the transition. Later it hindered the development of Central and Eastern Europe and led to a significant impoverishment of the societies of the CEECs. The emergence of new forms of poverty and regional inequalities has been major problems in all of the transition countries. Long-term unemployment was particularly important. 40-60 percent of the unemployed across the CEECs were out of work for more than one year (World Bank, 2005).

Chart 3.



Source: World Bank database

In Poland, the rural population was particularly affected. Several factors contributed to this situation: high prices of resources necessary for agricultural

production, lower demand for agricultural products due to impoverishment, food imports and the need to sell through intermediaries who enforced low purchase prices to maximize their own income. In 2002, almost 70% of Polish population was estimated to live below the social minimum, including around 11% below subsistence level.

The changes in income inequality in the first period of transition resulted from structural changes in employment patterns. The differential effects of economic transition were mostly driven by employment opportunities and the capabilities of households to react to labor market challenges (Toth, 2004). Education was one of the most important variables shaping these capabilities. In addition to the capabilities, the impact of transition on the households depended on the life cycle stage of the household at the time of transition. Inequality in labor earnings increased markedly and consistently throughout the 1990-1997 period. After 1997 unemployment decreased. Since 1998, absolute poverty (at \$2.15) a day has declined in most countries in the region. (Alam, Murthi, 2005). Long-term unemployment puts people at risk of further spiraling into exclusion and poverty. Poverty and social exclusion remain major challenges for Central and Eastern Europe. The social transfer mechanisms, including pensions, played an important role in mitigating increases in both overall inequality and poverty.

The growing income inequalities and regional disparities have posed problems for access to essential social services in these countries. During the transition, the public services that developed in socialist countries and used to be very cheap or free of charge, disappeared. Many public social provisions deteriorated or ceased to be public facilities - health care, education, pensions, the care for the disabled, public housing and pre-school child care. This especially affected the poor.

The transition and globalization merely expose the inherent weaknesses in social institutions. In the first half of the 1990's the reforms in the health care sector were introduced to adapt it to the conditions of the market economy. In Central Europe there exists a more pluralistic model of health care. Apart from public health care institutions there are numerous private clinics and hospitals, mostly for better-off citizens. Public health sector has faced two problems: on one hand the increasing number of patients (ageing) and on the other hand insufficient financing from the state budget.

The integration of the CEECs with the EU has increased competition between the old and the new countries. The wages and labor costs in Central Europe are more than two thirds lower than in Western European countries. The transfer or relocation of production to Eastern and Central Europe where taxation and non-wage labor costs are lower has been described as social dumping. Trade unions and politicians in Western Europe take defensive actions to create the European social model and enforce Europe's unique social policy. This would mean tax harmonization and the establishment of 'fair minimum tax rates'. The adoption of inefficient EU social and labor policy regulations entails risks for CEEC employment similar to those materialized in other regions (Belke, Hebler, 2002). It is understandable that the new EU member states do not support these proposals.

## **Conclusion**

At the beginning of the 21<sup>st</sup> century, the CEECs face new challenges for economic and social development. Under globalization they are only partially able to decide on their future as a whole. The extensive reform of their economic systems takes place in very difficult circumstances of dynamically changing global economy. These countries were relatively quick at getting involved in the processes going on in the most developed countries. Economic openness and integration with the EU have helped the CEECs to escape from the peripheries of the global economy where they got stuck after the Second World War.

The membership in the EU is a good chance for the CEECs to develop their economies. Political and economic integration processes in Europe stabilize the processes of profound political, economic and social change, which are difficult to implement under globalization. A threat for the CEECs comes in the form of an objection of the 'old' EU members to bear the costs of long-term development of Europe. Two-speed European integration brings fears of marginalization of economically weaker countries. Similar conclusions arise if the European Union implements the concept of supranational regional organization and is no longer a national states structure.

# Global Hierarchy and Centralization of the Economy of Russia

Dmitry MIROPOLSKY

## Introduction

Globalization is being implemented on the basis of a market economy. Therefore, Russia can fit into this process only as a country with a market economy. However, the Russian economy has always tended to centralization, in other words, to the tendency which is contrary to general market processes. Our task is to reveal the causes of such a tendency and to analyze how strong it is in Russia nowadays. In the first part of the paper I describe a Double Sector Structural Model (DSSM) which I have made for the analysis of Russian economy. In the second part the DSSM is used for studying the economic centralization of Russia. In the third part globalization is presented as the process of a formation of a new structure of the world economy, and, finally, in the fourth part I consider the possibilities of solving Russia's dilemma of 'centralization-decentralization' in the globalizing market economy.

## 1. Double Sector Structural Model

A logical premise for building the *Double Sector Structural Model (DSSM)* is the perception of the economy as a simultaneous process of production and consumption. In the framework of this short paper it is not possible to discuss the problem of value. So, I simply presuppose that we can measure both produced and consumed products somehow. The process of production can be presented with the help of the graph in Figure 1. On this graph on the  $x$ -axis, there are abstract economic subjects  $S'$  producing some products.

To understand this graph I suggest imagining an isolated prehistoric community of gatherers who dig out ground-nuts with sticks on the unlimited territory. These gatherers are marked on the  $x$ -axis of the graph. On the  $y$ -axis there are marginal products of production<sup>1</sup>  $MP'$ . The line  $MP_3' - S_3'$  is the function<sup>2</sup> of marginal products of economic subjects  $f(S')$ . We can see that an additional subject entering the production process in the framework of the economic system produces less of additional product.

---

<sup>1</sup> In economics, *marginal concepts* are associated with a specific change in the quantity of a good or service. Constraints are conceptualized as a border or margin. The marginal product or marginal physical product is the extra output produced by one more unit of an input. Marginal product is the additional product derived from additional units of labour (ed.) (see an example in Editor's Notes).

<sup>2</sup> See Editor's Notes.

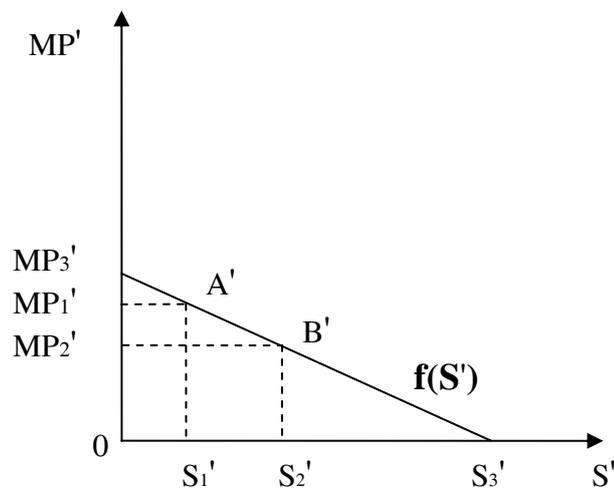


Figure 1. Marginal products of production<sup>3</sup> of economic subjects.

$OS'$  ( $S_1'$ ,  $S_2'$ ,  $S_3'$ ) – economic subjects (producers with capital and labour);  
 $OMP'$  ( $MP_1'$ ,  $MP_2'$ ,  $MP_3'$ ) – marginal products of production;  
 $MP_3'S_3'$  – the function  $f(S')$  of marginal products of production of economic subjects;  
 $OMP_3'S_3'$  – the whole produce made by a production system.

The area of the triangle  $OMP_3'S_3'$  – is the whole produce made by a production system. In the Marginal theory<sup>4</sup> the function of the product of a variable resource (usually labour) is analogous to Figure 1. But according to Figure 1 subjects  $S'$  are certain sets of labour and capital.  $OS_3'$  is a total number of such components in the system.

In our example with primitive men  $S_1'$  denotes the fifth primitive man of the community. During the working day he digs out with the help of a stick, say, 100 ground-nuts  $MP_1'$ .  $S_2'$  denotes the eighth man who digs only 70 nuts  $MP_2'$  with the help of a stick for the same period. The last man  $S_3'$  didn't find any nuts at all. The marginal product of the eighth man will be 70.

The process of consumption can be depicted with the help of the graph in Figure 2. On the graph on the  $x$ -axis there are the same economic subjects marked as  $S''$ , but here they play the role of the consumers of resources.

<sup>3</sup> In this model the term 'marginal product of production' means the product produced by an additional economic subject of the economic system.

<sup>4</sup> Marginal theory in economics is the study of the effect of increasing a factor by one more unit (known as the marginal unit) (ed.) (see an example in Editor's Notes).

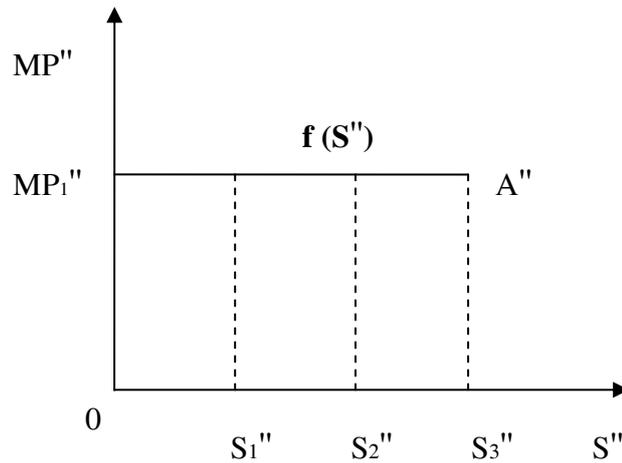


Figure 2. The marginal products of consumption<sup>5</sup> of economic subjects.

$OS''$  ( $S_1''$ ,  $S_2''$ ,  $S_3''$ ) – economic subjects (consumers of resources);  
 $OMP''$  ( $MP_1''$ ) – marginal products of consumption of economic subjects;  
 $MP_1''A''$  – the function  $f(S'')$  of marginal products of consumption of economic subjects;  
 $OMP_1''A''S_3''$  – consumed resources by an economic system (all economic subjects).

On the *y-axis* the value of the consumption (what subjects consume) is shown as  $MP''$ . Suppose for a given moment, for the convenience of explaining our Double Sector Structural Model, that all subjects consume an approximately equal amount of resources. Then, you see the horizontal position of the function  $f(S'')$  on the given graph showing that all subjects consume an equal amount of resources ( $OMP_1''$ ).

Coming back to our conventional example, let us suppose that while digging and producing ground-nuts by using a stick the fifth man  $S_1''$  worked for 10 hours. The overall value of his labour is equal to the value  $OMP_1''$ . The eighth man  $S_2''$  also worked for 10 hours and the value of his work during 10 hours also amounts to  $OMP_1''$ . So, the value of consumed resources (labour and stick) is equal.

There is an approximate analogy in Marginal theory where the graph shows the level of real wages equal for all units of labour.

The economic system is a single process of production and consumption. So, we can unite the graphs in Figures 1 and 2 into one graph (the graph in Figure 3). But before presenting an explanation of the united graph (Figure 3), for the purpose of convenience we consider a set of separate graphs related to Figure 3 (graphs in Figures 3a, 3b, 3c, 3d, 3e, 3f).

<sup>5</sup> In this model the term ‘*marginal product of consumption*’ means resources consumed by an additional economic subject of the economic system.

In all the graphs –  $S'$  – economic subjects which produce products;  $S''$  – economic subjects which consume resources;  $MP'$  – marginal products of production;  $MP''$  – marginal products of consumption.

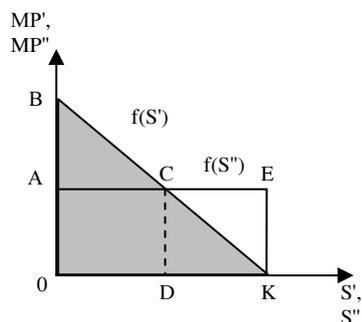


Figure 3a.

$OBK$  in Figure 3a (a coloured triangle) shows a whole product produced by an economic system.

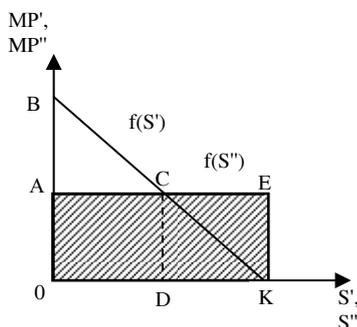


Figure 3b.

$OAEK$  in Figure 3b (a rectangle with strokes) shows the consumption of the resources by the system.

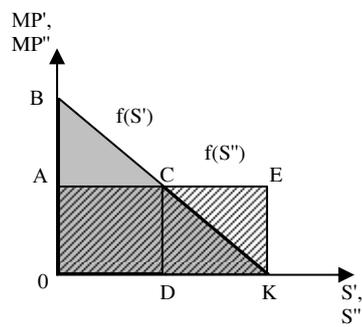


Figure 3c.

$OBCEK$  in Figure 3c (a coloured triangle with a rectangle with strokes overlaid) is a united graph.

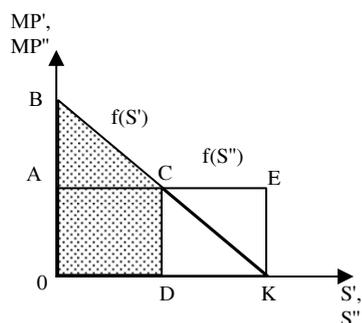


Figure 3d.

$OBCD$  in Figure 3d (a shaded part) is the 1<sup>st</sup> sector of the DSSM or the Basic sector (basic products), (see the later explanation)

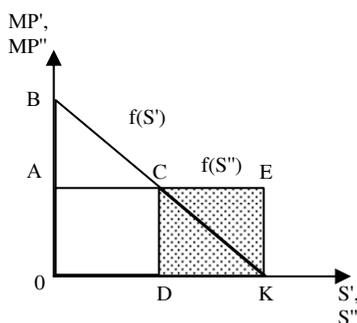


Figure 3e.

$DCEK$  in Figure 3e (a shaded part) is the 2<sup>nd</sup> sector of the DSSM or the Pioneer sector (pioneer products), (see the later explanation)

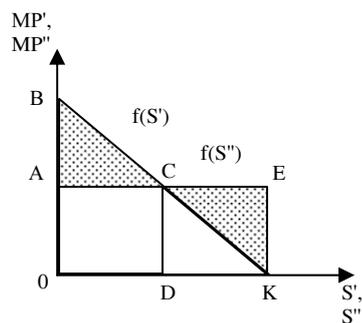


Figure 3f.

$ABC$  in Figure 3f (a shaded part) shows the production excess in the Basic sector.  $CEK$  (a shaded part) shows the lack of resources in the Pioneer sector. The graph shows the necessity of redistribution in a planned economy, (see the later explanation)

Now I want to explain the main graph in Figure 3 which presents an economic system as a single process of production and consumption. The area of a triangle  $OBK$  is the product produced by a system and the area of the rectangle  $OA EK$  is the consumed product. Compare the graphs in Figure 3 and Figure 4. On the graph in Figure 4 there is a neoclassical function of labour demand according to the Marginal theory which resembles our graph in Figure 3.

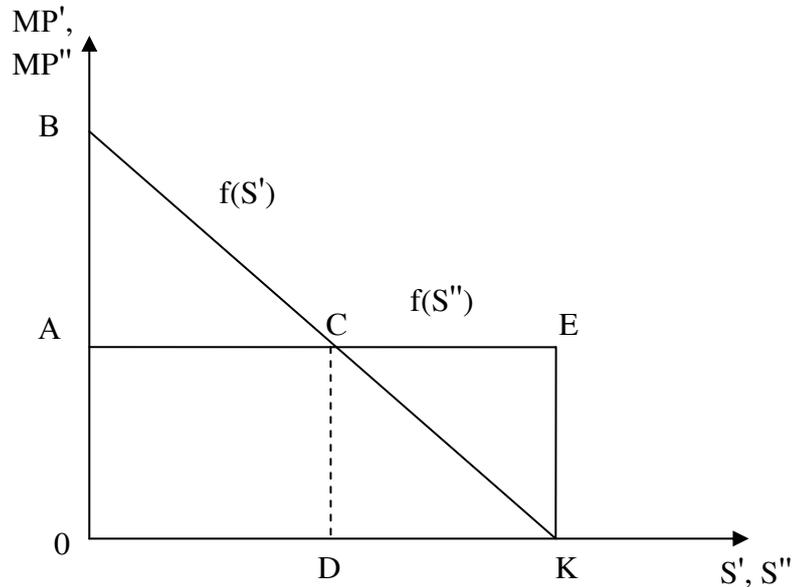


Figure 3. An economic system as a single process of production and consumption.

- $OS'$  - economic subjects as producers;
- $OS''$  - economic subjects as consumers;
- $OMP'$  - marginal products of production;
- $OMP''$  - marginal products of consumption;
- $BK$  - the function  $f(S')$  of the marginal products of production of economic subjects;
- $AE$  - the function  $f(S'')$  of the marginal products of consumption of economic subjects;
- $OBK$  - the whole produce produced by an economic system
- $OA EK$  - the consumption of resources by an economic system;
- $OB CD$  - the 1<sup>st</sup> sector of the DSSM or the Basic sector (basic products);
- $CDEK$  - the 2<sup>nd</sup> sector of the DSSM or the Pioneer sector (pioneer products);
- $ABC$  - the production excess in the Basic sector;
- $CEK$  - the lack of resources in the Pioneer sector.

The difference, as it has been already noted, is that instead of the units of labour  $N$  on the  $x$ -axis there are economic subjects. Besides, the process of production, Figure 3, is not limited by the point  $D$  but continues up to point  $K$ , that could mean in Figure 4 the movement from point  $N_1$  to point  $N_2$ .

We can see the economic system (Figure 3) consists of two sectors.

The *first sector* is a *resource abundant* sector. Here the value of the produced product  $OBCD$  exceeds the value of consumed product  $OACD$ . As a result we have an excess of resources equal to  $ABC$ .

The *second sector*  $DCEK$  is an *insufficient resource* sector. In this sector the cost of resources  $DCEK$  is bigger than the value of the produced product  $DCK$  (the lack is equal to the area  $CEK$ ). The economic content of the resource abundant sector is clear to see: here are the efficient subjects that have the sum of results higher than the sum of costs. But what is the content of the insufficient resource sector? It is possible to outline the following important elements forming the insufficient resource sector:

- the building of an economic unit is not finished;
- enterprises do not bring profits but their existence is necessary for the economic system because either there is no alternative or they are needed to support economic and social security;
- social and subsidized cultural spheres;
- production of luxury goods.

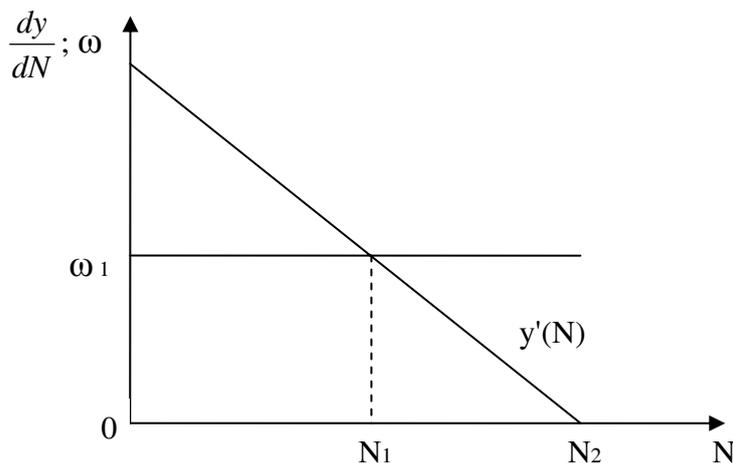


Figure 4. The construction of neoclassical function of labour demand.

$ON$  ( $N_1$ ,  $N_2$ ) - units of labour;  
 $\omega$  ( $\omega_1$ ) – real wages;  
 $\omega N_2$  ( $y'(N)$ ) – the function of marginal products of labour;  
 $\frac{dy}{dN}$  - marginal product of labour.

However, the highlighted positions are not the main components of the insufficient resource sector. The main content of this sector is the production of pioneer products.

We divide the produced products into basic and pioneer ones. The basic products are the products: a) necessary for living; b) having high productivity. The combination of these two qualities leads to the production characterized by high results and low costs. In other words, it relates to the resource abundant sector (Figure 3) where basic goods are produced.

Pioneer products have the following characteristics: a) they are not included in the list of necessary for living goods; b) due to their novelty, the productivity for their production is low. The combination of such qualities leads to lower results than expected from their costs. That is why economic subjects producing pioneer products find themselves in the insufficient resource sector. They form the core of the insufficient resource sector.

A pioneer product is a wider concept than an innovative product. I define an *innovative* product as a pioneer product produced *for the first time* in the world. A product that is attempted to be produced by a society lagging behind others in the world and which has been already produced by other societies is a pioneer product and cannot be called an innovative one.

Let us come back to Figure 3. To simplify even more the presented model in Figure 3 we will assume that the resource abundant sector  $OBCD$  is represented by basic products ('Basic sector'), and that the insufficient resource sector  $DCEK$  ('Pioneer sector') by only pioneer products. From the model it is seen that the Pioneer sector cannot exist without the Basic sector. The lack of resources in the Pioneer sector  $CEK$  can be filled in with the excess of basic resources  $ABC$ .

Then the question arises: which economic mechanism transfers the basic resources into the Pioneer sector of the economy? Let us consider Figure 5. The main difference between Figure 5 and Figure 3 is that in Figure 5 there is an economic model where the Pioneer sector  $D'C'E'K'$  in comparison with the Basic sector  $O'B'L'K'$  is not large. Can the subjects of the Pioneer sector under such an economic structure (Figure 5) sell their products to the subjects of the Basic sector and exist on the money gained in this way?

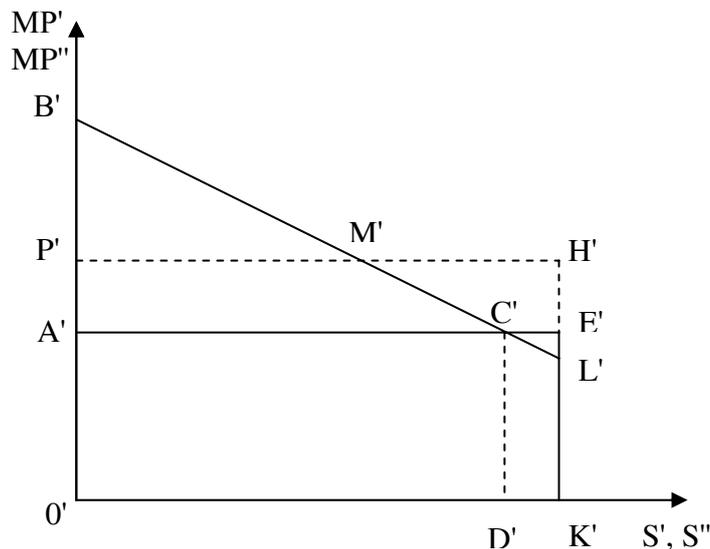


Figure 5. The structure of economy conditioning market relations between economic subjects.

$S'S''$  – economic subjects which produce ( $S'$ ) and consume ( $S''$ );  
 $MP'MP''$  – marginal products of production ( $MP'$ ) and consumption ( $MP''$ );  
 $O'A'E'K'$  – consumed resources by the system (labour and capital);

$O'P'H'K'$  – the gain from the realization of all production;  
 $A'P'H'E'$  – the profit received by all subjects of the economy;  
 $O'B'C'D'$  – the Basic sector (the first sector of the model)  
 $D'C'E'K'$  – Pioneer sector (the second sector of the model)  
 $B'L'$  – the value of produced products,  
 $P'H'$  – the line reflecting the gains from the realization of production at the market prices (for the simplicity in this model we admit that the sum of gains for all subjects is the same)  
 $P'B'M'$  – basic resources which move into the Pioneer sector and the most advanced Basic sector;  
 $M'H'L'$  – the need of the Pioneer sector and the part of the Basic sector in the resources which is satisfied at the expense of the resources  $P'B'M'$ .

A property owner needs profit from the invested capital, which would stimulate his activities. Suppose that in Figure 5 the rectangle  $O'A'E'K'$  means not only consumed resources by the system, but an invested capital, with the depreciation taken into account during one cycle of production; the rectangular  $O'P'H'K'$  is the gain from the realization of all production. Then the rectangle  $A'P'H'E'$  is the profit received by all economic subjects, with a share of the profit going to each subject, which stimulates their entrepreneurial activities.

We can see that in Figure 5 the line  $B'L'$ , reflecting the value of products in the production, and the line  $P'H'$ , reflecting the realization of this production at the market prices, diverge. This happens because part of the subjects of the Basic sector sold their produce at the lowered prices (the length  $P'M'$ ), meanwhile a part of the subjects of the Basic sector and all the subjects of the Pioneer sector have sold the produce at the raised prices (the length  $M'H'$ ). As a result, basic resources of the amount  $P'B'M'$  have moved into the Pioneer sector and the most pioneer segments of Basic sector  $M'H'L'$ .

However, in spite of the fact that the Basic sector has lost resources all its subjects have received an acceptable profit. Such a situation is possible due to the original condition: the Pioneer sector is small in comparison with the Basic one. Thus the excess resources of the Basic sector are enough for the provision of the profits both in the Basic sector and in the Pioneer sector. In other words, the proportion between the sectors of the economy allows the economic system to function on a market basis.

It is not possible to illustrate the situation which is in Figure 5 using our previous example with primitive men without introducing a corresponding transformation. Now, all primitive men with their ground-nuts form the Basic sector of economy  $O'B'C'D'$ . The Pioneer sector  $D'C'E'K'$  is represented by the tradesmen who brought the primitive men some pieces of copper. The copper has just started to be melted (for production) and it is not very useful yet, and it is a very expensive product. However, the primitive men have a lot of ground-nuts exceeding their need for nourishment (the excess is equal to  $A'B'C'$ ) and copper is a mysterious and desired object for them. That is why, during negotiations, the exchange of nuts and copper will be in favour of the tradesmen. The tradesmen will take away a lot of nuts leaving primitive men a little copper. In the end the existing centre of metallurgy will receive resource provision at the expense of nuts.

But the primitive men will also have some gains. After the trading exchange they will have enough excess of nuts and they can invest them in anything they value. The overall profit which both the primitive men and the tradesmen have got is expressed with the help of the rectangle  $A'P'H'E'$ .

Now suppose another case in which the Pioneer sector compared with the Basic one is large. This case is presented in Figure 3. Here the excess of basic resources is equal to the lack of resources in the Pioneer sector ( $ABC = CEK$ ). Consequently, under the conditions of the provision of the Pioneer sector with necessary resources the market prices will be settled at the level where the gain will coincide with the costs  $OAEK$ . Naturally, the property owner will not occupy himself with the business which does not bring him profit. So, if the structure of the economy is supposed to be unchangeable, then under such an economic structure the power of the bureaucracy will be established instead of that of the bourgeoisie. The bureaucracy will redistribute basic resources into the Pioneer sector using a planning mechanism instead of a market one.

A structural approach is not very popular in economic theory. Nevertheless, it occupies a certain position in the scientific literature. Suffice to say, it is represented in the works by Clark (Clark, 1957), Bell (Bell, 1999), Fourastie (Fourastie, 1954), Romer (Romer, 1986) and Horvath (Horvath, 1976). Sraffa's<sup>6</sup> direction can be also classified as structural (Kurz, Salvadori, 2004). With a certain reserve, Schumpeter (Schumpeter, 1982) and Mensch (Mensch, 1975) can be considered as authors using a structural analysis; models originating from the Marxist tradition to divide the economy into subdivisions are also structural (Leontyev, 1958; Koshimura, 1987). In Russia a structural approach also has gained adherents (Kondratyev, 2002; Yaryemenko, 1997; Glazyev, 1993; Yakovets, 2004; Selischeva, 2005; Saulin, 2005).

However, the suggested Double Sector Structural Model has an advantage. It allows a direct and immediate connection of *the structural material characteristics of the economy with the organization of either planned or market economies*. Plan and market depend on the available material structure and they are, actually, based on what is available in the country (first of all, it concerns the proportion of the Pioneer and the Basic sectors).

In the works of the above-mentioned authors I could not find such a connection. The Double Sector Structural Model (DSSM) is presented in brief here. The sphere of consumption is omitted completely. A more detailed explanation of this model can be found in my other publications (Miropolsky, 2004).

Thus, there is a rigid interdependence between the material structure of the economy and its form of organization – planned, market or mixed. As well, such interdependence concerns a modern Russia that is involved in the process of globalization.

---

<sup>6</sup> Pierro Sraffa (1898-1983) was an influential Italian economist whose book *Production of Commodities by Means of Commodities* is regarded as founding the Neo-Ricardian school of Economics (ed.).

## 2. The double sector structural model and specific features of Russia's economy

In the framework of this short article it is not possible to describe the whole economic development of Russia. So, I want to mention only the well known fact that the economy of Russia has always been characterized by higher degree of centralization than the economies of Europe and the USA. It is also known that when compared to Europe and the USA, Russia has lived under the system of a catching up economy, beginning with Peter I<sup>7</sup>. According to the logic of the Double Sector Structural Model the catching up development means that there is a rapid increase of the Pioneer sector of the economy which presupposes the increase of pressure on resources in the Basic sector of the economy. The increase of resource burden on the Basic sector in its turn pushed the economy in the direction of planning (Figure 3) instead of market (Figure 5). The formation of the Soviet Union<sup>8</sup> where both the bureaucracy and directive planning dominated, in no way interrupted the previous process. On the contrary, it was a completion of the historically long lasting tendency of the centralization of Russia's economy. I absolutely agree with the opinion that the "economic policy of Witte – Stolypin<sup>9</sup> with the constant industrialization planning anticipated what was fulfilled by Stalin starting from 1928" (Werth, 1994: 61).

The Soviet Union became a superpower but superpower No 2. It had to catch up with the USA in many aspects. Let us depict the relations of two symbolic superpowers with the help of the Double Sector Structural Model (Figure 6). In Figure 6 the upper graph represents a symbolic market superpower. It has a powerful Pioneer sector in comparison with other countries in the world. However, it has supported and developed the Pioneer sector by means of the market because the Basic sector of this superpower has been large. The excess basic resources  $A'B'C'$  are sufficient for provision of economic units with profits in both the Basic and Pioneer sectors.

The competing and catching up superpower is depicted on the lower graph (Figure 6). If it is competing, it must have the same Pioneer sector as the leading superpower. On the graphs the lengths  $D'K'$  and  $DK$  are equal. It means that in the Pioneer sectors an equal number of subjects are engaged. In other words, the competing and catching up superpower gets into a kind of trap.

---

<sup>7</sup> The Russian tsar Peter I (the Great) reigned from 1682-1725. Peter I carried out a policy of westernization and expansion (ed.).

<sup>8</sup> The Soviet Union or the Union of Soviet Socialist Republics (USSR) was a constitutionally socialist state that existed in Eurasia from 1922 to 1991. It emerged from the Russian Empire following the Russian Revolution of 1917 and the Russian Civil War of 1918-1921 and grew to contain 15 union republics (ed.).

<sup>9</sup> Pyotr Stolypin served as Nicholas II's Chairman of the Council of Ministers from 1906 to 1911. He tried to promote agrarian reforms in order to create a class of market-oriented small-holding landowners. Count Sergei Witte was a highly influential policy-maker who presided over extensive industrialization within the Russian Empire. He was also the Chairman of the Council of Ministers of the Russian Empire (ed.).

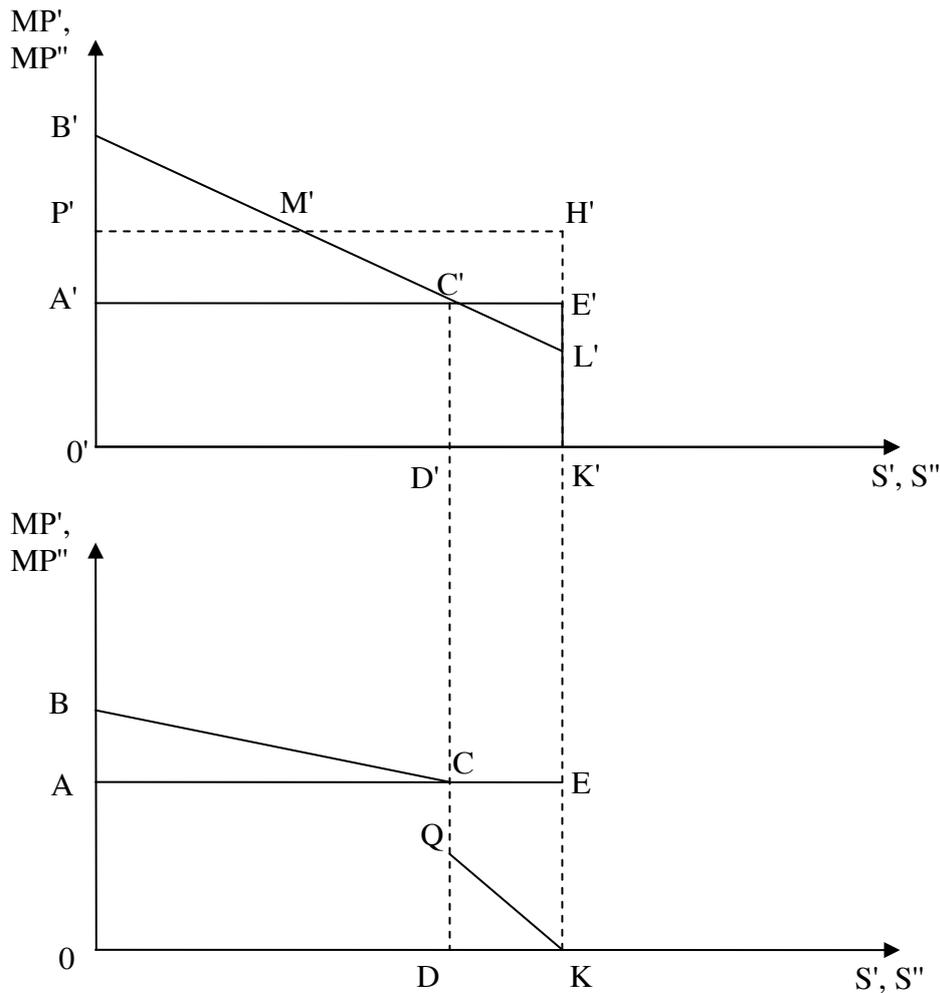


Figure 6. Structural conditions of the struggle between two superpowers.

The upper graph represents a leading superpower with a market economy;  
 The lower graph represents a catching up superpower with a planned economy;  
 $S'S''$  – economic subjects which produce ( $S'$ ) and consume ( $S''$ ) products;  
 $MP'$  – marginal products of production;  
 $MP''$  – marginal products of consumption;  
 $O'B'L'K'$  – the whole production of a market economy;  
 $OBCQK$  – the whole production of a planned economy;  
 $O'A'E'K'$  – resources consumed by the market superpower;  
 $OAEK$  – resources consumed by the planning superpower ;  
 $O'B'C'D'$  – products of the Basic sector produced by the market superpower;  
 $OBCD$  – products of the Basic sector produced by the planning superpower;  
 $C'E'K'D'$  – resources consumed by the Pioneer sector of the market superpower;  
 $DCEK$  – resources consumed by the pioneer sector of the planning superpower;  
 $A'P'H'E'$  – the profit received by economic subjects of the market superpower;  
 $C'EL'$  – the need in resources of the Pioneer sector of the market superpower;  
 $D'C'L'K'$  – the output of pioneer products by the market superpower;  
 $CEKQ$  – the need in resources of the Pioneer sector of the planning superpower;  
 $DQK$  – the output of pioneer products by the planned superpower  
 $A'B'C'$  – excess resources of the Basic sector of the market superpower  
 $ABC$  – excess resources of the Basic sector of a planning superpower.

It cannot choose which Pioneer sector to develop. The Pioneer sector must be on the same level (or almost on the level) of the leading rival.

Let us suppose conditionally that the scale of the Basic sector of the catching up superpower is the same as that of the leading power ( $O'D' = OD$ ). But then the differences start. In the catching up superpower, economic subjects have higher costs than those in the leading superpower: the rectangle  $O'A'E'K'$  is smaller than  $OAEK$ . The output in the Basic and Pioneer sectors is lower ( $O'B'C'D' > OBCD$ ;  $D'C'L'K' > DQK$ ). Such a less favourable ratio of results and costs in the catching up superpower leads to the situation where the excess of basic resources ( $ABC$ ) turns out to be equal to the lack of resources in the Pioneer sector ( $QCEK$ ). But this as we have shown already inevitably gives a rise to a planned economy. That is, with the ratio of costs and results presented in the lower graph of Figure 6 the catching up superpower can catch up and overcome the leading one only if it uses the mobilizing capacities of a planned economy. It proves that the Soviet Union, struggling with the USA for world domination, managed to support a similar Pioneer sector to that of the USA *only by planning because the material structure of the Soviet Union brought about higher costs and lower results in the economy*. This less favourable ratio led to the shortfall of the Basic sector simultaneously with the higher degree of resource consumption of the Pioneer sector.

Let us consider the objective causes for higher costs in the Russian economy independent of the type of economy (market or planned).

*Firstly*, there are severe climatic conditions in Russia, mainly the cold. A large part of the Soviet Union was the northern territories. They required higher costs on building, heating, food with more calories and warm clothes. Fiona Hill and Clifford Gaddy, the authors of the book 'The Siberian Curse: How Communist Planners Left Russia Out in the Cold' (Hill and Gaddy, 2003) recommend that for a successful Western type economy to be achieved, Russia must accept the idea of shrinking Siberia's cities, relocating the population to Western Russia, closer to Europe and its markets, because Russia cannot afford to keep the cities left by communist planners 'out in the cold'. In other words, they recommend clearing Siberia of its population and their identity in order to provide, as they see it, sustainable economic development for Russia.

*Secondly*, there is the factor of large distances. Sparse and scattered settlements demanded higher transport costs in the USSR.

*Thirdly*, there is the factor of virgin territories. Industrial development had to be started at places where there was neither population nor historically accumulated social and industrial infrastructure. In this connection it is worth remembering the development of the territory along the Baikal-Amur railway track.<sup>10</sup>

All these circumstances shifted the line  $AE$  up on the lower graph of Figure 6.

---

<sup>10</sup> The Baikal-Amur Mainline (BAM) is a railway line in Russia traversing Eastern Siberia and the Russian Far East and running north of and parallel to the Trans-Siberian railway. It was started in 1974 under the Soviet General Secretary Leonid Brezhnev as a huge Komsomol (young communists) undertaking and was declared complete in 1991 (ed.).

Now let us investigate the causes of the lower results in the Soviet economy. Comparatively low results comprise quantitative (productivity) and qualitative (the quality of produce) aspects.

*Firstly*, in comparison with the USA the USSR had more out of date technology and machinery. I mean both the technological backwardness of a number of industrial branches and the depreciation of the equipment. Outmoded technology and machinery resulted in both comparatively low productivity and a lower quality of output.

*Secondly*, the above-mentioned climatic and natural conditions also brought about a rather low productivity in the agricultural sector.

These two factors objectively shifted the line BC and the line QK down in Figure 6. Under such a ratio of costs and results the market economy in Russia *would never have turned Russia into a world power*. The plan, on the contrary, having *more capacities for mobilization*, helped to concentrate meager basic resources for the needs of the Pioneer sector.

Although having more capacities for mobilization than a market economy, the organization of the planned economy simultaneously brings about the effect of destimulation for the economic subjects. On the one hand, the better result is rewarded almost as much as the poorer result because all resources go to the common pool for the development of the Pioneer sector, and, on the other hand, the absence of competition for private-owners also reduces the eagerness to work harder. Such a specific effect of destimulation acts as an additional force increasing costs and worsening the results of the planned economy. So, in Figure 6 the line AE, on the one hand shifts up and the lines BC and QK, on the other hand, shift down not only *due to the objective specificity* of Russia but also as a result of the *effect of destimulation*.

*A planned economy is justified until the effect of mobilization is greater than the effect of destimulation*. The effect of destimulation varied in the Soviet economy as far as the ratio of costs and results was concerned. However, the above-mentioned objective factors exist independently from the effect of destimulation - they raise the resource consumption of the Pioneer sector and decrease the return from resources in the Basic sector *regardless* the type of economic system.

Thus, on the eve of the collapse, the Soviet Union had a structure which was characterized by its Pioneer sector being comparable to the Pioneer sector of the USA but a much poorer Basic sector of the economy in comparison to that of the USA. Consequently, the structure of the Soviet economy presupposed exclusively a planned economy.

The collapse of the Soviet Union meant a double revolution.

*Firstly*, there was the transition from a planned economy to a market economy. But if the structure of the economy of the USSR presupposed planning, then what did this transition to market mean?

*Secondly*, it was Russia's specific transition from the industrial stage to the post-industrial phase. One of the realities of the postindustrial world is globalization; for Russia to fit into the post industrial world means the necessity of fitting into the world of globalization as well.

### 3. The double sector globalization

The definition of globalization has been widely discussed. However, I think the increasing polyphony of the various explanations of globalization can be reduced to two main positions. According to the first position, globalization is another successive stage of the internationalization of the economy, characterized by such phenomena as a more rapid growth in the international movement of goods, capital and information and the growth of a number of transnational companies. In the framework of this position, it is either denied that the world economy starts to dominate the national economy, or, it is not used as a basis for the explanation. National economies continue developing in the direction of the world economy, trespassing the limits of a nation-state. However, their role of a basic mechanism in international relations has been preserved (Welfens, 2005; Eickhof, 2005; Fehl, 2000; Feiguine, 2004; Nekipelov, 2004; Yevdokimov, 2004; Cherenkov, 2004; Gubaidullina, 2005; Bazylev, Soboleva, 2005).

The second position highlights the fact that globalization is a process that differs qualitatively from the preceding stage of the world economy. The qualitative difference is that national economies are transforming into the parts of a more complicated whole, i.e. into a world economy. So, it means that the division of labour is taking place at the world level and national economies are simply engaged in specialization and are not self-sufficient sections of a single national system any more (Castells, 2000; Hirst, Thompson, 1996; Delyagin, 2000; Ryazanov, 2004; Buzgalin, Kolganov, 2003; Rzhetskaya, 2006). I support the second point of view about globalisation.

If there is a division of labour in the basis of globalization, then it is necessary to define our understanding of the division of labour. We consider that the fundamental core of the concept of division of labour is the specialization of economic subjects in the basic and pioneer products. One can observe the appearance of the economic units permanently specializing in both the production of basic products and the production of pioneer products.

On the industrial stage specialization in basic and pioneer products takes place inside national economies. Theoretically, every national economy could have its national Pioneer sector and its national Basic sector.

On the postindustrial stage, specialization in basic and pioneer products stops being confined within the national economy; it becomes supranational. This means that some nations specialize in pioneer products and others specialize in basic products.

What is the need for such international specialization? In my opinion this is caused by the fact that the resource consumption of the world Pioneer sector in the postindustrial age sharply increases and if there are at least two parallel world Pioneer sectors functioning and consuming global resources, then the resources of the planet will not be enough for their provision.

The following indirect data can be used to support this statement:

About 80–90% of production involving science-intensive work in the world is shared by seven highly developed countries. (Varshavsky, Sirotkin, 1999); the annual turnover in the market of new technologies and science-intensive production is several times higher than the turnover in the market of raw materials; the share of the USA in the turnover of science-intensive products constitutes 39% (Ryabykh, 2004); in the world there are approximately 50 macro technologies providing competitive production; seven highly developed countries possess forty-six out of the fifty macro technologies (Varshavsky, Sirotkin, 1999); the share of the USA is 20-22 out of those 46 macro technologies (Varshavsky, Sirotkin, 1999).

We can observe that at present there is a great technological distortion of the share held by highly developed countries when compared to the rest of the world, with the USA being an absolute leader among the highly developed countries.

The question is, “Are there enough resources on the planet to give a chance to the rest of the world (besides a superpower) to finance the necessary costs of research and development to the same high degree of the superpower?” Innovation is, indeed, a very expensive field nowadays. But the most important thing is that, in the developed countries, starting from the 1960s, we can observe the trend of increasing the share of expenditure on research work and projects in the Gross Domestic Product (GDP). So, this tendency tells us that this expensive field of activities is going to become even more expensive for these countries.

Thus, on the one hand, a huge amount of money is necessary to cover the increased costs on research, and, on the other hand, the traditional branches of industry more often face up to the restrictions connected with the depletion of natural resources and the need to restore the environment.

All these trends cannot serve us as the basis for a direct assessment, but nevertheless it is possible to suppose that the resource consumption of the world Pioneer sector in a postindustrial setting grows quicker than the gains from the resources of the Basic sector. So, in this paper I use the hypothesis that humanity can only support one centre of development. This hypothesis is indirectly confirmed by the collapse of the world socialist system headed by the Soviet Union. Objectively, one of the world centres of development had to be destroyed because there are not enough resources for the parallel existence of competing world Pioneer sectors simultaneously operating in the West and East.

Thus, the proportion of Basic and Pioneer sectors of the economy is shifting from the national level of the economy to the world level nowadays. Consequently, the world economy becomes a ‘Double Sector Economy’. One group of countries forms a world Pioneer sector and the other group of countries forms a Basic world sector. Hence, the main redistribution of basic resources goes not at the national level of the economy but at the global level, from the countries producing oil, gas, aluminum, bananas etc. to the leading countries of technological progress. It concerns, of course, the principal specialization. The leading countries have also a Basic sector in their structure and the countries supplying them with resources also try to develop some insignificant pioneer products that are important and interesting only for themselves.

If the proportion of Basic and Pioneer sectors is more appropriate to be considered at the world level instead of at the national one, then how can Russia, which lost the fight with the USA for world governance, fit this process? We need to unite the graphs in one model (see Figure 7).

#### 4. One-sector Russia

In Figure 6 the Soviet Union and the USA exist as two parallel worlds. Speaking about these countries, one must understand that, in fact, it was not a struggle between the USSR and the USA as isolated countries, but it was a struggle of two hierarchies of countries – a world socialist system and a world capitalist system – in anticipation of globalization. The USSR and the USA were on the top of these two hierarchies, concentrating the production of the main complexes of pioneer products on their territories. For the general analysis made in this paper the consideration of this aspect, however is not of principle importance.

Suppose that on the planet there are two core-periphery groups of countries. The first core-periphery group functions on a market basis and the second core-periphery group functions on a planned basis. Due to the lack of resources these two groups have to merge into one group and this merging is implemented according to the rules dictated by a market group (Figure 7). Theoretically, we can accept globalization based on a planned economy and a bureaucracy ruling over the world, but in practice we have globalization based on a market economy (Petersen, 2002).

If the formation of a global hierarchical system goes according to market laws, the whole group of countries with a planned economy, and Russia in particular, is subjected to privatization, deregulation of prices, liberalization of foreign trade and so on. For simplicity, let us suppose that all these measures have allowed Russia to introduce world prices immediately. This implies an increase of the gains of economic subjects in Russia from the value  $OAEK$  (equal to the value of costs) up to the value  $OPHK$  (Figure 7). But the line  $PH$  is lower than  $P'H'$  because the productivity of Russian enterprises is lower.

The problem is that the area of  $OPHK$  turns out to be larger than the area of  $OBMCQK$  (because originally  $OAEK = OBMCQK$ ). To put it in another way, in the planned economy of Russia in transition there are no resources allowing all economic units to have profit on capital. Thus the general rise of prices up to the world prices means that some economic units have to stop functioning so that those that have survived can have normal profits.

When taking into account that basic products are life supporting and pioneer products are not, it is not difficult to guess which economic units are to become victims in the course of the transition from a planned economy to a market one in Russia. The producers of pioneer products on the length  $WK$  cannot sell their products not only according to the world prices but even at any price at all.

As a result, the new, market equilibrium is reached in the model when that part of the pioneer sector equal to  $WFHK$  liquidates itself under the full freedom of entrepreneurship and the legal equality of all. In other words, the transition of a

planned economy to a market economy leads Russia to an inevitable transformational recession with the epicenter in the Pioneer sector. The structural meaning of this recession is that the market core-periphery zone destroys the core of the competitor of a planned economy, preserving only its periphery's production<sup>11</sup>.

I want to remind you that I am trying to model in a simplified way the process of the formation of a planetary economy with a single centre and a single periphery. If in world competition a market core-periphery zone has won, then it is this zone that is going to get additional basic resources from its losing rival for the development of its resource capacity for pioneer products of new generation. Have a look again at the lower part in Figure 7. We can see that the market group of countries can take advantage of the resources of the just deceased pioneer sector *WFHK*. In practice it means the very cheap buying up of scientific projects and specialists who are not in demand any more in the former planned economy. For example about 40% of physicists and mathematicians who are working in the USA nowadays have come from the former USSR (Kharlamov, Popchenkov, 2004).

However, according to the model presented in Figure 7, the remainder of resources is still in Russia where economic growth with structural market characteristics is observed. It clearly contradicts the original idea according to which the market core-periphery zone, after dictating the conditions of unification, gets access to the basic resources of the defeated rival of a planned economy.

To solve this contradiction we will consider the Basic sector of Russia's economy more attentively in Figure 7. The Basic sector is divided into two subsectors. In the subsector *OBMZ*, firstly, the most basic products are produced and, secondly, there are products whose actual value is higher than the gains expressed in prices and this difference is equal to the value *PBM*. The second subsector *ZMYD* is characterized by the production of less basic products the value of which is lower than the gains (this difference is equal to the value *CMY*). An analogous subsector exists in the market zone, yet there it is smaller. The larger size of subsector *ZMYD* in Russia is connected with the already mentioned lower quality of production produced by Russia's economic units. Similarly lower quality can be found in many pioneer products. Because external economic activities have been liberalized in the former planned system, enterprises face the choice either to deal with foreign partners or with domestic ones. In fact, this choice is only for the enterprises that are on the length *OZ*. They produce fuel and raw materials the quality of which is mainly determined by nature, not by man. So it is these that must choose whether to buy basic or pioneer products of lower quality at home or to buy them from their former enemy in exchange for their gas and oil. In addition to the factor of quality there are unfavourable institutional and psychological factors, which I do not consider here.

---

<sup>11</sup> The author means two core-periphery zones: a core-periphery zone of the first superpower with a market economy and a core-periphery zone of the second superpower with a planned economy (ed.).

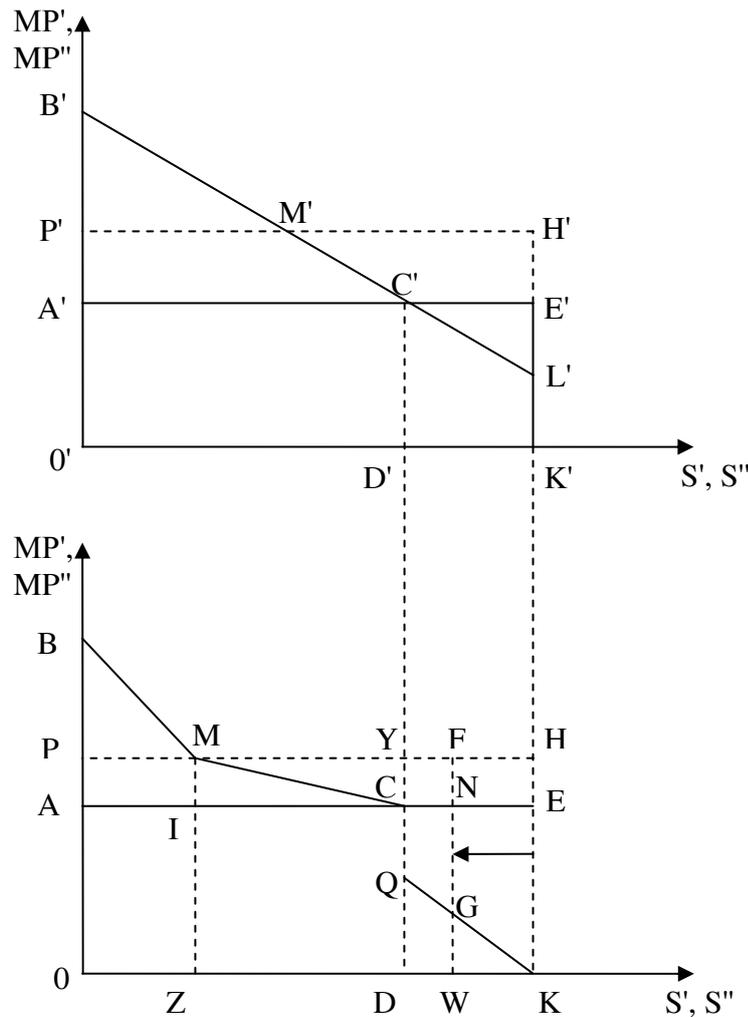


Figure 7. Fitting Russia into global economy.

The upper graph represents the economic system of the USA.

The lower graph represents the economic system of Russia in transition from a planned economy to a market economy.

*The upper graph:*

$S'S''$  – economic subjects which produce (S') and consume (S'') products;

$MP'$  – marginal products of production;

$MP''$  – marginal products of consumption;

$O'B'L'K'$  – the whole produce produced by a market economic system;

$A'P'H'E'$  – the profit received by the subjects of market economy;

$O'A'E'K'$  – the resources consumed by market economy;

$D'C'E'K'$  – the resources consumed by the pioneer sector of market economy;

$B'L'$  – the function of the marginal products of a market economic system;

$C'E'L'$  – the need in resources of the Pioneer sector of market economy;

$D'K'$  – subjects of the pioneer sector of market economy;

$M'H'L'$  – resources received by the Pioneer sector of market economy and by some subjects of the Basic sector;

$D'C'L'K'$  – the products produced by the pioneer sector of the market system;

$A'E'$  – the level of costs in the market economy;  
 $A'C'$  – the level of the costs in the Basic sector of market economy;  
 $OB'CD'$  – the Basic sector of market economy;  
 $D'C'E'K'$  – the Pioneer sector of market economy.

*The lower graph:*

$OBMCQK$  – the whole production by the former planned economy in transition to market;  
 $OAEK$  – the whole consumption by an economic system in transition;  
 $OBMCD$  – the Basic sector of an economic system in transition;  
 $DCEK$  – the Pioneer sector of an economic system in transition;  
 $APHE$  – the profit received by economic subjects of an economic system in transition;  
 $AE$  – the level of costs of an economic system in transition;  
 $QK$  – the marginal productivity in the Pioneer sector of an economic system in transition;  
 $DQK$  – the output of the production in an economic system in transition;  
 $DYFW$  – the gains from the sales of the pioneer products in the survived Pioneer sector of the economic system in transition after reduction;  
 $WFHK$  – the potential gains of the part of the Pioneer sector which does not exist anymore in an economic system in transition;  
 $OBMZ$  – the segment with high profits of the Basic sector of the economic system in transition.

So the choice of the subjects on the length  $OZ$  is easy to guess: they will buy foreign pioneer products of better quality. The consequences of such a choice can be rather favourable for the victorious group of market countries. Now they can reap the fruits of their victory to the greatest extent. The economic units of the former planned economy of Russia situated on the length  $ZD$  either go broke or struggle for survival. The pioneer products and the resources of enterprises on the length  $DW$  can be bought up at a symbolic price. Only the enterprises on the length  $OZ$  are recognized as competitors in the world market (the market of the victorious grouping). They sell oil and gas at the world prices and receive a normal profit from the capital. And the excess of basic resources, at a size of  $PBM$ , is now at the disposal of the victorious group and can be used for the development of new pioneer products. But there is another problem: an essential part of the profits from the sales of raw materials and fuel,  $APMI$ , is lost by the former planned economy due to the flight of capital abroad, giving to the countries of the market group additional resources for development.

In order to make the picture clearer let us not assume that the democratized former planned economy of Russia has products of a lower quality. Russia's economy, as has been already mentioned, lost the part of its pioneer sector of size of  $WFHK$ . However, an existing part,  $DYFW$ , which has survived, can be reproduced at the market level. At first one can think that if Russia's economy has turned into a market economy then it must start functioning similarly to that of the West. Such an illusion can be kept while considering the situation over a short period of time during which the Basic sector of the former planned economy will use the new technologies created by its own full scale former Pioneer sector  $DYHK$ . However gradually the flow of new technologies will reduce, for the existing Pioneer sector has substantially shrunk after democratization and the

introduction of market relations. On the contrary, in the market group, it has widened. To sum up, if we consider a longer period of time then the quality of the basic products of Russia's economy, due to the lack of innovations, is going to become worse, unlike the quality of the basic products of the market group.

If, indeed, we believe that in the modern globalizing world only one centre of development can exist, then any country or a group of countries has the chance to claim to be such a centre only after transforming the USA into its raw material supplier. We are not ready to assess the situation in all the regions of the world. N.Ivanova optimistically assures us that "there are no obstacles which cannot be overcome in order to develop innovations even in the countries which were considered to be the poorest 30-40 years ago" (Ivanova, 2001: 81). She uses South Korea, India and China as examples. But Russia, which is a wreckage of the former USSR and the disconnected and devastated centre of a planned system, is unlikely to achieve such a mission of being the only world pioneer sector.

It is more realistic to suppose the following: the single core-periphery world economy is not the highly developed core and low developed periphery but it is a hierarchy of countries; the hierarchy is defined by the proportion of basic and pioneer products produced by these countries. The greater the share of pioneer products in the national production of the country, the closer is this country to the world core in the world economic system.

If Russia cannot be a core country of world development any more its aim must be to approach the core as close as possible and consequently to climb higher in the world hierarchy. Thus Russia's national interest is the preservation and galvanization of what has been left from its Pioneer sector as much as possible. The question is how to do it. To use the theory of home advocates of the free market, the logic will be approximately the following: international competition and inner liberalization wake up the creative forces of the market in Russia; the creative forces of the market will allow costs to be reduced and productivity and quality to be raised.

Translating this idea into the language of the Double Sector Structural Model it is possible to claim that if under a planned economy the effect of destimulation was observed, which, as it has been noted, reduced the productivity and quality and raised costs, then under market conditions the opposite effect of stimulation occurs. This effect, positively influencing productivity, quality and the reduction of costs, will shift the line *BMCQG* up in Figure 7, and the line *AN* down. These shifts a) will allow the economic subjects placed on the length *ZW* to exist normally under market conditions and b) can even restore a part of the dying Pioneer sector on the length *WK*.

Such reasoning seems unconvincing to us. Suppose that the effect of market stimulation has, indeed, taken place. Even so, such an assertion needs to be studied and the proofs found, especially if we take into consideration psychological and institutional factors. Nevertheless, we are ready to adopt an optimistic approach and we will admit that such an effect of stimulation exists. In Russia, after producing its positive effect, the stimulation will soon confront the above-mentioned objective factors of high costs, low productivity and quality.

## Conclusion

So, my conclusion is the following: at least a partial revival of the Pioneer sector in Russia is possible but it is, perhaps, at the expense of a traditional increase of the role of a state (that is the role of planning) in the economy. But I must admit that here a main contradiction is hidden if we speak about Russia's inclusion into the process of globalization. If Russia's aim is to occupy more or less a decent place in the world core-periphery market hierarchy, then by returning to planning to revive the Pioneer sector, Russia will drop out of this market hierarchy. In order to preserve its place in the world hierarchy Russia has to strengthen its market but in this case it will lose its Pioneer sector and will find itself far behind others in the future.

If we take seriously the recommendations made by Hill and Gaddy (Hill and Gaddy, 2003) in 'Siberian Curse: How Communist Planners Left Russia Out in the Cold' and start shrinking Russia's territorial economy to the western and southern regions of Russia, then we come across the paradox: even this measure will demand a huge and prolonged interference by the state, which means planning again.

If globalization chooses to develop along the lines of a planned economy instead of market one then we will need to make a new analysis for the assessment of Russia's chances. However, that is not the subject of this paper.

So, the conclusion can be the following: under market globalization it is more advantageous for Russia to gradually restore the elements of a planned economy for the partial restoration of the Pioneer sector of the economy and a rise of its status in the world core-periphery hierarchy, but the restoration of a planned economy must be implemented via informal institutions combined with a constant outward declaration of the adherence to democracy and a market economy.

# Deviance in Russia under Globalization

**Yakov GILINSKIY**

## **Introduction**

The paper analyzes deviant phenomena in Russia such as criminality, alcoholism, narcotism, human trafficking, terrorism and suicide influenced by global processes. The current relevance of the research is defined by the widespread deviant phenomena in contemporary Russia, the debatable character of the concept of globalization itself and the lack of studies of deviance in Russia under globalization.

The aim of the paper is to show the interdependence between deviance and the process of globalization and also the globalization of certain deviant phenomena and to draw attention to the inadequate social management of such phenomena. The paper reveals the regularity of deviant phenomena in the globalizing world and examines the dynamics of deviance in Russia. It also considers the main concepts and problems connected with deviance; the role of globalization in the process of inclusion and exclusion; globalization of certain phenomena of deviance; and globalization of social control over deviance.

## **1. The main concepts and problems**

Globalization as a phenomenon is widely discussed in social sciences nowadays, and it has become a fashionable topic, including all the positive and negative consequences that arise (Bauman, 2004; Beck, 2001; Berger, Huntington, 2004; Cheshkov, 1999; Baylis, Smith, 1997; Mittelman, 1997; Steger, 2003). The concept 'globalization' is debatable and is used to denote different things:

- development of economic and political interdependence of countries and regions of the world to such an extent that the creation of a common world legal system and a world organization of economic and political management is possible or necessary;
- intensification of world social relations connecting distant regions in such a way that what happens far away influences what is going on in a particular locality and vice versa (Giddens, 1990);
- processes in which sovereign nation-states are interwoven into the network of transnational actors and depend on them for their power, orientation and identity (Beck, 2001).

Deviance is a social phenomenon occurring in relatively large and statistically stable forms (types) of human activity different from the officially fixed or naturally formed norms and expectations in the society (culture, group) (Gilinskiy,

2007: 28). Deviance as a social phenomenon reveals itself in various types of deviant behaviour - acts of behaviour of people (groups of people) not coinciding with the officially established or already existing norms in a given society (culture, subculture, group) (Gilinskiy, 2007: 23). The problems of deviance and deviant behaviour are reflected in numerous works (Giddens, 2005; Smelser, 1994; Bryant, 2001; Curra, 2000; Downes, Rock, 1998; Flowers, 2003; McCaghy, Carpon, Jamicson, 2000; Palmer, Humphery, 1990).

For the topic of this paper it is important to outline the following problems:

*First*, globalization is an objective process characterized by the activities of transnational companies; interdependence of countries (energy sources, raw material, technologies, etc.); world information systems; interconnectedness of financial systems; internalization and intensification of modern transport networks; increased flow of migration, followed by the interpenetration of ethnic cultures; the use of English as the means of international communication; formation of 'universal human values'; and the planetary character of ecological problems. Some Russian politicians misunderstand the situation and disregard objective globalization processes. It can only worsen Russia's performance in the world market and the situation in Russia itself. It drags Russia into the camp of outsiders. Suffice it to say that the Gross National Product (GNP) per person in Russia was only \$8,920 in 2003 with the average world GNP per person \$8,180; in Luxembourg - \$54,430, in the USA - \$37,500, in Norway \$37,300 and in Japan - \$28,620 (World Development Report, 2005: 258-266). By 2005 Russia had moved to the 147<sup>th</sup> place regarding life expectancy (women - 72 and men - 59). It means that an average Russian man doesn't manage to live to the pension age. Russia has one of the lowest life expectancies in the world. Russia is in the 231<sup>st</sup> place according to the coefficient of population growth and it occupies one of the first places in the world regarding the death rate (16.3 people per 1,000, meanwhile the average world death rate is 9, in Europe it is 11 and in Africa it is 15) (All Countries of the World, 2005).

*Secondly*, globalization has positive and negative consequences, with an unequal spread of positive and negative effects on the countries and regions of the world. In parallel to the process of globalization a process of differentiation and polarization is taking place. This fact is reflected in Roland Robertson's neologism - 'glocalization'. According to Wallerstein the world is divided into core, semi-periphery and periphery countries. Russia was classified by him as a semi-periphery country. "Though there are enough signs that it is degrading to a periphery country" states Pantin (Pantin, 1999: 227).

*Thirdly*, the process of globalization (internationalization) of different forms of deviance is taking place also, such as *prostitute trafficking, narcotics trafficking, organized crime and terrorism*. This is an expected process because deviance (its structure, scale and dynamics) depends on economic, political, social, demographic and other factors. Globalization is accompanied by the process of 'inclusion/exclusion', when some people and social groups turn out to be excluded from the society's life - economic, political and cultural (Paugam, 1999). Luhmann thinks that the worst of the possible scenarios will bring a meta code of

*inclusion/exclusion* - that means that some people will be included into the functioning system and others will be simply trying to survive. (Luhmann, 1998).

We consider the process of 'inclusion/exclusion' to be very important for the subject of this paper, because '*the excluded*' (countries, social groups, persons) serve as *a basis of deviance* in relation to criminality, alcoholism and addiction to narcotics, which is admitted by many researchers in the world (Finer, Nellis, 1998; Young, 1999; Gilinskiy, 2004). The on-going process of division of countries, social groups and people into the excluded and the included is stated by many researchers. For example Z.Bauman, who avoids using the terms 'the included'/excluded', prefers to speak about 'tourists' (the included) and 'tramps' (the excluded), emphasizing that these two groups are two worlds, two perceptions of the world and two strategies (Bauman, 2004: 142).

It is important to understand that globalization increases socio-economic inequality, which is the main cause of deviance. If, theoretically, it is well known that socio-economic inequality can create deviance (from K.Marx to R.Merton and 'radical criminology') the research of contemporary Russian criminologists has proved it empirically. The factor analysis shows that among a multitude of economic, social, political and demographic factors it is socio-economic inequality, the indicator of which is a *decile coefficient* (it reflects the difference of incomes of 10% of the wealthiest and 10% of the poorest ) and the *Gini index* (it expresses the degree of inequality in the distribution of incomes of the population), that correlates most closely with such phenomena of deviance as criminality: murder, suicide and other violent crimes (Olkov, 2004; Skifsky, 2006; Yuzikhanova, 2005).

According to Olkov's investigation of the situation in Russia in the 1990s the greatest number of registered murders - 32,300 a year - occurred in 1994 when there was the highest Gini index, and the lowest number of murders - 15,600 a year - in 1990 when the Gini index was lowest. In Russia the Gini index is one of the highest in the world. In 2000 it was 45.6 in Russia, Ecuador - 43.7, Bolivia - 44.7, meanwhile in Belgium - 25.0, Hungary - 24.4, Germany - 28.3 and Norway - 25.8 (World Development Report, 2005: 260-261).

But the globalization process can bring harm not only to poor countries but also highly developed ones. Beck remarks that globalization makes possible and evident what, perhaps, has always been present in capitalism but has been contained by democratic institutions of a nation-state.

Enterprises, especially those which operate on the global scale, play a key role, not only in the organization of the economy, but also in the societal life in general, because they have capital, create jobs and can pay big taxes. Transnational corporations 'disregard' the borders of nation-states in search of profit. Due to their transnational nature they, de facto, cancel the contract of loyalty to national institutions. If the social integrity was conditioned mainly by economic factors, the decrease of social integrity is greater in such a nation-state.

It is not by chance that the word 'globalization' brings about a range of emotions. Some people consider it as the forerunner of a civil society, the beginning of a new era of democratization; for others it means economic and

political hegemony of the USA, with world cultures becoming homogeneous and metastases of Disneyland (Berger; Huntington, 2004). Hence, there is the antiglobalist movement protesting against world-wide McDonaldisation, the spontaneous upsurge of 'the excluded' in Paris's outskirts and finally even Islamic fundamentalism.

*Fourthly*, in response to the globalization of deviant phenomena the globalization of social control over deviance is taking place: the foundation and activities of Interpol and Europol<sup>1</sup>; the development and adoption of numerous international laws and regulations conceived to counteract organized criminal groups, drug trafficking, money-laundering and terrorism; world legal agreements about the living conditions of prisoners kept in the penitentiaries and penal colonies (e.g. 'Standard Minimum Rules for the Treatment of Prisoners'); the dissemination of the idea and practice of '*community policing*', i.e. the 'partnership' between police and community; the development of the practice of restorative justice and juvenile justice; the universal tendency of abolishment of capital punishment and so on. At the same time researchers' attention is drawn to the increased repressive measures on the part of police and criminal justice directed, first of all, against the 'excluded', i.e. the so-called 'selective approach' of police and criminal justice (Christie, 2000; Christie, 2004; Robinson, 2002; Walsmley, 2004).

Here are some factors of deviance's genesis and criminogenic factors related to globalization and described by V.V. Luneyev (Luneyev, 2005: 127-130):

1. *The problem of employment.*

There is a new concept '20:80' which means that in the 21<sup>st</sup> century only 20% of the population will have work and 80% will be redundant. We consider it as a paraphrase of the concept 'inclusion/exclusion'. If 80% of the population becomes unemployed, without the means for living, it will be a great reserve from which deviance can arise.

2. *The problem of the markets of financial speculations.*

More than 80% of financial capital is not engaged in the production of real material goods. It is a 'market of roulette gamblers'. Financial crises will shake countries more and more, especially those that are not highly developed (for example, the Russian default of 1998, the financial problems of Eastern Asia and so on).

3. *The problem of the national government's management.*

There is a dramatic decrease in the possibilities for national governments to manage their societies and to provide social control over criminality. The criminologists have noticed this trend since the second half of the previous century. "We are facing a new test" (Turayev, 2002).

Revolutionization of the population at the beginning of the 20<sup>th</sup> century gave birth to revolutionary violence matching terrorism. Instead of taking political, economic and social measures the government reacted to the revolutionary

---

<sup>1</sup> See Editor's Notes.

violence by increasing police brutality. It resulted in the victory of the revolution in Russia with the possibility of spreading revolution to other countries.

“At the beginning of the current century political, social and economic disparities in the globalizing world push new revolutionaries-terrorists backed by poverty-stricken and ‘robbed up’ nations, to total terrorism against the rich and hated governments in the despised countries” (Luneyev, 2003: 34). Instead of responding by solving political, social and economic problems, ‘anti-terrorist’ operations and violence are organized by these governments.

Besides, there are global demographic disproportions and mass migration. “The hopelessness felt by the population of the countries with backward economies creates a social basis for radicalism and terrorism”, (Luneyev, 2003: 34) and other manifestations of deviance.

To sum up, globalization increases social economic inequality among people and societies and increases the scale of ‘the excluded’ - which is the social basis for deviant manifestations - and the gap between ‘the included’ and ‘excluded’. Globalization of economies, politics and cultures is accompanied by the globalization of both different types of deviance and social control.

## **2. Globalization of deviant phenomena**

### **2.1. Criminality**

There is a kind of correlation between criminality and other economic, social, political, demographic and cultural processes. Hence, we have the globalization of criminality which follows a general globalization path. We can observe some regularity of the expression of these correlations in the world (Luneyev, 2005).

However, since the end of the 1990s there has been a global trend of slower growth rate of criminality and the reduction of certain categories of crime in the world, which we can see below (based on Luneyev, 2005: 35-46; Barclay, Tavares, 2003; Shaw, van Dijk, Rhomberg, 2003: 35-63).

For example, in Europe in 2000-2001 the level of general criminality lowered: in Austria (-7%), Bulgaria (-3%), Denmark (-6%), Italy (-2%), Lithuania (-4%), Romania (-4%), Finland (-6%), Czech (-8%), Sweden (-2%).

The years of 1980, 1993, 2000 can serve us as the base years. In those years the level of criminality (per 100 thousand people) was the following:

in Denmark - 8,282; 12,084; 9,451 (correspondingly to the years of 1980; 1993; 2000);

in Germany - 4,873; 8,337; 7,621;

in Canada - 8,804; 11,447; 8,041.

That tendency of lower rate characterized the majority of developed European countries and countries of North America.

On the whole the level of general criminality (per 100 thousand people) rose from 2,500 in 1980 to 3,100 in 2000 in the world and, in particular:

- in North America it went down from 8,900 in 1991 to 6,000 in 2000;
- in the countries of the European Union this indicator rose from 5,000 in 1980 to 6,200 in 1994 with the following up stabilization and reduction to 6,000 in

- 1998, and again with some rise up to 6,200 by 2000;
- in the countries of Latin America and Caribbean basin there was a wavy fluctuation - 2,200 in 1980, 2,000 in 1984, and a little more than 3,000 in 1989 (and in 1993-1994), with the fall to 2,800 in 1997, and the rise again up to 3,500 in 1998-1999, and a little decrease in 2000.

In *Russia* there was a decrease of the criminality level during Gorbachev's Perestroika<sup>27</sup> (to 817 per 100 thousand of population in 1987), with the sharp rise up to 1,888 in 1993, and then some stabilization and the rise again up to 2,026 in 2000 and 2,692 in 2006 (Crime and Delinquency, statistical reviews, 1991, 1996, 2001, 2006). Analogous fluctuations referred to certain types of criminal cases. The level of murders was very high (more than 20-22 per 100 thousand people) beginning from 1994, which put Russia on the third place in the world after Columbia and the Republic of South Africa). It is important to state that the steady growth of registered criminal cases reflected the growing number of criminals without a permanent source of income, such 'excluded' constituted 11.8% in 1987, and in 2005 their portion reached 60.3 %.

The globalization of deviance is especially clearly manifested in the activities of organized crime (Gilinskiy, 2002: 202-25; Gilinskiy, 2003; Gilinskiy, 2007: 236-248; Gilinskiy, Kostyukovsky, 2006: 74-96). There are various definitions of organized crime. We can use the definition suggested at the International conference in Suzdal (Russia) in 1991: "organized crime is permanently functioning and managed communities of criminals engaged in committing criminal offences as their main business and creating a protective system of social control by means of corruption". Organized crime is not simply the aggregation of criminal groups and the criminal offences committed by them. It involves qualitatively new characteristics of criminality. It is built into the social system and affects its components, mainly its economy and politics. Organized crime is identified with entrepreneurship, business, production and distribution of goods and/or services (organized crime as illegal entrepreneurship). The formation and development of organized crime is a world process that is in conformity with certain laws. It is a particular case of better organized management at the subsystem level (economics, politics and so on). Organized crime was institutionalized in different countries at different times. The main characteristics of organized crime as a social *institution* are the following:

- *long life*;
- *stable* functioning;
- performance of certain social *functions* (satisfaction of demand for illegal services or goods due to their deficit, job creation, redistribution of means and etc.);
- the use of work code or certain *norms*, professional *language* (slang), creation of *roles*.

The process of institutionalization of organized crime started in Russia (the Soviet Union) from the end of the 1950s or the beginning of the 1960s and finished by the end of the 1970s or the beginning of the 1980s. The most important mechanism of organized crime is its readiness for integration. Russian organized

criminal groups widely integrated into international organized crime by the beginning of the 1990s. The Russian criminal ‘plenipotentiaries’ for European countries were preoccupied with the coordination of business with foreign ‘colleagues’ and organization of criminal involvement of visiting ‘fellow-countrymen’ into the life of the ‘Russian communities’ abroad. Economic expediency and criminal drive predetermined the dynamic character of globalization of organized crime. International cooperation of criminal structures has been known for a long time. Illegal export-import traffic of narcotics, weapons, alcohol, prostitutes and international money-laundering - all are well known (Ovchinsky, Eminov, Yablokov, 1996: 18-51; Repetskaya, 2001; Fijnaut, Paoli, 2004; Gilinskiy, 2003). We want to demonstrate the directions of internationalization of organized crime using the interview taken by Y.Kostyukovsky, a researcher of the Centre for Deviantology at the Institute of Sociology of Russia’s Academy of Sciences from the members of St. Petersburg’s criminal groups about their activities (Gilinskiy, Kostyukovsky, 2006).

*Illegal export of non-ferrous metal from Russia to the countries of Western Europe*

“*Interviewer (I)*: What sort of criminal business is the most popular?

*Respondent (R), the member of a criminal group*: In 1994 half all the metal from Russia was exported illegally. It was a good business! People earned so much for two or three months that it is enough (to live on) even now. True, they had to work 25 hours per day...But the game was worth (the long hours). The difference of prices here and in Estonia, for example, was crazy.”

*Illegal export and market of ‘living goods’, i.e. illegal migration, export of prostitutes*

“*I.*: And what about prostitution?

*R.*: Prostitution in St. Petersburg is a well-established industry, it was not invented only yesterday. It can be an invitation to work abroad in the strip-tease show or in the service sphere in general. But when they are exported, for example, to Turkey they are forcibly made to become prostitutes. Some are lucky if they manage to run away. But the end is usually bad...”

*Stealing and selling stolen cars (international car business)*

“*I.*: Do you have contacts with foreigners?

*R.*: Of course. We have a car business. A kind of exchange.

*I.*: What’s that?

*R.*: Naturally. Here, in Peeterr<sup>2</sup> the car is stolen and brought to Germany and (in return) from Holland to Russia. Well, there are quite fine networks – in Germany, Poland, France, Hungary, Holland and Russia. So, with organized crime everything is OK – there *are* international contacts.”

---

<sup>2</sup> i.e. St.Petersburg; ‘Peter’ sounds ‘Peeterr’ in Russian. It is the name of the Russian tsar Peter the Great, the founder of St.Petersburg (ed.).

### *Illegal export of radioactive material*

The news of the illegal export of radioactive material from Russia leaked into the mass media causing discussion in Russia and abroad (Ovchinsky, Eminov, Yablokov, 1996: 44-45).

### *Smuggling the antiques or objects of art*

The number of such objects confiscated during the attempts to get them out of the country rose from 3,500 in 1992 to 10,000 in 1999. But customs officers believe that only 5-10% of the antiques and objects of art are found at the customs and confiscated (Gurov, 2000: 41).

### *Illegal export of weapons*

One of the most profitable criminal businesses (the second most profitable after the drug trade) is the sales of weapons abroad. But the data about the trade of weapons are scarce because it is connected with the criminal activities of high-ranking military officials - federal and regional. "One can buy anything if one has enough money" (Gurov, 2000: 34-36; Dolgova, 1999: 86-91).

### *The international networks of illegal production*

The international networks of illegal production and trade flourish, especially if it involves the trade and production of alcohol. Illegal alcohol arrives in Russia from Poland, the Netherlands and other countries.

### *Forged foreign currency*

Up to 95% of forged foreign currency comes to Russia from abroad (Gurov, 2000: 28).

### *Narcobusiness*

International business in narcotics brings the greatest profit world-wide. Experts from the United Nations (UN) estimate international turnover of drugs at 400 billion dollars; that constitutes about 8% of all world trade. Heroin arrives in Russia from Afghanistan, Pakistan and North Korea; derivatives of cannabis from Middle Asia and Ukraine; cocaine from Latin America; 'wheels' (drugs) from Western Europe; ephedrine and its derivatives ('ice') from China. In turn Russia re-exports heroin and cannabis to Western Europe. (Gurvich, Rusakova, 2006: 162-203; Rogatykh, Strelchenko, Toporov, 2003; Romanova, 2000: 43-79).

### *Globalization of criminalized 'legal economy'*

It should be added to the above-mentioned that the phenomenon of the globalization of the criminalized 'legal' economy takes place now (e.g. Trans World Group - TWG, controlling the aluminum and the alumina extracting industry of Siberia) (Repetskaya, 2001). The profits of transnational organized crime are invested into the legal economy via controlled banks for the purpose of money-laundering. According to the experts from the American National Strategy

Information Center, the overall profit of international organized crime reaches a trillion dollars, which approaches the annual budget of the USA (Repetskaya, 2001).

### *Globalization of criminality connected with migration*

Globalization of criminality takes place not only in the form of organized crime. Increased migration flows bring both positive results (internationalization of science, art, culture) and negative ones. Migrants, apart from their different ethnic traditions, have more every day problems while adapting to the new reality of the host country than the natives: the language barrier, professional difficulties connected with their qualifications meeting the standards of a new country, housing problems, different cultural background and other features of the 'social disorder' - all of which serves as the source of their future deviant behaviour. Many recipient countries have begun to come across the problem of newcomers' crimes. For example, in 2004 in Germany the non-native citizens (non-Germans) made up 22.9% of suspects (maximum - 33.6% in 1993), which is the evidence of the relatively high criminal activity of migrants. The proportion of migrants committing crimes is the following: migrants from Turkey (21.5%), from Serbia and Montenegro 8.2% (in 1999 - 16.0%), from Poland (6.7%), Italy (5.0%) and Russia (3.2%) (Polizeiliche Kriminalstatistik Bundesrepublik Deutschland, 2005: 109, 116).

### *2.2. Alcoholization*

Traditionally it was considered that the cause of alcoholism should be found within the borders of the country. The accelerated rate of economic and cultural globalization makes such a concept obsolete.

In spite of the general trend of the increase of alcohol addiction, its world dynamics resembles a wavy line. Since the middle of the 19<sup>th</sup> century one can find three upsurges in the growth of alcohol consumption, with the development cycle lasting for 50-70 years. The first rise happened in the middle of the 19<sup>th</sup> century, the second rise started at the end of the 19<sup>th</sup> century and lasted till the 1920s-1930s. The latest rise took place after the war and finished at the end of the 1970s. From the beginning of the 1980s the consumption, especially of wine, and to a lesser degree - beer, has reduced a little (Gurvich, Goryachova, 2006: 113-161).

Countries can be classified into three categories according to their pattern of alcohol consumption. For the countries of Southern Europe daily consumption of wine is typical for all members of society. The display of alcoholic intoxication is not approved. Eastern European countries, countries of Northern Europe and also the USA are called 'spirits drinking' countries, because the populations of these countries prefer strong alcoholic drinks (vodka, whisky, etc). Alcohol consumption is not regular, but intensive, and periods of abstinence alternate with periods of abundant drinking up to the degree of heavy intoxication. For central European countries and Canada the consumption of beer is more typical.

The most significant changes in alcohol consumption over the last fifty years have been observed in the countries of Northern and Southern Europe. The 'peak'

in wine drinking in southern countries was reached in the 1970s (17 liters of absolute alcohol per person<sup>3</sup>) and in the 1990s it was reduced to 12. In France the fall in consumption started a bit earlier - from the middle of the 1950s. The level of consumption in northern countries rose in the 1960s-1970s, mostly due to a bigger consumption of beer.

In Russia the rise of alcohol consumption to 14 liters took place in the middle of the 1990s and Russia went ahead of other countries in alcohol consumption per person surpassing even the former leader - France (Nemtsov, 2001; Nemtsov, 2003).

The consumption of alcohol in 15 European countries in the years 1950-2000 was characterized by the process of homogenization, i.e. exhibiting similar consumption (Leifman, 2001; Leifman, Osterberg, Romstedt, 2002; Norstrom, 2001). Homogenization develops due to:

(1) the increase of globalization and integration in economies, (2) the harmonization of political reforms, (3) cultural diffusion as a result of the development of modern communication and transport technologies.

High homogeneity of alcohol consumption characterizes the countries of Eastern Europe including the former European republics of the Soviet Union: Russia, Ukraine, Belarus and the Baltic republics. They have a high level of alcohol consumption and negative consequences. In the Soviet period there were state monopolies controlling alcohol production. In the 1990s these states went, to some extent, through the spontaneous development of spirits markets. Nowadays the situation improves: the programme of controlling the production of alcoholic drinks has been started in the Baltic republics in connection with their joining the European Union.

The international alcohol industry entered the vodka market in the newly independent states (former republics of the Soviet Union) at the beginning of the 1990s. It was mainly the producers of alcohol from the countries of the European Union. They actually ousted home-brewing in Russia, for example, supplying Russia with 500 million liters of spirits per year. Eastern Europe turned out to be divided by international alcohol holdings (Moscalewicz, Simpura, 2000: 502-22). At present, in search of new markets, transnational alcohol producing companies, specializing mainly in beer, have instituted a more expansive policy towards the developing countries, taking advantage of the weakness of the political system and the liberalization of the economy.

Globalization of the ideology of a free market leads to the cessation of many interstate agreements that contained and structured alcohol consumption. There is a tendency to compare alcohol with the consumption of ordinary goods, the demand for which is limited only by the paying capacity of the population. The attempt to block or limit the consumption of alcohol is considered by the majority of the population as an infringement on the right for freedom of choice.

---

<sup>3</sup> Absolute alcohol generally refers to purified ethanol, containing no more than one percent of water.

### 2.3. Narcotism

The term '*narcotism*' means a social phenomenon that refers to the relatively spread and statistically stable consumption of narcotic or other toxic and psychotropic remedies, inflicting negative medical (drug addiction) and social consequences (Gilinskiy, 2007: 286). Illegal turnover of narcotics was documented long ago as a world network with well-established channels of distribution of the main narcotics. Thus, the principal suppliers of cocaine in the world market are the countries of the 'Andean group' (Peru, Bolivia and Columbia). Opium poppies are grown by the countries of the 'Golden Triangle' (Southeast Asia)<sup>4</sup> and the 'Golden Crescent' (Southwest Asia)<sup>5</sup>. Approximately 90% of the world production of opium comes from Burma, Afghanistan, Iran and Lebanon. The production of hemp is almost equally spread among the countries of Africa, Europe, America and Asia. Traffic is mainly inside the region. The sources of cannabis are, first of all, Albania, Columbia, the Republic of South Africa, the Russian Federation, Jamaica and the Netherlands. Since 1998 Thailand, Ghana and Paraguay have joined them. In the overall volume of transported narcotics, Mexico, Canada and the USA play an important role. The main production of cannabis resin comes from Morocco, Afghanistan and Pakistan. Other important sources of supply of cannabis resin are Central Asia and the Russian Federation.

A number of circumstances allow us to speak of narcotism as a global phenomenon (Gurvich, Rusakova, 2006: 162-203).

*Firstly*, due to the macro economic character of the business many countries are involved in the drug trade either as producers and suppliers or as consumers.

*Secondly*, there are criminological factors such as: the leading role of organized crime in world drug trafficking which has the characteristics of transnational activities.

*Thirdly*, there are cultural factors. Recently drug abuse has become a mass culture, the norms and values disseminated by the mass media in many countries - the consumers of drugs. The subculture of groups, for which the use of drugs is a routine practice, has penetrated into the wider strata of 'normal' social communities. The demand for drugs in the developed countries, which are the buyers, reflect some tendencies to develop a modern mass culture where drugs occupy a prominent place. In the post-war history of Western countries there were several peaks of aggravation of drug abuse; the 1960s witnessed the cult of 'speed', the 1970s had 'hippies' with their drug experiments and the 1980s were characterized by heroin experiments of 'new ages'. During all these periods drugs were the characteristic of some youth subculture movements.

*Fourthly*, there are certain legal factors reflected in the two main concepts of social control over narcotism - 'the war on drugs' and 'harm reduction'. It results in differing anti-drug strategies and tactics in different countries. On the international level negotiations are constantly held about the adoption of a universal approach and a universal legal system in the sphere of drug control.

---

<sup>4</sup> Myanmar (Burma), Thailand, Laos (ed.).

<sup>5</sup> Afghanistan, Iran, Pakistan (ed.).

*Fifthly*, there are certain political factors engaged in the struggle for influence: international organizations and unions are created to exercise control over narcotics. These organizations produce an essential influence upon the national governments. However, using corrupted high officials at the level of executive and legislative powers organized crime successfully lobbies for certain political decisions and directly penetrates into the power bodies by promoting their own members to higher official positions.

## 2.4. Terrorism

Terrorism is one of the most serious problems, potentially or factually, concerning every inhabitant of our planet (Lukin, 2006).

The definition of terrorism contains two important features:

- the use of violence or the threat to use *violence*;
- political (religious and ideological) *motivation* to use violence.

But there is also one essential feature of terrorism; it is rather a social phenomenon than an individual act of political assassination. It is the use of violence towards an undefined circle of direct objects of terrorist attack for the sake of achieving the future aim, i.e. to satisfy political (economic, social and religious) demands.

Laqueur draws attention to the subjectivism in the definition of terrorism. For some it is terrorism, for others it is a struggle for freedom. (Laqueur, 1987: 302). This uncertainty in the assessment of the terrorist action is analyzed by Ganor, a researcher of the International Policing Institute for Counter-Terrorism (Ganor, 2002). *How to distinguish terrorism from partisan war or revolutionary violence, or the struggle for national freedom?* A lot depends on the political position of the person who assesses a violent action. Ganor analyzes the differences between these types of violence. He starts by categorizing wars into two groups: declared war between states and *undeclared* war between organizations and states. The latter includes *terrorism* and *guerilla* war. The activities of anarchists, the fighters for freedom, revolutionaries and ad hoc<sup>6</sup> actions are included into this category.

The most important difference between terrorism and guerilla war is that guerrilla war is waged against a regular army, whilst terrorism is directed against noncombatants and based on political motives and violence.

Terror and terrorism are defined as different political concepts:

- terror is exercised by the ruling power structures ('violence over the weaker', which pertains, in particular, to totalitarian regimes);
- terrorism is the violence of 'the weaker over the more powerful', it is 'the weapon of the weak' who are the victims of the 'state terror' (Chalikova, 1989: 310; Ferro, 1989: 314).

Terrorist organizations and individual terrorists represent, consciously or unconsciously, the interests of the 'excluded' mass in the contemporary world. Polarization into the rich and powerful minority of 'the included' and into the very poor majority or the 'excluded' (with the simultaneous process of the relative erosion of the 'middle class', a guarantor of stability in the social system) leads to

---

<sup>6</sup> for each particular case

the dangerous, for all humankind, division into 'included' and 'excluded' countries and the 'included' and the 'excluded' groups in each country under globalization. This process and its consequences are not understood properly by the governing elites. An example of it is the aggression of the USA against Iraq (no matter how 'bad' Saddam Hussein might be) or the actions on the part of Russia against Chechnya (no matter how 'bad' the Chechen paramilitary might be) because *terror* causes *terrorism*.

Modern terrorism often has an international application, but it is not permissible to ignore the rights and interests of the citizens of one's own state under the slogan of the fight against 'international terrorism'. Human rights are primary and inalienable (articles 1, 2, 3, The Universal Declaration of Human rights, 1948). The violation of human rights gives rise to a reaction of violence, in particular, terrorism. The demand to limit the rights of man for the sake of 'the fight against terrorism' is absurd:

- *firstly*, because an ideological basis for the justification of terrorism will be created (as a response to the terror of the power structures);
- *secondly*, the risk of human rights being violated increases.

The more protected human rights are, the lower is the possibility of criminal risks. The anti-terrorist war is not efficient (though it is a forced necessity). The world community on the whole and each nation-state in particular must undertake first of all political measures (economic, social) to avert the conditions under which terrorism thrives and to solve peacefully social, ethnic and confessional conflicts in the country.

Of course, the declaration of the principle of a non-violent and preventive approach in the case of an increasing conflict is easier to pronounce than to realize. But there is no 'simple settlement' of complex social problems. To put it more exactly, the so-called 'simple decisions' ('to liquidate', 'to suppress', 'to eliminate'), either are not possible to realize, or they simply aggravate the situation. One can take measures (and it is necessary) against an individual terrorist, but it is not possible to get rid of *the cause and the source* of terrorism by punitive measures while solving social conflicts.

A full coverage of all terrorist acts is hardly possible to make, however, the approximate data for 1968-2003 have been published. (Schmid, 2005). According to these, the 'peak' of international terrorism occurred at the end of the 1980s with some increase in 1991 and 1993. From 1997 to 2003 the largest portion of terrorist acts happened in Western Europe (2,035), then in the countries of the Persian Gulf (1,542), South Asia (1,183), Latin America (1,180), Eastern Europe (598), Southeast Asia and Oceania (276), Africa (146), Eastern and Central Asia (56) and North America (37).

## 2.5. Human Trafficking

Human Trafficking is an international problem. The concept 'human trafficking', in conformity with the 'United Nations Convention against Transnational Organized Crime : Protocol to Prevent, Suppress and Punish Trafficking in Persons, Especially Women and Children' (15 Nov. 2000) (Annex

II)<sup>7</sup>, includes three elements: (1) ‘recruitment, transportation, transfer, harbouring or receipt of persons’, (2) ‘the use of force or other forms of coercion, of abduction, of fraud, of deception, of abuse of power or of a position of vulnerability’, (3) the purpose of exploitation (‘the exploitation of prostitution of others or other forms of sexual exploitation, forced labour or services, slavery or practices similar to slavery, servitude or the removal of organs’).

Thus, Protocol discerns the following types of trade in human beings: trade in women, trade in children (for prostitution, pornography and illegal adoption), trade in human beings for slavery and trade in human organs. A particular type is smuggling of migrants.

The trade in human beings is closely connected with organized crime, being one of its activities. This trade has a transnational basis. The data about this type of criminal business are not easily available. The official statistics are very meagre and do not correspond to the real spread of the disaster. Only in a few countries official statistics reflect the real situation in the trade in human beings: Germany (Lagebild Menschenhandel, 1999, 2000, 2001), the Netherlands (Trafficking in Human Beings, 2002), Sweden (Trafficking in Women, 1998-2002). Some comparative analysis of data was published in the article by C.Kangaspunta (Kangaspunta, 2004).

In the reports, Russia, Ukraine and Nigeria (in decreasing order, Russia goes first) occupy the first places for the countries of origin, transit or destination (Kangaspunta, 2004: 90). According to the ‘export’ in human beings, Asia has the greatest number, the countries of the Commonwealth of Independent States<sup>8</sup> follow Asia, then comes Africa and in the last place (sixth) are the developed countries. As far as the countries of destination are concerned, the first place belongs to the developed countries. The largest number of victims of human trafficking (‘the sold’) is recorded to arrive from Ukraine, then comes Russia, Nigeria, Albania, Rumania and Moldova (in decreasing order) (Kangaspunta, 2004: 94).

Among the victims of sexual exploitation the majority are women, in the second place children and then a small number of men. The victims of forced labour, first of all, are children, in the second place women and in the third place are men. Much less information has been collected about the criminals engaged in the trade because this kind of business is more concealed than others. However Russia is supposed to take the first place here and the second and third are Nigeria and Ukraine respectively. Thus, according to the data in certain spheres, Russia together with Ukraine and Nigeria compose a ‘troika’<sup>9</sup> of countries where the maximum risk of enslavement exists.

The described situation is not surprising because the two main trade items are ‘the excluded’, who are poor, due to a low income, or are unemployed and homeless, and orphans; in other words, the least protected strata of society. F.Borodkin claims that more than 50% of Russia’s population is excluded from

---

<sup>7</sup> <http://www.un.org/Depts/dhl/resguide/resins.htm> (ed.)

<sup>8</sup> See Editor’s Notes.

<sup>9</sup> See Editor’s Notes.

active economic, social and political life (Borodkin, 2000). But besides the ‘have-nots’, who are below the level of poverty, there are a lot of poor people who are factually ‘the excluded’ and vulnerable to the trade too. The practice of different types of human trafficking “questions the possibility of democracy in the countries where half the population can be considered as a potential commodity for sales, where people can be bought, sold and enslaved” (Repetskaya, 2001: 81).

Let us consider briefly some of the types of human trafficking.

### *Trade in women*

‘White female slaves’ - is the prevailing ‘commodity’ in the market of human beings. The volume of world trade in women, with the aim of sexual exploitation, is assessed from 7 to 12 billion dollars per year. Annually 2 million women and children are forced to be engaged in sex industry (Repetskaya, 2001: 77).

There were four ‘waves’ of the import of ‘white female slaves’: the first wave came from Thailand and the Philippines, the second from the Dominican Republic and Columbia and the third one from Ghana and Nigeria. The fourth wave brought women from the former Soviet Union, mainly from Russia, Ukraine, Belarus, and also Latvia.

There is a demand for Slavonic women in the world sex industry. They are considered to be a ‘symbol of prestige’, for example, for the business men of Japan, China and Thailand (Stoecker, 2000). Many women from Russia and countries of the CIS work as prostitutes in the countries of Western Europe and the USA. More than 10,000 women were transported by transnational criminal organizations from Russia and Ukraine to Israel for prostitution (Repetskaya, 2001: 79).

Because the conditions of labour in the sphere of sexual service are slavish, some women, trying to save their lives, come to an agreement with their owners and go back to their native country to recruit new victims. It has the name ‘the second wave’. The labour contractor receives from 200 to 5,000 dollars for each recruited woman. The transportation of recruited women from ‘exporting countries’ to the ‘importing country’ is organized illegally or, sometimes legally (under the pretext of tourism, legal employment or visiting relatives).

Russia’s prostitutes are exported to the countries of Western Europe, the USA, Canada, the countries of Latin America and also China. Their life is described in a range of publications, from academic journals to illustrated magazines.

### *Trade in children*

This is one of the most awful categories of human trafficking. Children are mainly used for sex purposes and pornography, but they can also be illegally adopted. The social basis for the trade in children in Russia is more than two million homeless children and orphans, then the children of alcohol abusers and also some children who want to obtain money for a ‘sweet life’.

The researchers of the Centre for Deviantology at the Institute of Sociology of Russia’s Academy of Sciences studied the sexual exploitation of children in the North-Western region of Russia (St. Petersburg, Vyborg, Petrozavodsk and others)

(Gurvich et al., 2002). The majority of clients of child prostitution are 'new Russians', the city's 'criminal authorities' and foreign visitors, mostly from Finland and also from Sweden, Germany and Great Britain. The prices for services are low: parents who are alcohol abusers, can 'sell' children for a bottle of vodka. Child pornography is a covert and rather profitable business. Street children willingly respond to the offer of a recruiting agent to 'earn good money'. For the production of homosexual pornographic material the cadets of military colleges are recruited.

### *Forced labour or slavery*

Amazingly, but forced labour and slavery turn out to be a wide-spread phenomenon in the 20<sup>th</sup> - 21<sup>st</sup> centuries. Victims of this trade in human beings are men, women and children.

In modern Russia, slave labour has been used in the Caucasus region, but information about slaves in the central regions of the European part of the country has also leaked into the mass media. One such 'slave owner' in the Leningrad region is described in one of A. Konstantinov's stories (Konstantinov, Dikselius, 1997: 251-258).

At present, illegal migrants from the countries of the CIS, especially from Tajikistan, Uzbekistan, Kazakstan, Moldova, and also from China, Vietnam, Afghanistan, North Korea and partly from African and Latin American countries are used for slave labour in Russia (Tyurykanova, 2005).

The practice of selling into slavery in the present Russian army has been discovered. The cases when officers sold soldiers to various businessmen have become known. For example, in September 2006, in the town of Chita (Eastern Siberia) an officer sold a soldier of his military regiment to a local entrepreneur for 35,000 roubles (about \$1,300). In the end, the soldier was admitted into a military hospital without a leg and eye due to an accident. The working conditions and life of slaves of the 21<sup>st</sup> century are awful. Some commit suicide.

### *Trade in inner human organs*

Trade in inner human organs is one of the least recorded but fastest developing branches of criminal activity. There is an international 'black' market of 'items' for transplantation: heart, kidneys and other human organs. National and international prevention mechanisms for reduction of this kind of trade are extremely difficult to develop and implement.

*Firstly*, the trade in human organs is the most covert business of organized crime. Although there has been a considerable increase in the trade in human beings in Russia, no case was registered of a person forced to the removal of organs or tissues in 2001-2005.

In 2001-2005, from 0 to 60 cases were registered in the trade in human beings (article 127-1, Penal Code of the Russian Federation); from 0 to 20 cases of the use of slave labour (article 127-2, Penal Code of the Russian Federation); 16, 10, 21, 0

crimes<sup>10</sup> in the trade in children under age (article 152 Penal Code of the Russian Federation) and 3, 0, 1, 7 cases of illegal adoption (article 154 Penal Code) (Dolgova, 2006: 109, 112).

*Secondly*, all forms of trade in human beings are the outcome of economic, political and social processes under globalization. The socio-economic inequality of different countries and disparities between social groups is the main factor in human trafficking and also other forms of deviance.

*Thirdly*, the trade in human beings under globalization is a relatively new issue. The usual old methods of revealing, registering, preventing and fighting social 'evils' do not work in this case. That is why national and interstate cross cultural research in human trafficking and developing measures and means to counteract it are especially important.

### *Corruption*

Corruption is considered to be an 'internal affair' of every state. In Russia it has become 'problem No 1'. Corruption exists in all branches and levels of power in Russia. Hardly any social problem can be solved without a bribe: everything is decided by 'who' and 'to whom' and 'how much' to pay (Gilinskiy, 2005; Gilinskiy, 2006a, 2006b).

The processes of globalization have affected corruption in two ways: *firstly*, the globalization of business and finances has led to the internationalization of corrupt relations between business and state officials of different states; *secondly*, corruption money has become an important resource and reason for money-laundering.

### *Suicide*

Globalization affects even a seemingly purely individual type of deviance, such as committing suicide. The influence of globalization upon suicidal behaviour can be revealed, at least, in the following:

- institutionalization of the 'excluded' and the hopelessness that they feel lead to the rising level of suicides among them. Suffice to say, that the indicator of suicides in Russia, beginning from 'post-perestroika' has been rising every 5 years: for the period from 1985 to 1989 - 37 thousand people, from 1990 to 1994 - 48.5 thousand people, and during 1995-1999 it was 56.3 thousand people (Bogoyavlensky, 2002);
- international terrorism is spreading quickly and 'globally' and uses the method of 'suicide bombers' (Israel, the USA, Russia and even well-being, quiet Finland).

Our investigation and accumulated facts allow us to claim that there is the interaction between the process of globalization and deviantolization in the world nowadays. However, a more thorough analysis of this process is needed. For example, globalization of positive deviance (creative activities) has not been paid enough attention to. Though researchers admit that the 'brain drain' (as positive

---

<sup>10</sup> correspondingly to the years of 2001-2002; 2002-2003; 2003-2005; 2004-2005 (ed.).

deviance) to the highly developed countries from the countries with fewer possibilities of providing good work conditions (for creative activities) and living standard for scientists, engineers, etc. is influenced by global processes.

## **Conclusion**

There are regular manifestations of deviant phenomena in the globalizing world. The process of globalization influences the dynamics of deviance. Globalization deepens the socio-economic inequality of both societies and people within these societies; it increases the scale of the 'excluded', who are the social base of deviant behavior, and the gap between 'the included' and 'the excluded'.

Globalization of economics, politics, and culture is followed by the globalization of various types of deviance and social control. The process of globalization has the greatest effect upon such types of deviance as organized crime, drug addiction, terrorism and human trafficking. The strategy of internationalization of social control has become the response to the globalization of deviant phenomena.

# Russia's Human Resources in Science in the Context of Globalization

Nelly DIDENKO,  
Andrei PETROVSKY

## Introduction

The process of globalization has not left the scientific community unaffected. For the last 10 years there have been great changes in the human resources of Russian science.

In the process of globalization, observable structural changes (economic, political, social, communicative, etc) have lead to systemic changes. We understand 'system' to be a recurring pattern of interactions between an agent and structure inside the structure, and between structures.

Globalization in the world coincided with structural changes taking place in Russia during the period of Perestroika (1985-1991) under M. Gorbachev (1985-1991), and a consequent process of disintegration of the Soviet Union (1991) under B.Eltsin (1991-1999), which was followed by certain systemic changes in the country. So, the former system of Russia has been *doubly impacted* by both internal factors of Perestroika and external factors of globalization.

Systemic relations in Russia began to develop in some fields in line with global tendencies. The agent (scientific human capital) in Russia found itself to be under the influence of both local structural changes and new global ones. So, the agent had to choose possible strategies under new conditions.

The result is the following: some left science and went into business, mainly men, which led to the reduction in numbers, the ageing of scientific personnel, and an increase of the proportion of women engaged in science; others used their chance to join the process of global labour migration and went to Western countries to participate in international projects, grants and so on, and in this way they formed a new class of well-off scientists whose expertise is in demand both in Russia and abroad.

New scientific structures have been created due to the latter strategy which show the tendency to adopt western standardization and qualitative change in the research field.

In this paper changes in the scientific potential and intellectual capital of the Russian scientific community are analyzed in the context of globalization, in particular, the dynamics of the intellectual human capital of Russia in science for the last ten years.

The analysis reveals an interdependence between the development of Russia's scientific community and its human capital and the processes of globalization

which bring about certain changes in the formation of human capital in Russia: the numerical reduction of researchers engaged in science and services related to science, the ageing of personnel in science and its feminization, the work abroad and the formation of new scientific standards.<sup>1</sup>

Special attention is devoted to the process of the splitting of the scientific community in Russia and the formation of 'new Russian scientists'. We examine the main mechanisms behind the formation of this class such as: participation in international scientific conferences, programmes of researchers' mobility, and the development of international cooperation by the research centres of the Academy of Sciences of the Russian Federation.

We also analyze the process of adaptation in Russia to the international indicators used for qualitative and quantitative assessment of intellectual capital of research organizations. Special attention is paid to such indicators as the participation of Russia's researchers in Russian and foreign grants, in particular, international programmes of the Russian Foundation for Basic Research (RFBR<sup>2</sup>) and the International Association INTAS<sup>3</sup>.

## **1. The dynamics of human capital in science in Russia for the last ten years**

### *1.1 The decrease in the number of researchers in science and scientific services*

Since 1992, a sharp decrease in the number of researchers in science and scientific services has been observed. However, as A.G. Allakhverdyan remarks (Allakhverdyan, 2003), the decrease in researchers first started in 1987 and by 1992 a national scientific cadre reduced by 656 thousand people. Allakhverdyan highlights three periods in the reduction process: (1) 'cadre collapse' (1990-1994); (2) 'moderate reduction' (1995-1998); (3) 'stabilization and minigrowth' (1999-2001).

In Table 1 there are the data of the decrease in scientific personnel engaged in research and development projects in the federal okrugs<sup>4</sup> of Russia for the last decade (Ulyanov, 2007<sup>5</sup>). A sharp decrease in scientific personnel was observed in the 1990s, and at present the process has slowed down. In 2003 there was only 44.2% of the previous national scientific personnel that stayed in science in

---

<sup>1</sup> The grant of the Russian Foundation for Basic Research № 05-06-80411-a was awarded to support our research in this field.

<sup>2</sup> RFBR's official website: <http://www.rfbr.ru/> (ed.)

<sup>3</sup> INTAS, the International Association for the promotion of co-operation with scientists from the New Independent States of the former Soviet Union (see more in Editor's Notes).

<sup>4</sup> The Russian Federation comprises 83 federal subjects which have equal representation in the Federation Council. Federal subjects are grouped into seven federal okrugs (districts of administration), each administered by an envoy appointed by the President of Russia to see if there is the compliance of the federal subjects with the federal laws (ed.).

<sup>5</sup> I.Ulyanov is the editor of *Regions of Russia. Socio-economic Indices*, 2007, Moscow, Rosstat (official statistics).

comparison with 1990 (Mindeli, 2005). The main tendency in the field of research and development was the following: with the decrease of expenditure by 74% on research and development in 1989-1998, the number of personnel working in R&D fell by 61%. (Chepurenko, 2005)

	1995	2000	2001	2002	2003	2004	2005	2006
Russian Federation	1,061,044	887,729	885,568	870,878	858,470	839,338	813,207	807,066
Federal okrugs:								
Central	544,759	455,985	453,329	440,577	431,718	420,375	408,330	411,958
Northwestern	162,271	116,812	115,017	112,478	110,738	107,928	104,752	103,635
St.Petersburg separately (Northwestern okrug)	141,399	98371	96734	94352	92715	90011	87861	85290
Southern	52,023	37,422	37,617	36,683	35,750	35,502	34,530	35,210
Volga	157,129	150,046	148,862	149,336	147,680	146,150	140,592	134,188
Urals	57,034	50,803	53,116	53,936	54,259	52,216	49,670	49,377
Siberian	73,886	62,477	63,271	63,052	63,376	62,494	60,986	58,647
Far Eastern	13,942	14,184	14,356	14,816	14,949	14,673	14,347	14,051

Table 1. Scientific personnel engaged in research and development projects in the federal okrugs of the Russian Federation.

On the left there are the names of the federal okrugs of the Russian Federation, with St.Petersburg<sup>6</sup> taken separately (it belongs to Northwestern okrug); in the boxes there is the number of people engaged in research in the okrug. For example, in 1995 altogether there were 1,061,044 people engaged in research and development projects and in the Ural federal okrug there were 57,034 people.

In some federal okrugs (Far Eastern, Ural, Siberian) there is a slight rise in the number of personnel in the field of research and development now. As stated in the reports of the Academy of Sciences of the Russian Federation for the last five years, in many scientific centres a stable cadre potential was provided (Report of RAS, 2005<sup>7</sup>). How do global processes influence the size of scientific personnel in Russia?

With the collapse of the Soviet Union and the introduction of a market economy, the country has had a constant 'brain drain' to the highly developed countries, mostly to Europe, the USA and Japan. Nevertheless, numerical data of the official statistics show that this process was not the main factor in the reduction in research and development personnel.

<sup>6</sup> Saint Petersburg is the second largest city in Russia and the fourth largest megapolis in Europe after London, Moscow and Paris; it is a federal subject of Russia. The population is 4,596,000; the area of the city is 606 km<sup>2</sup>, if counted with its environs the total area is 1,439 km<sup>2</sup> (July, 2008, <http://eng.gov.spb.ru/>) (ed.)

<sup>7</sup> The report of the Academy of Sciences of the Russian Federation.

In Table 2 there are the figures (in thousands) showing the number of emigrants from Russia who worked before in Russia in the area of ‘Science and Scientific Services’ (Gokhberg, 2003). According to L.M.Gokhberg, for the period 1990-2001 about 20 thousand people emigrated from Russia; the highest rate of emigration was observed in 1990-1996, and the turning point can be considered the period of 1997-1998. The majority of the national cadre in science and scientific services left their former jobs for business and other activities.

1980	1990	1993	1994	1995	1996	1998	1999	2001
0,14	2,1	2,3	2,1	2,2	1,9	1,1	1,4	0,9

Table 2. The number of Russian emigrants, who worked in the field of ‘Science and Scientific Services’ before leaving Russia.

The figures in boxes show the number of people in thousands; for example in 2001 Russia lost 900 scientists and researchers.

The Academy of Sciences of the Russian Federation<sup>8</sup> has suffered to the least degree if compared with all other scientific organizations. On 1 January 2006 the overall size of the scientific personnel and scientific services personnel of the Academy was 112,633 people, including in this number 55,533 scientific researchers (on 1 January 2005 there were 113,629 people including 55,903 scientific researchers in the Academy). Among the scientific researchers, there were 10,008 Doctors of Sciences (the highest scientific degree in Russia), 26,226 Candidates of Sciences (this scientific degree is lower than the Doctor of Sciences degree and is roughly equal to a western PhD<sup>9</sup>), and 18,494 scientific researchers.

The average age of Doctors of Sciences in 2006 (only the Academy is considered here) was 61.7 years old (in 2004 it was 60.8), Candidates of Sciences - 50.5 years old (in 2004 it was 50.0), and the average age for scientific researchers without a scientific degree was 41.6 years old (in 2004 it was 40.2).

The number of members of the Academy of Sciences of the Russian Federation was 1,164 people including 467 Academicians (a full member of the National Academy of Sciences) and 697 Corresponding Members<sup>10</sup> of the Academy (a lower-rank title than an Academician) (in 2004 the corresponding figures were the followings: 1,211; 493; 718). The average age of Academicians was 72.9 years old in 2006 (in 2004 – 72.2), the average age of Corresponding Members of the Academy was 65.5 years in 2006 (in 2004 – 65.7).

<sup>8</sup> The Russian Academy of Sciences was founded in 1724; the website: <http://www.ras.ru/> (ed.).

<sup>9</sup> There are two scientific degrees in Russia: Candidate of Sciences and Doctor of Sciences. A standard western PhD is closer to a Russian Candidate of Sciences. If you have a Candidate’s degree, a lot of books, huge academic experience, many published research results, you have a chance to get the certificate that your Candidate’s degree is equal to Doctor’s degree. But in both cases Russian two quite different scientific degrees are usually translated into English as a PhD degree (ed.).

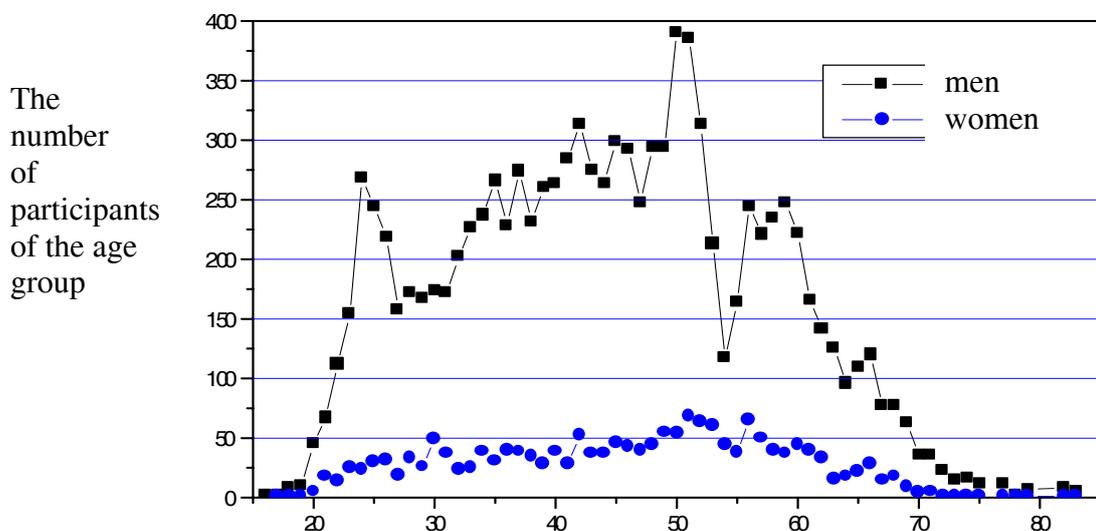
<sup>10</sup> Sometimes it is translated as an Associate Member (ed.).

## 1.2. The ageing of the scientific cadre

Simultaneously with the exit of scientists from the field of science, the ageing of the scientific cadre took place. The ageing can be illustrated with the data concerning the distribution of the participants of research projects in the field of Physics and Astronomy supported by the Russian Foundation for Basic Research (Merkulova, G. et al, 2002).

On Graph 3 there are distributions of the participants of the projects of the Russian Foundation for Basic Research in 1997 according to the age and the specialization 'Physics and Astronomy' in the whole Russian Federation. It is interesting to note that men have a dramatic fall in the distribution curve at the age of 25 and 52, but women have a more equally age distributed curve and there are not such catastrophic falls like on the men's curve.

The falls and decreases in the number of male scientists from 25 to 50 years old is explained by the fact that some of the men actively engaged in science went to business or migrated abroad, but with female physicists the situation was different. Women represent a reserve in science even in such a 'male' field as physics.



Graph 3. The distribution of participants of the projects of the Russian Foundation for Basic Research according to the age group and the specialization 'Physics and Astronomy' in 1997.

On the x-axis there are the figures showing the age, on the y-axis there is the number of participants. The upper line on the graph shows the distribution of male participants (nationals), and the lower line shows the distribution of women (nationals) participating in the projects of the Russian Foundation for Basic Research in 1997.

At the age of 50 the curve showing male participation goes down sharply from 400 men to about 120 men participating in the research projects.

Table 4 shows the distribution of researchers according to the age groups in St.Petersburg (Kazantsev, 2004). It is seen that the decrease in the number of researchers by 2002 took place most of all in the age groups from 30 to 49 years old, which is the most productive scientific period, meanwhile the number in the group older than 70 years increased.

Year	Researchers without a scientific degree			Doctors of Sciences			Candidates of Sciences		
	1998	2002	in 2002 (%)	1998	2002	in 2002 (%)	1998	2002	in 2002 (%)
Total number of people	53,679	49,802	100%	2,683	2,794	100%	11,350	9,967	100%
The age group out of the total number									
up to 29	3,429	6,078	12.2	2	10	0.4	204	263	2.6
30-39	7,900	5,969	12.0	51	35	1.3	1,219	1,105	11.1
40-49	14,440	10,785	19.9	326	292	10.5	2,871	1,984	19.9
50-59	16,563	14,926	21.7	727	686	24.5	3,696	2,971	29.8
60-69	9,979	9,776	30.0	1,130	1,088	38.9	2,943	2,890	29.0
70 and older	1,368	2,268	19.6	447	683	24.4	417	754	7.6

Table 4. Scientific researchers according to the age group in St.Petersburg.

If we take the year 2002 we can see that the total number of researchers without a scientific degree in St.Petersburg was 49,802 (among them up to 29 years old there were 6,078 people, which constitutes 12.2%), Doctors of Sciences - 2,794 people (up to 29 years old there were only 10 people, which constitutes 0.4 %) and Candidates of Sciences - 9,967 people (up to 29 - 263, which is 2.6%).

### 1.3. Russia's scientists working abroad

Russia's scientists mostly work abroad on the condition of a temporary contract, i.e. after finishing work according to the contract they return to Russia. In Table 5 there are data concerning the number of scientific researchers who worked abroad in 2002 including a gender analysis (Kazantsev, 2004<sup>11</sup>). A comparison of the data in Table 5 allows us to come to the conclusion that the greatest number of male scientists who work abroad belong to the age category of 30-39. The percentage of women working abroad in every age group is lower than men's percentage. It can

<sup>11</sup> The tables in this section are mainly based on the statistics from the book *Scientific Innovative Complex of St.Petersburg* edited by L.Kazantsev, Moscow, 2004.

be explained by the problem of combining work and women's responsibilities in the family.

Russia's researchers working abroad	Total number	including researchers at the age					
		up to 29	30-39	40-49	50-59	60-69	70 and older
	576	89	176	166	101	41	3
Women among them	148	25	57	41	21	4	-
Women among them (in %)	25.7	28.1	32.4	24.7	20.8	9.7	

Table 5. Scientific researchers who worked abroad in 2002 according to the age and gender.

For example, the total number of Russia's researchers working abroad in the age range 60-69 years was 41 people, and among them there were 4 women which is 9.7% of the total number.

#### 1.4. Feminization of science

There has recently been a process of feminization in the scientific cadre in Russia. Though we can observe more active participation of women in science all over the world, in Russia the process of feminization in the scientific cadre has been more clearly observed.

Country	Share of women-researchers (in %)	The year of received data
Portugal	43.6	2001
<b>Russia</b>	<b>43.2</b>	<b>2002</b>
Slovakia	39.6	2002
Poland	38.1	2000
Spain	35.2	2002
Iceland	34.7	2001
Turkey	34.3	2000
Hungary	33.7	2002
Italy	31.8	2001
Finland	29.9	2002
Check Republic	29.5	2002
Norway	28.3	2001
Denmark	28.0	2001
France	27.5	2001
Switzerland	21.2	2000
Japan	11.2	2002

Table 6. The distribution of women in science in Russia and countries of OECD.

It is connected, on the one hand, with the historical fact that during the years of the Soviet power, women had great possibilities of acquiring education in natural

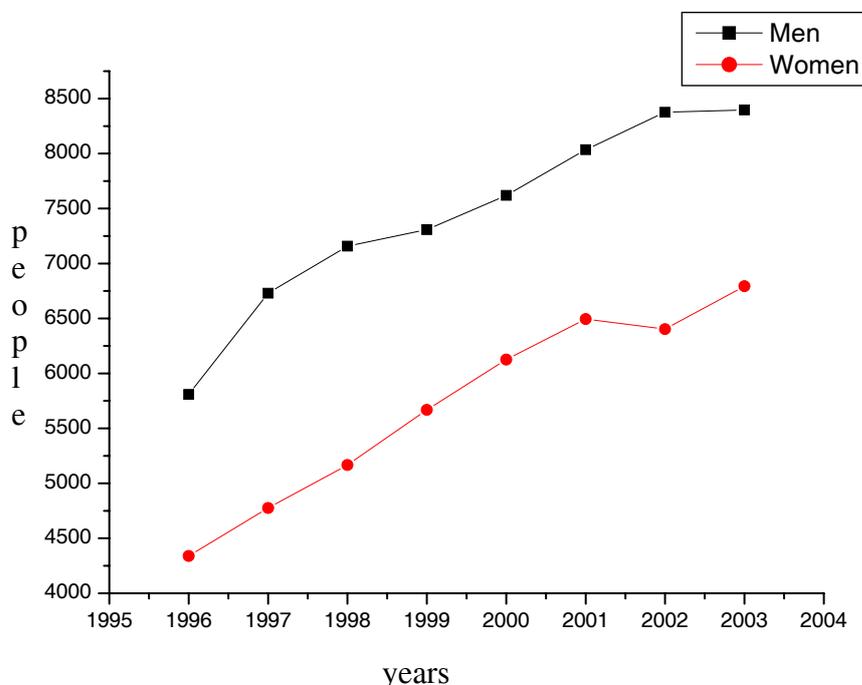
sciences and humanities. The greater engagement of women in science in the Soviet Union was also based on the availability of well functioning kindergartens and crèches which made it possible for women to continue their scientific work a year or three later after the birth of babies, unlike women-researchers in many developed countries, such as Great Britain. On the other hand, the transition to a market economy caused men to start business, consequently leaving science for business, but women having high positions in science chose to stay where they were. In Table 6 there are the data of the average distribution of women of all specializations in science in Russia and the Organization for Economic Co-operation and Development (OECD) (Kazantsev, 2004). From Table 6 we can see that Russia in comparison with other developed countries gives more possibilities for women to work in science. Practically, only in Portugal the proportion of women is larger than in Russia. Nevertheless, not in all branches of knowledge is the participation of women significant, and their number decreases while moving up the career ladder.

In Table 7 there are data showing the participation of women in science in Russia according to a scientific rank (Kazantsev, 2004).

		Natural sciences	Engineering	Medical sciences	Social sciences	Humanities
Total number	409,775	96,328	256,921	22,039	12,565	8,187
Women among them	177,538	40,857	106,186	10,849	7,593	4,763
<b>Women among them in %</b>	<b>43.3</b>	<b>42.4</b>	<b>41.3</b>	<b>49.2</b>	<b>60.4</b>	<b>58.2</b>
Doctors of Sciences	22,936	10,687	4,320	3,681	1,260	1,722
Women among them	4,399	1,791	189	1,268	332	607
<b>Women among them in %</b>	<b>19.2</b>	<b>16.8</b>	<b>4.3</b>	<b>34.4</b>	<b>26.3</b>	<b>35.2</b>
Candidates of Sciences	78,870	34,369	24,560	7,602	4,028	3,395
Women among them	27,396	13,456	3,593	4,186	2,047	1,929
<b>Women among them in %</b>	<b>34.7</b>	<b>39.1</b>	<b>14.6</b>	<b>55.1</b>	<b>50.8</b>	<b>56.8</b>

Table 7. The distribution of researchers according to gender in different branches of science in Russia in 2003.

The data in Table 7 are given without arranging a separate column for the agricultural branch which is included in the total number of researchers. In spite of the existing difficulties in science with financing, recently some rise in the number of ‘post-graduate aspirants’<sup>12</sup> can be observed. We shall illustrate it using St.Petersburg.



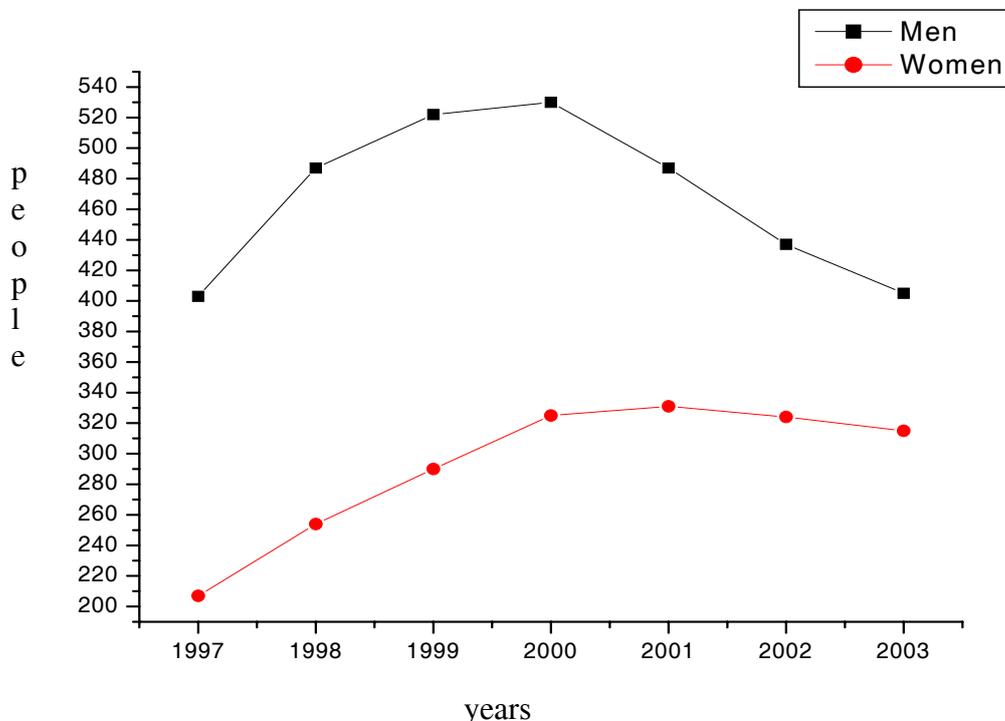
Graph 8. The number of ‘post-graduate aspirants’ (who are going to become the Candidates of Sciences) according to gender in St.Petersburg in 1996-2003.

The upper curve on Graph 8 shows, for example, that in 1996 (x-axis) there were about 5,750 male ‘post-graduate aspirants’ (y-axis) and about 4,300 female ‘post-graduate aspirants’ (the lower curve).

On Graph 8 we can see the curves illustrating the dynamics of the number of ‘post-graduate aspirants’ in St.Petersburg from 1996 to 2003. The number of men still prevails over the number of female ‘post-graduate aspirants’. Since 1997 there has been a slight growth in the number of researchers who write their Doctor of Sciences dissertation in St.Petersburg (‘post-graduate doctorants’, those who have already got a Candidate of Sciences degree but want to get the highest Russian scientific degree - Doctor of Sciences, Graph 9). But while the number of men

<sup>12</sup> After finishing the main course of study at the University and obtaining a Specialist’s or Master’s Degree, a student may enter a university or a scientific institute to pursue post-graduate education. The first level of post-graduate education is ‘aspirantura’ in Russia for ‘post-graduate aspirants’ that usually results in the Candidate of Sciences degree after the defense of the dissertation. This degree is roughly equivalent to the western Ph.D. A Candidate of Sciences may continue post-graduate education and become a ‘post-graduate doctorant’. Several years of study in ‘doctorantura’ and a successful defense of the dissertation result in obtaining the Doctor of Sciences degree (ed.).

decreased starting from 2000 and in 2003 was back to the 1997 level, the number of female ‘post-graduate doctorants’ in 2003, though decreased in comparison with the 2001 level, was, nevertheless, 52,2% higher than the number of female ‘post-graduate doctorants’ in 1997.



Graph 9. The number of ‘post-graduate doctorants’ (who are going to become the Doctors of Sciences) according to gender in St.Petersburg in 1997-2003.

The highest point on the upper curve shows the year 2000 (x-axis) which means that there was the greatest number of male ‘post-graduate doctorants’ (y-axis) in the period of 1997-2003; the highest point on the lower curve shows that in 2001 there was the greatest number of female ‘post-graduate doctorants’ (about 330 women on y-axis).

Graph 9 illustrates the numerical change of those who wrote their Doctor of Sciences theses in St.Petersburg in 1996-2002.

In Table 10 there are data on the researchers and ‘post-graduate aspirants’ in St.Petersburg from 1998 up to 2002 (Kazantsev, 2004). We can reach the conclusion while considering the data from this table, that the data concerning the average number of male and female ‘post-graduate aspirants’ do not give a clear picture about the results of the participation of women in the ‘post-graduate aspirantura’ but, on the whole, correlate to the data of gender composition of researchers up to 39 years old. But we can say from Table 10 that there is no discrimination for studying in the aspirantura for female ‘post-graduate aspirants’.

Year		Post-graduate aspirants	Researchers (up to 39 years old, with or without Ph.D degree)	Female post-graduate aspirants (%)	Female researchers (up to 39 years old, with or without Ph.D degree) (%)
1998	Total	12,324	11,329		
	Women among them	5,166	5,507	41.9	48.6
2000	Total	13,746	11,668		
	Women among them	6,126	5,268	44.6	45.1
2002	Total	14,779	12,047		
	Women among them	6,403	5,224	43.3	43.4

Table 10. Researchers and ‘post-graduate aspirants’ (up to 39 years old) in St.Petersburg from 1998 up to 2002.

Table 10 shows that in 1998 the total number of ‘post-graduate aspirants’ (up to 39 years old) was 12,324 in St.Petersburg: among them there were 5,166 women, which is 41.9%. In the same year there were 11,329 researchers (up to 39 years old) in St.Petersburg: among them there were 5,507 women, which is 48.6%.

## 2. Stratification of Russia’s scientific community and mechanisms of formation of international scientific class

Russia has a strong position in the world science. At present the reformation of the Academy of Sciences of the Russian Federation<sup>13</sup> is taking place. We have a disproportion between the increasing number of students and post-graduate aspirants and a decreasing number of scientific researchers. Only 9% of young respondents are going to choose science as their future job in Russia (for comparison: in Germany - 43%, in France - 48%, in Sweden - 55%) (Gokhberg, 2003).

<sup>13</sup> In this paper Russia and the Russian Federation are used as synonyms (ed.).

The questions are: how to make young people interested in working in a scientific field? How to develop scientific cooperation with Europe without damaging Russia's human resources in science?

The main source of reproduction and development of Russia's science can be the demand from Russia's industry in the field of high technologies. It is important to introduce a new model of science management with the help of some form of integration between Russia's Academy of Sciences and Universities. Scientific structures are changing in Russia: the increase in the share of humanities and the decrease in the share of the technical sciences. The role of women-scientists has increased.

The sources of financing the Academy of Sciences of the Russian Federation are, first of all, the budget financing which is redistributed by the Academy of Sciences. It is its basic financing, besides there are budget means redistributed by the Academy on a competitive basis in the frameworks of special programmes and non-budget means, for example, profit from giving the Academy's real estate property for rent. One more source of financing Russian scientists is the participation in the competition for foreign scientific grants, including European Framework Programmes.

For the last ten years, due to the processes of globalization in the world, the human potential of science has been changed qualitatively. A new international scientific class has emerged – scientists whose research work does not belong to one country because in the course of their scientific career they have contacts with foreign colleagues and practical experience in scientific collectives of different countries and continents.

The process of globalization in Russia has led to a sharp stratification within the scientific community on an income basis. Groups of scientists have appeared who in spite of the disastrous situation of scientific researchers in Russia on the whole, live much better than before the introduction of the market economy in Russia. These scientists actively participate in international conferences and projects, work in the best laboratories in different countries and carry out their experiments at the international level.

Dezhina (Dezhina, 2005) discerns the following groups of 'new Russian scientists':

- the recipients of foreign grants and the executors of orders from foreign companies and universities. This group is growing fast, especially in the field of computer science and applied natural sciences;
- consultants and analysts involved into expert work commissioned by different governmental and political structures;
- directors of scientific organizations and managers of the highest level;
- scientists-entrepreneurs doing both scientific work and innovation business.

What are the mechanisms which enhance the formation of an international scientific class?

It is various international conferences, programmes of scientists' mobility, international scientific grants, work of international scientific centres and

international scientific social organizations. All these mechanisms further the formation of new international scientific links.

### *2.1. Participation in international scientific conferences*

Participation in scientific conferences is the first step for a scientist to show the result of his scientific work to the scientific community. The participation in such conferences is possible via the help of different scientific foundations. In Russia, for example, it is the Russian Foundation for Basic Research and the Russian Humanities Foundation.

There are many foreign scientific funds but the access to them for Russia's scientists is not always open. The most well-known programme supporting the participation in scientific conferences was the INTAS. Russia's scientists often received grants for participation in overseas conferences from other foreign scientific communities engaged in biology, physics and other fields.

However, these scientific communities do not have large financial resources to support constantly Russian scientists. We know several series of programmes supplying grants to female physicists from developing countries of Europe which were declared by the International Union for Pure and Applied Physics (IUPAP) (Didenko et al., 2005<sup>14</sup>). Nevertheless, the way to international conferences is blocked for Russia's scientists by a 'glass curtain': high fees, expensive air tickets, expensive hotel accommodation and visa obstacles.

All that leads to the situation that many well-known Russian scientists invited to participate in international conferences cannot go because of the financial reality. Working for many years for the Regional office in St.Petersburg of the Russian Foundation for Basic Research we can confirm this experience. There were many cases when the number of Russia's participants at the important scientific forums could be counted on ten fingers.

To illustrate this we can take the example of the participation of Russia's scientists in the second forum of Euroscience<sup>15</sup> (ESOF2006, Munich, July 2006). There were only 6 speakers and organizers of scientific sessions from Russia which is 1.3% of the total number of speakers. Among 500 registered journalists there were only two Russian journalists, the third one, the representative of All-Russia scientific weekly 'Poisk' could not manage to get a visa in spite of all her efforts. A similar picture was observed at the 1<sup>st</sup> Forum of Euroscience ESOF2004 in Stockholm in 2004. Russian scientists depend on the actions undertaken by the international organizational committees, because even the cancellation or reduction of the conference fee can become the pass for our scientists to participate in the foreign scientific forum. On the other hand, we can speak about the interdependence observed in this case: the participation of Russian scientists gives the possibility for foreign scientists to get acquainted with Russian researchers, their ideas and proposals which can be useful for them.

---

<sup>14</sup> Didenko, Vorontsova, Ermolaeva, Vitman, Kunitsyna (2005).

<sup>15</sup> Nelly Didenko is a member of the International Euroscience Governing Board and the coordinator of the Regional section of Euroscience in Russia.

## *2.2. Participation in the programmes of scientists' mobility*

In Europe, the problem of the absence of a qualified scientific cadre is acute. According to an estimate by European statisticians, by 2010 there will be a deficit of 70,0000 knowledge workers in the European Union. And this deficit Europe hopes to cover by developing programmes of scientists' mobility for the scientists of Central and Eastern Europe and Russia. At present there are several dozens of programmes of mobility for 'post-graduate aspirants' and young Candidates of Sciences. Scientists who participate in such programmes of mobility acquire experience and skills in writing application forms for their participation in international projects, experience in working on modern scientific equipment and partners for the participation in future international projects. In so doing they enter a new international scientific community.

The number of Russia's researchers who were abroad for more than three months in 1996 was 4,084 people, in 2002 – 2,892 people, which constituted correspondingly 6.5% and 3.3% of the total researchers in Russia at that time (Gokhberg, 2003).

## *2.3. Participation in International scientific programmes*

Participation in international projects furthers the formation of an international scientific class notwithstanding many obstacles. In spite of some difficulties, the number of participants in international projects grows in Russia every year.

The number of international competitions supported by the Russian Foundation for Basic Research and other foreign foundations increases. Among foreign partners there were scientific foundations in France, Germany, Holland, Flanders, China, Israel and a number of other countries.

The level of competition in these programmes is higher than in Russian programmes of the Russian Foundation for Basic Research (RFBR). Thus, for example, in 1996 at the joint organization of the competition by the RFBR and China's National Natural Science Foundation, 238 grant proposals were submitted for evaluation, but only 17 projects were supported (7% of proposals). In the same year in the Russian competition, there were 15,221 grant proposals but only 4,896 projects were supported (about 32%).

The analysis of the data on the RFBR website reveals the fact that the share of scientists from St.Petersburg with the exception of the competition organized by the German Research Foundation (Deutsche Forschungsgemeinschaft - DFG), is lower, as a rule, than the share of the scientists from St.Petersburg at the all-Russian competitions of research projects organized by the RFBR (13%) (Didenko, Petrovsky, Didenko, 2006).

## *2.4. Work in international research centres*

One of the mechanisms of the formation of an international class of scientists is work in international research centres. At present in Europe they have started the creation of the European Institute of Innovation and Technology (EIT) (Rubele, 2006). This is a new project worked out by the European Community.

The EIT intends to combine higher education, research and innovation and have the best scientific groups from different universities and scientific-research centres of Europe. It is supposed to offer Master's courses and post-graduate courses. Innovation implies commercialization of the results of the work. The Institute is going to be financed from different sources, partly by the European Framework Programmes for Research and Technological Development.

In Russia's Academic centres new international research centres have developed recently (Report of RAS, 2005). For example, in the Vladikavkazsky Scientific centre of the Academy of Sciences, a scientific research centre 'UNESKO' has been created for studying sustainable development of mountainous territories.

### *2.5. International cooperation by the centres of the Academy of Sciences of the Russian Federation*

International cooperation by the scientific centres and divisions of the Russian Academy of Sciences takes place within the framework of joint international projects, agreements and grants.

International cooperation includes grants of the Russian Foundation for Basic Research and the Russian Humanities Foundation, regional programmes, foreign grants, participation in international programmes and projects, agreements with foreign partners, expeditions including the participation of foreign scientists, business trips abroad, training courses for foreigners in Russia, foreign partners, participation in conferences, organizational committees of international conferences, exhibitions, joint research and commissioned research by foreign companies, work for international programmes of CRDF, INTAS, NATO, ISTC<sup>16</sup> and many other foundations, and also the international agreements and contracts signed up by Russian scientific organizations with other countries at the level of the Academies of Sciences of different countries (from Russia - by the Russian Academy's divisions, institutes, laboratories and individual scientists).

The analysis of Russian-foreign projects of the Academic Institutes at St.Petersburg's Scientific Centre of Russian Academy of Sciences shows that scientific cooperation has taken place recently in more than 30 international programmes and foundations (Didenko, Petrovsky, Didenko, 2006).

In Table 11 there are data related to some divisions and scientific centres of Russia's Academy of Sciences.

In 2005, within Russia the Academy of Sciences organized about 300 international and national congresses, conferences and symposiums where more than 3,600 foreign scientists participated. However, in spite of the active development of international links between the scientists of the Russian Academy and foreign scientific organizations, the potential of Russia's scientists is not fully utilized.

---

<sup>16</sup> CRDF - the U.S. Civilian Research and Development Foundation; INTAS - the International Association for the promotion of co-operation with scientists from the New Independent States of the former Soviet Union; NATO - the North Atlantic Treaty Organization; ISTC - International Science and Technology Center (ed.).

<i>The name of the scientific centre of Russia's Academy of Sciences (RAS)</i>	<i>foreign grants, international programmes and projects, agreements with foreign partners</i>
Far Eastern Division (RAS)	30 foreign grants, 58 international projects, 48 agreements with foreign partners
Siberian Division (RAS)	98 foreign grants, 16 international projects, 174 agreements with foreign partners
Dagestansky Scientific Centre (RAS)	joint research and projects with four countries
Kabardino-Balkarsky Scientific Centre (RAS)	cooperation with scientific organizations of 12 countries
Kazansky Scientific Centre (RAS)	23 bilateral agreements, 17 international grants
Karelsky Scientific Centre (RAS)	17 agreements and contracts for cooperation with foreign scientific organizations, participation in 65 international projects
Kolsky Scientific Centre (RAS)	37 international projects
Chernigolovka Scientific Centre (RAS)	24 foreign grants, 17 international projects, 28 participations in international programmes
Pushchinsky Scientific Centre (RAS)	33 foreign grants, 20 international projects, 6 agreements with foreign clients
Samarsky Scientific Centre (RAS)	3 foreign grants, 9 agreements with foreign partners
St.Petersburg Scientific Centre (RAS)	organization of international scientific symposium 'Global Energy', 4 foreign grants, 9 international projects, 6 agreements with foreign partners, a number of international conferences, reception of 11 scientific-technical delegations
Saratovsky Scientific Centre (RAS)	5 foreign grants, 2 international agreements, joint research and training trips to 19 countries, reception of scientists from 8 countries
Ufimsky Scientific Centre (RAS)	3 international projects
RAS	1,281 international agreements, contracts and grants where signatories are scientific organizations from 75 countries at the level of Academies of Sciences, their divisions, their institutes, laboratories and individual scientists.

Table 11. International cooperation of the scientific centres of the Academy of Sciences of the Russian Federation (RAS) in 2005.

In Table 11 there are data illustrating the development of international links with some of the scientific centres of Russia's Academy of Sciences (RAS Report of 2005).

### 3. The assessment of intellectual capital in science

At present in the developed countries, in particular, in the European Union and the USA, great attention is paid to the quantitative and qualitative assessment of the intellectual capital of scientists. It is important information for the experts who assess the applications for an individual grant or a proposal for a large scientific project or for the assessment of the quality of results.

One of the most important indicators for the assessment of intellectual capital is the participation of scientists in grants supported by scientific foundations, the share of these grants in the overall financing of institutes, and also the indicator of successful applicants in the ratio of grant proposals to received grants.

It is well known that grants are awarded via independent expertise and thus the awarding of grants is one of the objective indicators of scientific potential of employees and of the scientific organization as a whole. Consequently, the awarding of foreign grants reflects the international level of the research.

Grants play an important role in assessing intellectual capital in foreign research. For example, K. Leitner and C. Warden (Leitner, Warden, 2005) present a survey of recent research on the optimal choice of parameters for the assessment of intellectual capital and scientific-research organizations (see further in 3.1).

#### *3.1. Indicators used for the assessment of intellectual capital of scientific research organizations in Russia and in other countries*

Qualitative and quantitative assessment of knowledge is paid great attention to nowadays. In the USA there are patents on the ways and methods of assessment of knowledge (Kostoff, 2004). It is especially important for the assessment of grant proposals and for the assessment of the results of scientific research performance, and also for the choice of partners for an international consortium in international scientific projects.

In Austria and Germany they have been publishing reports on the intellectual capital of scientific research institutes since 2003 (Leitner, Warden, 2005). A detailed report of a scientific research institute was used for the first time as a link between interested external parties (a customer and those who wanted to control the finances allocated for the research) and the institute. Besides, a detailed report about intellectual capital gives the possibility of improving the management of human resources. While writing reports, scientific research organizations chose the same indicators in Austria and Germany.

If the first set of indicators for the assessment scientific research organizations in Austria and Germany had 200 indices, then after critical selection the number of indicators reduced up to 60 and the final list had 34 indices grouped in 9 blocks in annual reports. The main blocks were *human capital, financial capital and its structure, relative capital, scientific research process, and applied projects*.

The results of scientific work were assessed via both financial results and the number of publications in special scientific journals, a number of delivered lectures and the projects supported by big national scientific foundations. Separately,

economically oriented projects were considered as well as the overall number of patent proposals and received patents, profit from licenses and the number of newly developed technologies. And finally, the social orientation of results was marked which was measured by the number of visitors to the websites (external users) a month.

For the comparison below there is Table 12 of indicators usually used for making annual reports by Russia's Academic institutes according to the archives data of St.Petersburg scientific centre of RAS. The total number of indicators used for an annual report of an institute was 54 indices.

№	Indicators of intellectual capital of the scientific research institute of RAS
1	human capital including the number of employees of each scientific rank: Doctors of Sciences, Candidates of Sciences, scientific researchers, etc., without any focus upon the position of a woman-scientist
2	scientific-research process expressed in subjects of study and projects
3	research programmes including the information about the number of projects financed by the state, Russian Foundation for Basic Research, Russian Humanities Foundation, foreign grants and projects
4	information about Innovation activities including the number of licensed agreements
5	interaction with the science of Universities including delivered lectures and supervision of Master's and Bachelor's degrees
6	financing (including budget financing by the Ministry of Industry and Science of Russia), contracts, grants
7	publications, including national and foreign journals, books, monographs published by Russian and foreign publishing houses.
8	patents including the number of submitted and accepted patent proposals
9	participation in scientific conferences including organization of them in Russia, participation in Russian and foreign conferences, awards and honorary diploma
10	international cooperation including the participation in interacademic international agreements, participation in international agreements (grants) on scientific and scientific-technical cooperation, business trips abroad, reception of foreign scientists
11	the preparation of a cadre including the number of post-graduate 'aspirants', the number of defended Candidate's and Doctor's dissertations, the number of young specialists including post-graduate 'aspirants'

Table 12. The groups of indicators used by Russia's Academic institutes for writing a typical annual report.

However, firstly, not all positions in a Russian academic report are comparable with the positions used in the report in Austria and Germany. Secondly, these indicators do not play an important role in Russia in fact.

For the assessment of the qualities of the partner or for the formation of the consortium for an international project, the indices used for characterizing intellectual capital of a scientific-research organization of different countries must be clearly defined. It is worth remarking that in Russian indicators used in annual

reports there is no indicator of socially-oriented projects, i.e. the number of external users visiting websites.

There is also a list of researchers and projects ready to use with short annotations and the names of authors in the annual report. This list is published in the annual report of the RAS every year.

### *3.2. International research programmes and the participation of scientists of St.Petersburg: the Russian Foundation for Basic Research (RFBR) and the INTAS on the territory of Russia*

One of the first programmes of foreign aid to Russian scientists in the difficult 1990s was the programme of the INTAS. Though, at present, it is closed according to a decision by the European Commission, the performance of the INTAS was very important for those Russian scientists who wanted to join the European scientific community. Only in St.Petersburg according to the data presented by the management of the INTAS for the period of 10 years from 1993 to 2003 (the functioning period of this organization on the territory of Russia), 715 projects were supported by the INTAS in which 1,002 scientific teams participated in St.Petersburg (Didenko, Petrovsky, Didenko, 2006).

Starting in 1997 the RFBR became very active and began to arrange frequent international competitions. Altogether the RFBR organized about 30 competitions (1997-2008). For example, there was a series of competitions jointly organized by the RFBR and the German scientific foundation DFG; the RFBR and the Chinese National Natural Science Foundation; the RFBR and the Japanese scientific foundation (JSPS); the RFBR and the CRDF (the USA); the RFBR and the CNRS (France). There were also joint competitions with scientific foundations in Austria, Taiwan, the Netherlands and other countries. The analysis of these projects allows us to conclude that the participation of scientists of St.Peterbsurg in the grants of joint competitions of the Russian RFBR and a foreign scientific foundation is lower than the participation in the competition organized by the Russian RFBR alone. (Didenko, Petrovsky, 2006).

Although the number of projects financed by the RFBR alone is much higher than those organized by the RFBR with a foreign partner, the role of these joint competitions is very important because such joint competitions allow Russian scientists to apply in the Russian language and to present a grant proposal in Russian and according to Russian rules via the RFBR. Thus Russian scientists, due to cooperation of the RFBR with foreign partners, have more possibilities to integrate into the international scientific space by participating in the laboratory work, attending foreign conferences and so on.

There is an unused potential of Russian scientists which can be engaged in foreign scientific programmes. We can compare the figures: the RFBR awarded grants to 4,700 projects in St.Petersburg from 1992 to 2003, while the INTAS for the same period supported 715 projects. In 1993-2003 about 90% of grants

awarded by the RFBR in St.Petersburg and Leningrad oblast<sup>17</sup> were given to researchers representing academic science and universities, while 23.4% of grants of the INTAS were given to employees of research institutes of applied science. This reflects the policy of the RFBR to support fundamental science.

Years	RFBR		INTAS	
	The number of the RFBR's grants in St.Petersburg and Leningrad oblast	% (from all grants in Russia awarded by the RFBR)	The number of the INTAS's grants in St.Petersburg and Leningrad oblast	% (from all grants in the CIS awarded by the INTAS)
1993	333	13,6	176	36,9
1994	398	13,9	113	25,2
1995	374	12,6	48	33,3
1996	692	14,1	66	20,6
1997	384	13,4	83	22,1
1998	459	13,9	-	-
1999	393	11,9	63	31,8
2000	397	13,1	44	21,2
2001	427	13,0	67	39,9
2002	386	11,7	-	-
2003	312	11,9	46	28,4

Table 14. The distribution of grants in St.Petersburg and Leningrad oblast financed by the RFBR in Russia and the INTAS from 1993 to 2003.

For the period from 1992 to 2003, the INTAS supported 2,726 scientific research projects and projects of information network in Russia including joint competition with Kazakhstan, Ukraine, and Belarus. The RFBR supported about 30,000 grant proposals for basic research. In St.Petersburg the INTAS supported 715 projects (1,002 teams) and the RFBR supported 4,700 projects. In spite of the positive influence of these competitions and the development of international scientific relations between scientists of Russia and other countries of the CIS and scientists of Europe, the competitions show that the scientific potential of Russian scientists has not been used fully, in particular the potential of the scientists of the Northwestern okrug of Russia.

According to the opinion of many researchers, the optimal way for Russian scientists to become members of the international scientific community is to participate in competitions organized by the Russian Foundation for Basic Research or the Russian Humanities Foundation with a foreign scientific foundation and to participate in European research programmes. However, the participation in European competitions is difficult for Russian scientists due to the absence of experience in writing grant proposals or finding foreign partners. It

<sup>17</sup> When Leningrad was renamed in 1991 and got its historic name St.Petersburg, the neighbouring territory of Leningrad Oblast (region) preserved its name (ed.).

leads in reality to the situation when the funds which are allocated by the European Union for Russia are not fully used by Russian scientists. Recently, the requirements for the participation by Russian scientists in the Framework Programmes have been modified which simplify the process. In previous years the participation by Russian scientists in European projects was insignificant. For example, in programmes on socio-economic subjects during the period of 1999-2002, there were only two Russian teams (from Moscow and St.Petersburg) out of 1,507 teams (Synopses, 2003). At the same time the newly EU joined countries (the Baltic countries, Poland, Hungary, the Balkan countries) actively participated in almost all competitions. Nevertheless, some improvements related to Russian participation can also be observed.

## **Conclusion**

The process of globalization has not left Russia untouched. Russia tries to cope with new economic, political, social and scientific requirements and growing cooperation and integration in these fields. Being a part of the world hierarchy, Russia has started playing according to new international rules: and science is just the field where national identity is the least important. Thus, we can expect that the international scientific community will be consolidated much quicker and easier than any other community.

The recent increase in international conferences, programmes and scientists migration are clear signs of the process of globalization. Russia is slowly becoming a member of the international scientific community via international programmes, grants, reception of foreign scientists, business trips and so on. The very criteria of the quality of research and the evaluation of a scientific research organization in Russia have changed due to the interaction with foreign colleagues. However, many reasons do not permit Russian scientists to fully use their potential on the international scientific stage.

Russia's scientific community has been subjected to double pressure: globalization and Perestroika. The scientific personnel have shrunk which was caused by economic restructuring, in other words by the transition to a market economy. Some scientists and researchers, especially men, started business and left science, but others managed to find foreign partners and get into international research projects. Thus, stratification in the Russian scientific community took place and a new well-off class of scientists has appeared who have acquired expertise abroad while interacting with their foreign partners. They have become the force for changes in the domestic scientific community. We can also observe the ageing and the feminization of the scientific cadre in Russia, due to the exit of male researchers from science or migration to foreign countries.

The agent chooses possible strategies in new surroundings interacting with structural changes and creating new structures. Political changes in Russia in the 1990s as well as the following economic changes created a suitable background for the penetration of global processes into the Russian scientific community.

# Transborder Cooperation in Modern Russia as a Result of Globalization Challenges

Nickolay MEZHEVICH

## Introduction

During many centuries Russia developed as a state existing under conditions of a conscious limitation of external influences in economic and political life. Independently from the prevailing ideology the Russian elite regarded suspiciously the attempts of merging the national model of development with the western model. However in the 21<sup>st</sup> century the declared targets of Russia's development can be implemented only if Russia admits that the driving force of world development is globalization. Russia's joining many international organizations and a long and difficult preparation for the membership in the World Trade Organization (WTO) provides evidence of the general course of the country aimed at integrating into the world economy and cooperating with North-Atlantic and European countries.

In Soviet times what was beyond the border was perceived as something alien and hostile. The border had a barrier function. A civilizational barrier also separated Russia from that other world and the symbol of separation was the border. Contacts and connections with the world took place only at the highest governmental level. There was neither borderland cooperation nor transborder links. Now the situation has changed: near the Baltic Sea in the Russian regions Finnish and Scandinavian<sup>1</sup> investments dominate and the cities of the North Western part of Russia participate in the activities of European and Baltic organizations. Similarly in the Magadan region (Magadan oblast<sup>2</sup>) the development of cooperation with the countries of North America and the Asia Pacific countries is taking place. Russia gets into the integration space where the integration process pulls the country to the opposite directions: Asia-Pacific region and Europe, i.e. the integration space of divergent vectors. Is it dangerous for the integrity of the state to develop borderland and transborder cooperation in such a case?

This paper consists of four parts and considers the following questions:

- the borders of nation-states under globalization;
- Russian and European regionalisms: the common and the particular;
- external factors in the regional development of Russia;
- transborder cooperation and the new borders of Russia.

---

<sup>1</sup> We consider Scandinavian countries to be the countries with similar linguistic origin: Sweden, Denmark and Norway.

<sup>2</sup> Magadan oblast is a federal subject of the Russian Federation in the Far East (ed.).

## 1. The borders of nation-states under globalization

There are different approaches to the study of the state. Theoretically, however, the state is conceived as a territory which has borders. We consider a transnationalist approach<sup>3</sup> to be the closest to our position and the most appropriate for the aim of our study.

We use the following key characteristics of the process of globalization in our study:

- the negation of the universal value of sovereignty and the conflict between sovereign nation-states and network actors (network communities, network organizations, etc);
- the tendency of losing the sharp distinction between foreign and domestic policies;
- the growth of international activities of regions of a state and the regions uniting parts of states and the increase of their direct influence upon world events;
- the enlargement of the number and diversity of political actors in world politics (regions, separatist forces, religious movements, 'green' parties, transnational corporations);
- the changing character of security threats and a wider conception of security including 'soft' forms (e.g. the flow of information, ecology);
- the increasing permeability of borders and the transnational flow of capital, information, services and human resources;
- the formation of international subregional and interregional units caused by the integration process between states and decentralization inside the states;
- the increase of the role of global management, the redistribution of power functions from nation-state level to the global level.

The transnationalist approach defines international relations as "all interactions between state-based actors across state boundaries" (Evans and Newnham, 1998: 274). 'International' in this case is a synonym to 'transborder'.

Nation-states face both internal and external challenges more often due to the increasing interactions under globalization. The nation-state managed to cope by itself with internal challenges such as terrorism, for example, within its borders or by changing the borders. The external challenges during the post-westphalian period<sup>4</sup> were the direct breaches of sovereignty of a nation-state and consequently the borders. Since that time the principle of self-determination has given the rights to states to the detriment of other communities in the state. It is necessary to re-consider it and to recognize different intermediate types of autonomy in regards to the state's sovereignty. At present the nation-states are not the only actors in

---

<sup>3</sup> Transnational theory states that under globalization the traditional allegiance (home, community, class, etc.) is constantly being re-defined due to increased migration, diasporas, cultural and economic globalization (ed.).

<sup>4</sup> See Editor's Notes.

international relations. However, it is difficult for a nation-state to admit it because it has lived according to the Westphalian law of sovereignty for centuries.

In the modern world interregional relations develop under the influence of the competing processes of autarky<sup>5</sup>, separatism and regionalism on the one hand, and cooperation, integration and globalization on the other hand. The arena of conflicts of these tendencies is practically the whole world with the exception, perhaps, of the so-called 'excluded countries'.

Borders play a special role being a specific indicator of the degree of openness of the country to the influence of globalization processes. In Russia the norms and political practices associated with sovereignty are subject to reconsideration more and more in the context of globalization.

There is a certain consensus that borders are an important subject for study and research. Because of the qualitative changes to borders on the political map of the world it seems to us important to analyze the theoretical and practical status of borders under the conditions of such deep changes since the 1990s. The borders, being a part of any definition of a sovereign nation-state, play an important role in the international political processes.

The traditional understanding of borders presupposes a line on the map showing the place where the space of one state finishes and the space of another starts. The management of borders (the position and status) takes place according to national legislation and is an instrument of state policy in economic, political and ideological spheres. The economic and political possibilities of the state and its practical activities are supposed to be confined within the state borders.

The situation has been changing recently. The borders have become dynamic, movable and permeable. The decreasing autonomy and sovereignty of nation-states will essentially change the function of borders:

- nation-states will be incapable of providing control over the transit of the majority of people, goods and information over their borders which will lead to changes in nation-states as well as in the function of the borders;
- customs and hard currency barriers will collapse, i.e. the things which have enabled the nation-state to control the wealth of the state.

Borders are associated with a set of socio-cultural actions of the nation-state and the community within it. Using the term '*borderland*' instead of a border we can get a clearer understanding of those social processes that take place in the borderland space (Makarychev A. Prozorov S. 2004: 9) Real borders and official borders do not coincide, they differ more and more. The border has not disappeared, it has returned in a different form. It has acquired more meanings as well as a new importance for economic relations under globalization. The border today is not a line in territorial space with a definite political and legal status, but a factor which implies certain complex of global economic relations. Simmel states that though this line just denotes the difference of relations between the elements of this sphere and the elements of the other one, this line, nevertheless, becomes a live physical energy which joins and pushes the elements of both spheres either

---

<sup>5</sup> Autarky is a policy of establishing a self-sufficient and independent national economy (ed.).

together or in the opposite direction by getting between them (Simmel, 1995:132). The border can disappear from the local place, but it stays in the minds of people; it is preserved in the memory and habits of people. According to Joseph Camilleri we live in a transition period to a future civil society where there will be no clearly defined borders based on the principle of national identity (Camilleri J. 1990:35).

At present, existing simultaneously with official borders, are movable, blurred borders related to the different spheres of life of the society. Such unofficial borders can be called '*identifying borders*'.

The state border of Russia is not homogeneous, it can play the role of:

- a) the barrier marking the secure territory (boundaries);
- b) the line of transit to the adjacent territory (borders);
- c) the line of the peripheral territory (margins);
- d) the line for facing the neighbours (frontiers);
- e) the territory which has its own specificity formed as a result of close interaction with neighbours and multiculturalism (borderlands)  
(Browning and Joenniemi, 2002: 3-4; Minghi, 1991:15).

The border between Russia and Belarus is something between the model 'b' and model 'd'. The border between Russia and Estonia (and also Latvia, Lithuania, Poland, Georgia) is the classical case of model 'a'. The border between Russia and Kazakhstan is the model 'd' and 'e'. In other words, the border of one state regulated by the same law has a different political and socially identifying status.

Michael Emerson characterizes this situation in the following way: Russia is an involuntary ex-empire which has lost the most part of its influence over the space of the former Soviet Union but still is a strong centre whilst the European Union is also an involuntary empire, acquiring new territories more and more in the European space. Because two empires exist in the same geographical and political space interaction between them is inevitable. If there is a core, then there is a periphery. The problem with Russia and the EU is that their peripheries partially coincide.

Emerson gives the following gradation of the European borderland:

- the exactly drawn periphery (i.e. the areas which have a clearly dividing line between the two empires and no question arises about the status of any territory);
- integrating peripheries (i.e. states which want to integrate into any of these two empires);
- partially coinciding peripheries (i.e. the formations in which the community of one empire is surrounded by another or constitutes an enclave inside the other empire) (Emerson, 2002).

The space between legal and imaginary borders can be of different size. Moreover, the area of Russia's identity existing on some parts of the territory can be *smaller* than it is according to the state borders. The influence of the Russian economy can be both smaller or larger than it is supposed to be according to Russia's formal borders.

Such territories are identified as 'margins'. Margins and borders may not coincide territorially. Such a phenomenon is within the above-mentioned concept

of additional identification. On the one hand, the formation of the regional identification in the area is based on borders. On the other hand, an existing identity shifts margins in relation to borders.

A borderland of two states has a double position in the socio-geographical space of these states, being simultaneously the centre of connections and also the periphery of the states. Being a periphery of the nation-state the borderland becomes the centre of the region, the life of which is defined by the rules of this borderland. In some sense it is possible to speak about cultural homogeneity of the borderland unlike the heterogeneity of the nation-state.

Thus, the central category of the social analysis of the border phenomenon must be a *borderland which is understood as two neighboring regions on both sides of the border representing one social space*. The identification of the border can have different meanings in different places. It is connected with the formation of borders: not all of them were artificially drawn, they often have a natural character based on nature and culture of the region becoming an independent socio-historical phenomenon.

The properties of borders also depend on the spaces which they separate. In this context the genesis and political practices of Russian and European regionalisms need to be described in both the general and particular cases.

## **2. Russian and European regionalisms: the general and particular**

A wide-spread approach to regionalism is the opinion that regionalism develops on the territory that claims that it has an economic independence combined or not combined with political, ethnic and historical characteristics peculiar to this region.

Regionalism is based on the objective differentiation of natural and economic conditions, however it develops only if it is shaped by the economic interests of both local and federal economic groups.

Regions realize their economic interests through influence upon the central power from inside, i.e. in the frameworks of the system of state power. International activities of regions take place in such fields as:

- creation of a more complicated territorial system of management;
- transborder cooperation;
- non-military aspects of security (ecological, cultural security);
- attraction of international resources for regional programmes;
- different forms of economic and humanitarian cooperation.

The appearance of territorial subjects and regions on the international stage conditioned the forms of modern regionalism. Modern regionalism is studied from different angles. As a rule, it is regarded as an element of modernization and progress. However, regionalism is often considered as a threat to the state, carrying the danger of fragmentation and separatism. In fact, regionalisms are distinguished according to the character and strength of cohesion. It is not possible to apply (or create) one model to all variants of regionalism.

Transnational regions are shaped, first of all, according to economic needs. As a rule, they are specific industrial, trade and financial corridors and systems of transactions connecting the leading industrial centres. The frame for the formation of a transnational region is a kind of system of economic interrelations profitable for the participants of the region. Such regions can exist on the territory of any country.

From our point of view, European regionalism as a theoretical conception and political and economic practice has developed in conditions different to Russian regionalism, has a different nature and leads to consequences that are not typical features of Russian regionalism.

At the end of the 20<sup>th</sup> century and the beginning of the 21<sup>st</sup> century European regionalism became, first of all, the instrument of economic cooperation enabling the development of borderlands ('neglected corners') of the complicated system of European borders. Such regionalism lies in the foundation of all European integration, though the economic management bodies of the EU look at regionalism with criticism as an ideology of political separatism and economic isolation. The manifestation of regionalism in this form is the formation of transnational regions - 'euroregions'. Originally, in the declaration of the first intergovernmental bodies of the European Economic Community (EEC), European regionalism revealed itself as a *political project bearing the tasks of consolidation and peace-making in post-war Europe*, and only later did it become *the real instrument of economic cooperation and the foundation for overcoming interterritorial disproportions*. European economic regionalism is not the separation of territories due to their specific historical, ethnic or geographical backgrounds. It is the process of the realization of international cooperation between territories of different European states, the formation and development of economic links and contacts between them in the framework of legal limits. The distinctiveness of Lombardy or Aland Islands is not aimed at closing or isolating territories from the external world, but it is a factor enabling them to integrate successfully into European and world economies. From the economic point of view, in the foundation of European regionalism lies the practice of developing territorial division of labour based on *economic* process but not on the process of the development of some territory though it has clear territorial consequences. Thus, in spite of all differences in regional policies of the United Kingdom of Great Britain and Northern Ireland in comparison with the regional policy of the Polish republic, methodologically their regionalisms can be considered to be similar. We also think that European regionalism implies the integration of the country 'in parts' via transborder cooperation. It was in this way, i.e. via 'euroregions', that the integration of Poland into the EU took place.

It is necessary to emphasize that *Russian regionalism has another nature as well as other economic and political consequences*. Russian regionalism is based on the theoretical-methodological approach implying the existence of the region as a *territory* having its own administrative status for the purposes of administrative

and economic management which functions as an intermediate link between the central government and local self-government. Clearly, in this case it is possible to point out the narrow economic explanation in the framework of which economic regionalism is considered as a totality of processes of reproduction based on the specificity of territorial structure of the economy and natural and labour resources.

Russian regionalism had a different type of formation than regionalism in Europe. It is based on the great differences of natural and economic conditions (quite different to European ones) and is shaped by the economic interests, not only of the organs of power, but oligarchic groups both in the centre (federal level) and in the locality (regional level). We deal with a 30 times difference in the per capita level of the Gross Regional Product (GRP) among regions where a region is comparable with or sometimes even bigger than any other European country. Russian regionalism arose from the destruction of the economic (and political) space in the 1990s. It is because of this reason that Russian regionalism tries to work out special models of development and to have isolated trade markets.

The theoretical basis for Russian regionalism dates back to the ideas of a regional self-supporting economic structure and free economic zones. Regionalization in Russia (within the former Soviet Union) was historically predetermined by the processes of modernization. Industrialization which started at the end of the 19<sup>th</sup> century had a local character creating centres of advanced industry. It was the realization of the policy of alignment of the social-economic level of development in all republics of the Soviet Union, then, it was the realization of the needs of the military economy and then the realization of the interests of some powerful groups and subjects of economic activities.

Russian regionalism has an unstable character. It is characterized by the historically formed space differentiation with a certain level of economic development and constant evolution of forms of territorial management and mechanisms of regional development. Post-Soviet regionalism is the process of economic and political disintegration with the formal preservation of the framework of the whole state and its borders.

Regionalism in Russia has a double nature. On the one hand, it follows the basic tendencies of development in the world, on the other hand, there are the following unique Russian factors:

- appearance of new tasks connected with the functioning of the interregional market and information space;
- the size of Russia's territory and differentiation of natural conditions, territorial dispersion of elements of productive forces over the vast territory of Russia;
- the necessity to carry out interregional structural, investment, social, external trade, financial, ecological and scientific-technical policies.

Thus, before considering external factors in the regional development of Russia, it is necessary to reveal the difference in the origin of Russia's regionalism and Western regionalism. The difference explains the degree of 'openness' of Russia to a global economy.

### 3. External factors in the regional development of Russia

The beginning of the 21<sup>st</sup> century changed the general picture of the economic development of the leading countries of the world. New global processes of integration of markets, finances and economies gave birth to a new concept 'globalization'. The development of economic globalization is due mainly to the needs of modern economies and societies caused by a great density of the market, rising competition and a limitation of main resources. A new division of labour implies the breaking down of borders even for the production of relatively simple goods and services.

*The world economic space becomes one field for entrepreneurship, where the geography of localization of productive forces, industrial structure of investments, production and supply are a qualitatively new level of internationalization of the reproduction processes.*

Regional differences in values, culture, structures of economy and existing institutions promote the rise of competitiveness of bordering regions. The factor of permeability (or contact) of the border makes us think that there is a possibility of alignment of average per capita indicators in two neighbouring regions of different countries in the long-term perspective. Thus, the free movement of resources (capital, labour, goods) in the economy can noticeably raise the effectiveness of its use. Central regions are free to decide what they want, but a periphery is under the control of the centre and depends on it. It brings about the flow of resources from the periphery to the centre which increases its growth but slows down the economic growth of peripheral regions. This process has certain territorial consequences. Jeffrey D. Sachs in his work 'The End of Poverty: Economic Possibilities for Our Time' (Sachs, 2005) states that the end of the 'Cold War' did away with the division into ideologies but the division according to technologies superseded that ideological division.

However, technological borders (margins) do not necessarily coincide with national borders. It applies also to Russia. In Russia there are highly technological regions with post-industrial economies: Moscow, the Moscow oblast, St.Petersburg and the Leningrad oblast and the Kaliningrad oblast. Outside these territories we can find highly technological enclaves (scientific towns, technoparks), however they are territorially sporadic. The modern economic geography of Russia shows that on the western border especially within the Northwestern region the nearness of Europe promotes technological modernization.

For centuries Russia has been developing as a state existing under the conditions of a conscious limitation of external influences in the economic and political spheres. Russian elites independent of their ideological outlook treated the attempts to introduce western models into the national economy with a certain suspicion. However in the 21<sup>st</sup> century the declared targets of the development of Russia can be implemented only after recognizing globalization as a moving force of world development.

Russia's joining numerous international organizations and its long and difficult preparation for membership in the WTO shows that the country heads for integration into the world economy and cooperation with European and North-Atlantic countries.

The territorial and political peculiarities of Russia have always presupposed the recognition of the significance of a regional aspect of economic development. The existing understanding of regional development as a totality of acts of management, legal norms and economic practices demands the provision of balanced territorial development coordinated with the balance of economic interests of the state and regions. Such an approach, which does not admit the significant role of external links and transborder cooperation in the regional development, is traditional and dates back to the time of the Soviet Union (USSR). Ultra-westphalian understanding of the economic sovereignty in the USSR implied negligence of the external factors of development.

Only recently after the changes in economic practice, have works been published in Russia which consider the role of external factors in the regional development of Russia. The economic development of any of Russia's regions is defined not only by the character of the evolution of the economy, but also by many external influences of diverging directions.

In Russia the reforms of the end of the 1980s and the beginning of the 1990s led to the situation that economic decisions began to be taken outside Russia. During the time of the Soviet Union, the centres of decision making were inside the country. At present a significant influence upon the economic development of territories is created by the economic subjects which are outside the state borders: foreign states and their regions, international organizations, transnational companies, programmes of transborder cooperation and so on. So, there is such a situation that for a number of borderland subjects of the Russian Federation and municipal formations *it is simpler to develop relations with neighbouring countries rather than with their neighbouring Russian regional and municipal formations*. This situation can be seen in the Republic of Karelia, Kaliningrad oblast, Leningrad oblast, Smolensk oblast, Belgorod oblast, Khabarovsk krai<sup>6</sup> and, in the future the similar situation can arise along all western and southern Russian borders. *Evidently the observed tendency means that the management of regional development was taken over by external managing centres*. This circumstance can lead to both positive and negative consequences.

The development of transborder cooperation is based on a number of tendencies of world development. In the second half of the 20<sup>th</sup> century a new global tendency appeared: it is the entrance of the governing bodies of the regions and local self-governing bodies into the international arena which was reflected, for example, in the documents of the Council of Europe. This 'special' level of international relations represents a very complicated system of connections between states, between the parts inside the state and between the parts of different states.

---

<sup>6</sup> See Editor's Notes.

At the first stage of this process the leading regulatory function in the economy and in politics still belonged to the state level. However the changes which have occurred recently allow us to say that the subjects of the Russian Federation, big administrative units and organs of local self-governance, in a number of cases, act as an independent force playing a significant role (if not defining) in the regional development. An asymmetric answer to globalization has become regionalization. As a result of a cumulative effect of the interaction of national and world factors, the borderland acquires more importance and becomes an integral factor of territorial, socio-economic development conditioned by the specificity of the borderland.

The powerful elite tries to find new possibilities for socio-economic development but by the present moment a certain quality of the territory has already been established, i.e. there is already a set of key (inertial by essence) characteristics of economic development which are not able to change quickly. The majority of Russia's regions inherited the character and signs of the Soviet period of development, i.e. the industrial epoch. Post-industrial signs in regional development are typical for capital city regions, seaside regions, borderland regions and some raw material extracting regions the production of which is exported. Thus, openness to the external world creates the possibility to 'include' additional resources of development connected with the effect of neighbourhood, external trade and transborder cooperation.

The use of external factors of development is practically inevitable because if the region has exhausted its former resources of development and the new ones have not been attracted, degradation of the economic structure becomes inevitable. In fact, degradation in such cases becomes the finishing stage of development – the stage where the former structure ceases existing and is superseded by a new structure, not better, perhaps, objectively, but suitable for new conditions of development of the region.

At the end of the 1990s, in the period of disintegration, an interesting term 'territorial fabric of the country' was suggested by Russia's economic geographers. The following was put forward as a very important problem of state development: the 'territorial fabric' of the country, woven by using only vertical links will be very thin and not durable.

At that time the prediction seemed to be far away from real life and did not correlate to the on-going processes. However, now, in 2008 we can say with certainty that the 'vertical links' in the Russian Federation have been reestablished but the problem is as before with the lack of 'horizontal links'. Transborder cooperation on the whole and borderland cooperation in particular are forms of such 'horizontal' links.

Transborder cooperation is part of the general practice of the state's international cooperation, but it can be considered as an economic mechanism using external resources for the achievement of the goals of regional development formulated in the national strategy.

Transborder trade is a type of international trade exchange implemented by enterprises and organizations of borderland regions of neighbouring states on the

basis of a local agreement on trade and payment. This type of trade cannot refer, on the whole, to the category of classical reciprocal trade because the mechanism of borderland trade is based on the leading principle that the trade must promote socio-economic development of neighbouring territories (regions) of two states and implies the establishment of special favourable regimes for implementation, but a classical reciprocal trade is not related to such an aim. The question of the benefit provision of transborder trade is the most relevant and acute issue.

The search for a necessary equilibrium between the stimuli of the borderland trade, on the one hand, and the creation of the system preventing the misuse of these benefits, on the other hand, is a complicated task in the legal meaning. Transborder trade takes place, as a rule, on the basis of the international agreements of the Russian Federation with the neighbouring foreign states, envisaging the granting of a special regime for an external trade of services and goods. This regime develops exclusively for the satisfaction of local needs in goods and services produced in the limits of the corresponding borderland territories and meant for the consumption by actual persons who have a permanent residence on these territories and by legal entities localized on those territories. This special favourable regime is not spread to other foreign states or groups of foreign states with which Russia has international agreements envisaging the granting of the regime not less favourable than the regime given to any other foreign state.

The practice of economic development of borderland regions of Russia is the evidence that the effects, insignificant for the economy of the country, on the whole, can play a very important role for the development of borderland regions.

#### **4. Transborder cooperation and new borders of Russia**

Nowadays, Russia has a process that can be called a self-identification of borders. By this term we mean the perception and qualitative evaluation of borders. While analyzing the practice of modern regional identification on the bordering territories it is not difficult to notice two tendencies. One of them is the tendency of universalization of social processes the consequence of which is the formation of common forms of social organization irrespective of the space-territorial characteristics. The other tendency evidently prevailing in modern Russia is the formation of unstable many-factor borders. The impact of some socio-economic processes leads to the re-configuration of factual borders.

In a number of cases it is better to use for analysis two different concepts: *'economic space of the state'* and *'economic space of the national economy'*.

The *first* one means territory including many economic units and connections between them and inhabited localities, industrial enterprises, economically developed areas, recreation areas, transport and engineering networks and so on. The necessary signs (and conditions) of a single economic space of Russia (as of any other state) are common economic legislature, unified customs space and the functioning of common infrastructure systems (energy system, transport,

communication and so on). The most important part of a single economic space is national (Russia's) markets of goods and services, labour and capital.

In the *second* case the economic space is the market environment trespassing state borders or simply not coinciding with the space of a state territory completely.

Any border can have several age periods. The oldest one related to Russia and Europe is a Russia-Estonia border (the first mentioning about the border between Novgorod and the Livonian Confederation of Teutonic Knights along the river Narova (Narva) dates back to the end of the 13<sup>th</sup> century) and is young from the point of view of the ability of determining economic and political life.

The process of transformation of old economic and political relations has been going on for 15 years in Russia, but the most durable former transborder connections have survived in spite of the rather firm border and customs regime. Now the social space along the Russia-Estonian border has gradually re-structured. The restructuring usually depends on the shifting of the border line in the course of history.

Moreover, perhaps, it is possible that with the liquidation of borders on the territory of the greater part of Europe, the function of the security measures and border control and a border as a system feature will become purely symbolic. In this case the border will become similar to the majority of inner boundaries defined not so much by geographical categories but the feeling of ethnocultural belonging.

As far as the Russia-Estonia border is concerned, we can say that in the area of the city Narva (Estonian republic) Russia's economic space is larger and goes beyond Russia's state border. On the other hand, the scale and character of transborder economic connections in the area of the town Blagoveschensk (Russia-China's border) enables us to suggest that the economic space of China is larger and continues over the border.

Transborder trade is an important way of developing trade and the economic relations of neighbouring states. This can be illustrated by the city Suifenhe in which in 1992, with the permission of China's State Council, for the first time in China, an inner open trade port on the borderland with Russia was created. Transborder trade became the main factor of the prosperity of the economy of Suifenhe. From a small town with no more than 10 thousand people it turned into a city with 100 thousand people and with an annual volume of external trade of 1.2 milliard<sup>7</sup> dollars which is described as the phenomenon of Suifenhe or the 'model of Suifenhe'. For several years on end the volume of borderland trade between this city and Russia has constituted 1/3 of the trade volume of the province of Heilongjiang (Borderland Trade with the Russian Federation, 11.01.07).

Thus, transborder cooperation in Russia at the turn of the century transformed into the working mechanism of regional development, having certain financial and organizational resources which need management.

Nowadays, Russia is, in fact, offered to adopt a certain type of economic behaviour if it wants to join the WTO and to get involved in the world economy.

---

<sup>7</sup> Russian 1.2 milliard is equal to 1,200,000,000 (ed.).

Under these conditions the realization of the advantages of competition in some regions (both absolute and relative) naturally leads to a localized and one-dimensional character of economic growth of the new territories and the degradation of old traditionally industrial regions. It is a faulty policy of development because in this case the state creates a new economic mode of life for the newly developed territories, connected not with the regional economic interests and not even with the satisfaction of the strategic demands of its own state, but with the demands of external economic trade connections.

The reaction of the economic space of Russia upon the transformational impact of the world economy is not evident yet, but many tendencies can be discerned and predicted. Borderland territories, being a part of the country, absorb the general tendencies of economic and social development and show the specificity of their geoeconomic position.

The economic problems of the borderland can be divided into *the general and particular*.

The general problems are those which are typical for the whole country. Among the particular issues to be solved the most important is the problem of stimulation of economic growth in borderland subjects of the Russian Federation. The unique instrument for the solution of local borderland problems is transborder cooperation. In order to develop and to use it in a proper way the federal centre, subjects of the Federation and organs of local self-government, must find (or sometimes create) the functioning legal and organizational (or other) conditions for it.

The main subjects of the transborder policy of economic cooperation have become the regions that are the subjects of the Russian Federation. The management regulation, as a function of regional policy, is directed at the whole complex of territorial-economic connections with the neighbouring partner.

In Russian there are diverging tendencies influencing borderland economic cooperation. On the one hand, there is an aspiration of the state to achieve additional economic advantages and the growth of competitive possibilities of the region by opening external borders, but, on the other hand, there is a necessity to preserve (restore) the integrity of the economic space of the state. Moreover, the most important task is to avoid regional economic autarky which can be caused by the domination of external links over the economic links with regions of its own state.

The thesis that, under the conditions of market relations, the region is a self-regulating system and does not need external management is an evident exaggeration of the self-sufficiency of the economy of any, even the richest in resources, subject of the Russian Federation.

The regional economic subsystems of Russia are characterized by a different inertia to that of the regional economic systems of foreign bordering states. As a result the transformation in Russia is differentiated in space.

Not only inner but external factors cause complication and differentiation of the economic space. The heterogeneity of economic space which existed at the beginning of the process increases due to a multitude of spheres of transformation

and the different directions of these transformations. As a result of a quick transfer of the real responsibility and 'virtual power' to the regions a great number of specific models for the introduction of market reforms have appeared in the country.

The next factor stimulating the development of transborder cooperation is the specificity of the market reforms in Russia. As it has already been noted, the reforms have been going on under the unique differences of the conditions of reproduction. First of all, the regions are provided with natural resources unequally and differ greatly according to climatic conditions as well. Secondly, there is a significant difference in demographic processes, the character and systems of the population distribution and the quality of labour resources. It can be observed especially in the economic and scientific-technical potential of regions. The market economy inevitably starts using the rent of the geographical position. The regions artificially developed under the conditions of a planned economy as transport transit centres, today transfer their functions to the territories where these functions can be implemented with the greatest economic efficiency.

The possibility of the development of transborder cooperation becomes an additional chance for Russia's regions. Of course, transborder (borderland) cooperation cannot provide the equalization of the levels of borderland subjects of the Federation. However, under the conditions of the decrease of the role of the state and the reduction of possibilities for the state to give orders and redistribute the resources, regional borderland cooperation can help to overcome the negative consequences of the transition period. It is connected with the fact that the new borders which appeared after the collapse of the USSR go, in the majority cases, along the territories with economic lacunas located between the capital and regional centres of new states.

The modern practice of regional development that does not take into account the possibilities of transborder cooperation, leads to the situation that inhabitants of the bordering territories experience difficulties and limitations connected with the mobility of people, goods and services. Besides, located in the periphery of the country the population experience a traditional absence of attention to them from the central power and become the hostages of regional economic disproportions. As for solving their problems by themselves the regions do not have either the means or ability. As a result, many regions turn into depressive, backward territories. Meanwhile both the integrity of the state and many other things depend on the level of development of these territories and the quality of life. At present the majority of bordering regions instead of being a factor of development of transborder links are an obstacle for the integration of Russia into the world economy.

All diverse models of regional development, based on inclusion of transborder cooperation, can be reduced to *four basic scenarios*.

In the *first scenario* the result of transborder cooperation is the subjugation of the territory to the influence of the world economic market and external competition practice. This scenario arises in the case of a combination of external

management influence with minimal possibilities of regional powers in the management of regional development. If we use economic indicators it can be expressed in minimal indicators of regional Gross Domestic Product (GDP) related to high indicators of exports and imports. The standard of living of the population can be rather high. A similar situation arises in the enclaves and semi-enclaves of the subjects of the Russian Federation who are surrounded by economically more developed neighbours. In different branches of industry development is launched via the spheres of services, transport, logistics and road management. This variant envisages the possibility of qualitative structural shifts in the economy of the region with corresponding changes of its specialization under the influence of international division of labour. This variant can be applied to:

- borderland and seaside regions, the economies of which are developing and will be developing due to the impact of international division of labour;
- far away regions and Kaliningrad enclave.

Here, by means of an additional attraction of material, financial and labour resources of interested countries, new large industrial and agro-industrial complexes can be created on the basis of corresponding economic and natural resources. These attracted resources will promote further the complex development of productive forces and development of the territory, widening and deepening the participation of Russia's regions in the international division of labour. The development of this variant is connected with the necessity to study the prospective division of labour, place and role of a region in the national economic complex and in the system of external economic links. The first variant implies the possibility of essential structural shifts in the economy of the region including those conditioned by the impact of the agreements signed with the foreign countries on the large scale cooperative supply and joint construction of economic units on the territory of the region which will be engaged in future exports. In this case an external economic factor is considered as one of the most important for the formation of the industrial branch and territorial structure of the economy of the region.

In the framework of the *second* scenario, transborder cooperation, as a factor of regional development, also has an important though not a defining significance for the economic development of the region (the subject of the Russian Federation). Moreover, the practice of transborder economic cooperation in this case, as a rule, is based on the traditional division of labour of the Soviet time. Such a scheme is typical for Russia-Ukraine and Russia-Belarus borderlands. Cooperative links combined with classical borderland trade are based on the disparity of prices in the mutual trade. In this case the most typical is the Far Eastern region. It is possible to distinguish a number of economic effects experienced from transborder cooperation in this case. Transborder trade enables local producers to reach better economic indices by using economy of scale of production, to raise profitability and so on. In its turn, the growth of real profits in the zone of integration leads to the additional growth of economic activities. Due to the abolition of administrative, technical and legal barriers the unification of local markets takes place which puts an end to their isolation. Transborder trade inevitably leads to

mutual investments. The practice of economic development of the Primorsky Krai provides evidence that even such a criticized form of borderland cooperation as a 'shuttle' trade helped to avoid large scale crises in 1990-1992 and 1998. And finally transborder cooperation furthers regional economic integration and influences the external trade policy of the countries that can become participants in the integration bloc. In the second scenario of the development of transborder cooperation there is also a significant impact of external economic factors on the reformation of economic structures in the region. It is possible that the tendencies and peculiarities of the regional development which took place in the previous period of economic development will be preserved as well as the character of transborder cooperation on the basis of traditional forms of external trade and the formation of export resources. But in the economy of the region, qualitative structural shifts connected with the development of export branches and the creation of new large economic units are not expected.

The *third* scenario envisages only the formal presence of transborder economic links. In this case, typical examples are the regions which have been traditionally isolated economically and geographically (the borderland of Siberia), and also the territories which previously had intensive transport and trade routes, but which are not used for some reason. It refers to the Pskov region (Pskov oblast). Here, due to both regional and federal reasons the barrier quality of the border is an obstacle for the development of external links. For the economically weak peripheral subjects of the Russian Federation such an economic quality of the border becomes the obstacle in the creation of balanced regional development. On the other hand, the barrier function of the border preserves the regional economic complex from radical restructuring in the interests of the external management centre.

The *fourth* scenario is connected with the Republic of Karelia. Karelia's variant gives one more model which describes the growth of economic development as a long term tendency of the structural transformation of the economy.

The premises for transborder economic cooperation are the division of the functions of the state government between different levels of power, the development of international cooperation and the necessity to strengthen the socio-economic environment in the bordering regions of the Russian Federation.

The possible instruments of transborder cooperation in the Russian Federation are the following:

- development of special zones of transborder cooperation;
- regional target programmes of transborder cooperation;
- coordination of concrete tax, budget, customs, border and other measures.

The likelihood of a region's participation in the transborder cooperation is better evaluated according to:

1. The degree of participation of the region in the external economic affairs of the country, especially in exports.

2. The geographic and transport-economic position of the region in relation to the main units which are engaged in freight turnover. The indicators of transport costs per unit (by railway, by road network and by the pipe network connecting the centres of production and consumption in Russia and abroad) are very important in this case.
3. The specificity of present and prospective industrial-territorial structure of the region.
4. The evaluation of the economic effectiveness of the variants of development taking into consideration the international division of labour (with the analysis of direct and indirect effects of the external economic connections of the region and the effects upon the particular branch of industry related to the external factors).

## **Conclusion**

The declared targets of the development of the Russian Federation can be implemented only after recognizing globalization as a moving force of world development. The continuing general course of the country for integration into the world economy and cooperation with the West presupposes the intensive development of transborder and borderland cooperation. Nowadays the contact function of the borders of the Russian Federation has been more dynamic.

The increasing tendency of the interdependence of domestic and external policies is accompanied by the integration of the economies of neighbouring countries. The observed increase of the permeability of borders and the sharp growth and intensity of the volumes of capital, information, services and human resources flows make transborder cooperation an issue of current relevance.

The development of the Russian Federation depends also on participation in the international division of labour. However, its impact is more evident in the capital and raw material regions and to a lesser degree in the regions along the borders. And only recently (1999-2008) has a new tendency started to develop in the Russian Federation. It is the transborder and borderland cooperation of Russia with, first of all, the neighbouring European states that is one of the most important factors of socio-economic dynamics.

The borders of the state, besides an official dimension, have also the so-called 'zones of influence' overstretching, in some cases, beyond the legally fixed line of the border in one direction or the other and in different spheres.

# **The Main Principles and Directions of Reforms in the Electrical Power Industry in Russia and Other Countries of the World**

**Sergei ALEXANDROV**

## **Introduction**

This paper systemizes the main premises, principles and contents of the reforms in the electrical power industry in Russia through the prism of earlier reforms in the monopolistic sectors of Western economies. The reformation processes in electrical power industry undertaken recently in different countries can be considered as part of a global tendency towards liberalization in the state sector of the economy. The policy of the state which is the key agent in electrical power industry forms and directs the development of new market forces in the country.

Three directions of state policy can be defined as fundamental for the construction of a restructuring model in the industry of natural monopoly: (1) a greater involvement of the private sector in the management of the industry, (2) the liberalization of economic relations and (3) vertical integration modification.

The state determines the development of electrical power systems by changing the organizational models (structures) of interacting agents. This paper begins with a presentation of the main factors of change in the market of electrical power industry as a former natural monopoly and considers the possibilities for the introduction of differentiated state regulation. The second part of the paper develops the analysis of the three above-mentioned directions of state policy for creating a restructuring model and finally in the conclusion the basic features of the reformation process in electrical power industry are summed up.

## **1. Evolution of the market form in electrical power industry**

### ***1.1. Factors for changing the type of market in electrical power generation industry***

Up to the end of the 1970s in economic theory and practice there was a prevailing conception that electrical power industry was a natural monopoly because only in the framework of the whole country it was possible to achieve maximal effect from the scale of production, i.e. minimization of mean and marginal costs of electrical power generation. The whole material complex of the industry historically belonged to the state (or was nationalized after World War II) in the majority of countries.

There are several specific features of electrical power industry going back to the history of its formation and development: it was developed under the control of the state in the large majority of countries. These features are the following:

1. Systemic development, connected with the historic process of the formation of big systems of power and energy industries (Melentyev, Makarov, 1983: 13). The development of these systems is determined mainly by the need of national economies in a certain amount of electrical and thermal energy with the observance of necessary security and reliability requirements, the quality of energy supply, and also ecological security (Glukhov, Barykin, 2003: 28).

2. Activities of big power and energy systems, which perform not only a servicing function but also considerably influence the development and location of productive forces.

3. The priority of reliability of electricity supply to the population and the economy over the economic interests of companies engaged in the industry.

4. High social and economic cost of the functional failure of power systems (Primorsky Krai of Russia<sup>1</sup> at the end of the 1990s up to 2001; California in 2000-2001, North Eastern part of the USA and a part of Canada - August 2003; Italy in September 2003, Moscow region of Russia in May 2005).

5. High capital consumption of the industry and, consequently, the necessity of additional guarantees make the state participate in the projects directly or in other forms in order to attract financial means in the capital market: state's participation reduces risks of investment in the projects.

6. Strong inertia in the industry's development which is the consequence of high capital consumption. Academics L.A. Melentyev and A.A. Makarov claim that the factors of inertia and high capital consumption push the horizon of the development of this industry a further 20-30 years (Melentyev, Makarov, 1983: 61).

7. The necessity of creation and support of reserves in the production and transportation of energy resources.

8. Conduction of ecological monitoring and controlling of the industry. The objects of electrical power industry (for example a nuclear power plant) are a source of additional risk for the population and the environment.

9. Exceptional importance of electrical power supply especially in isolated and distant regions of the country.

For all these reasons the preservation of the regulating function of the state is the objective necessity under any extent of liberalization of economic relations in electrical power industry, especially, in the situations of failure of the market (direct tariff formation for the grid companies, control over market abuses, technological and ecological control, strategic investment planning).

The methodology of research of the optimal strategies of management for such complex production systems as electrical power industry is based on the systems

---

<sup>1</sup> Russia is a federation and consists of 83 federal subjects. Primorsky Krai, a federal subject, is the extreme South Eastern region of Russia bordered by China and North Korea (ed.)

approach, implying a complex analysis of input and output characteristics of electrical power industry as a whole by combining the analysis with the consideration of the general development of the economy of the country and world economy.

Here are some facts from the history of Russia: the first practical application of the systems approach in electrical power industry of Russia is considered to be the GOELRO<sup>2</sup> plan of electrification of the whole country which was worked out by a group of outstanding engineers headed by G. Krzhizhanovsky after the October revolution in Russia in 1917. The systems approach was widely used in the years of state planning of the economy of the Soviet Union. Through this a noticeable progress in the balanced development of electrical power industry was achieved and the Unified Energy System was created.

The theoretical basis of new energy policy in the world has become Neoliberalism<sup>3</sup> insisting on the limitation of state interference and regulation in economy, promoting wide scale privatization of state property, and promoting the advantages of privatized infrastructure functioning in competitive conditions and reducing the burden on the state budget, optimizing business processes and realizing new projects comparatively more quickly and effectively (Stober, 2002: 229-231).

So the *first* catalyst of new attitude to the state energy monopoly became the conviction that the state monopoly was not interested in improving productivity and the quality of services. The systematic liberalization of economic relations in electrical power industry and privatization of power enterprises of different specialization was implemented in 1980-2000 in the developed countries (the USA, EU, Australia, etc.) and in a number of developing countries (Argentina, Chile, etc.), and also in post-socialist countries (Poland, Hungary, Ukraine, Kazakhstan, etc.). The reformation programmes of the industry have been developed in China, Japan, South Korea, etc.

*Secondly*, the successful experiment of deregulation in such industries as gas, telecommunication, civil aviation, railway networks, bank sector in the 1970-1980s in the USA, Great Britain and Japan has also speeded up the reformation of electrical power industry.

*Thirdly*, the improved international relations in the late 1980s connected with the end of the political confrontation, allowed withdrawal from state management in certain spheres of economy which national security policy required.

*Fourthly*, the economy of scale which was the main argument in favour of the structure of natural monopoly in this industry has lost its current relevance. The introduction of new technologies (less powerful steam-gas stations of combined heat and power type with a high coefficient of productivity, wind energy and solar energy stations, technologies of photovoltaic panels and thermoelectric devices,

---

<sup>2</sup> GOELRO is the transliteration of the Russian abbreviation for ‘State Commission for Electrification of Russia’. It was initiated and supervised by the first Soviet leader Vladimir Lenin (see more in Editor’s Notes).

<sup>3</sup> L.von Mises, F.Hayek, M.Friedman, A.Laffer, R.Coase, etc.

etc.) has allowed small and middle-sized electrical power stations to become rather competitive relative to big-sized plants and companies. It has lowered the investment threshold for access into the generation sector and marked the beginning of distributed generation. It can be illustrated by the fact that the unit cost of power capacity (\$/MW) of modern gas-steam plants of combined heat and power type of 50-200 MW is comparable in real terms with the unit cost of typical for the 1980s power plants with steam turbines with the capacity of 1,000 MW (Hunt, Shuttleworth, 1998: 4; Chernukhin, Puzin, 1985: 92).

*Fifthly*, the accumulation of capital and realization of security measures at the power plants allowed power companies to be more independent in financial and maintenance issues.

*Sixthly*, in a number of countries privatization of electrical power industry has created an additional source of income for the state budget and helped to avoid debts accumulated by unprofitable companies.

*Seventhly*, the processes of liberalization turned out to be closely connected with the processes of globalization: formation of transnational companies, regional integration (EU, NAFTA, Mercosur) and policies of the World Bank and European Bank for Reconstruction and Development (EBRD) which in many cases lobbied for the restructuring of monopolies and reducing state expenses.

*Eighthly*, necessity for diversification of portfolio of primary energy resources (especially in the period of oil crises in the 1970s) enhanced interest in the development of power stations of renewable energy resources and other new technologies.

Regarding the starting position of electrical power industry of Russia at the beginning of restructuring in 1999 the following can be stated: the structural frame of electrical power industry of Russia constituted more than 700 power plants with a capacity of 216 GW, centralized system of high-power transmission lines (220 kV and higher) covering the whole territory of the country (except the Far East and Far North), the system of distribution networks (110 kV and lower) and the centres of energy consumption.

The main production funds in electrical power industry of Russia concentrated in:

- the holding company RAO UES<sup>4</sup>, where the controlling number of shares (in 2008 it was 52%) belonged to the state (72% of all electric output of the country) until the company ceased to exist in July 2008 as a legal entity due to further reorganization of the power industry;
- State RosEnergAtom<sup>5</sup>, which had 10 Nuclear Power Stations (11% of electrical power of the country);

---

<sup>4</sup> UES means Unified Energy System of Russia; on 1 July 2008, RAO 'UES of Russia' terminated its operations (the official website of RAO UES: <http://www.rao-ees.ru>, August 2008) (ed.).

<sup>5</sup> On 19 January 2007 Russian Parliament adopted the law about the formation of AtomEnergProm - a 100% state owned holding company for all Russian civil nuclear industry,

- a number of smaller independent companies.

The profits of all companies were regulated via tariff established by the Federal Energy Commission (since 2004 by the Federal Tariff Service<sup>6</sup>).

The restructuring of electrical power industry was instigated by certain technological indicators which showed that Russian companies were falling behind the analogous companies in developed countries. It was decided to create incentives to increase the efficiency of power companies and attract more investments to this sector of economy. The need for huge investments estimated by the Head of RAO UES A.Chubais served as an explanation for the privatization reforms in the industry.

The First Deputy Director of the Institute of Problems of Natural Monopolies in Russia B.Nigmatulin states that the increase of power generation according to Rosstat (Federal Service of State Statistics of Russia<sup>7</sup>) of electrical power industry in Russia constituted 2% and the rise of consumption 2.4% in 2007. He claims that the rate of 4.1% of annual growth for the next years predicted by the Head of RAO UES Anatoly Chubais is not quite correct (the total production was 1.016 trillion kilowatt-hours in Russia in 2007).

Thus according to Chubais this requires approximately 3.5 GW of new additional capacities. The investment plans of RAO UES and RosEnergAtom envisage the demand for 8.4 GW of new capacities after 2010 and after 2014-2015 - 14.5 GW. However Nigmatulin argues that due to the present situation with the work force and industries in Russia such a rise of demand cannot be expected or satisfied (Nigmatulin, 2008).

As a part of reforms in the industry, RAO UES, a state monopoly, was reorganized in two stages. The first stage was connected with WHC-5 and TGC-5 leaving the RAO UES. They have issued additional shares which allowed them to attract strategic investors to participate in their authorized capitals with the government having a blocking shareholding (RAO UES, 2008).

The second stage envisages the return of the state's control over reorganized industry according to the reorganization plan: high-voltage transmission grids pass to the Federal Grid Company (with the share of the state of 75%), distribution grids transformed into interregional distribution grid companies (11 IDGCs combined under a holding company) with the share of the state of more than 50%, the functions and assets of regional dispatch administrations transferred to the System Operator (100% state-owned).

Generation assets are consolidated into interregional companies of two types; generation companies of the wholesale market (wholesale generation companies - WGCs, which are power plants specializing mainly in electric power generation; six on the basis of thermal plants and one on the basis of hydrogeneration assets -

---

including RosEnergAtom, the nuclear fuel producer and supplier TVEL, the uranium trader Techsnabexport (Tenex) and nuclear facilities constructor AtomStroyExport (ed.).

<sup>6</sup> Official website of Federal Tariff Service in Russia <http://www.fstrf.ru/eng> (ed.).

<sup>7</sup> Official website of Rosstat <http://www.gks.ru/> (ed.).

RusHydro) and 14 territorial generation companies (TGCs) which comprise predominately combined heat and power plants producing both heat and electricity (all of them with less than 50% of the Russian Federation-owned share). Many generation companies, sales companies and repair works have already been privatized. The exceptions are nuclear power stations, the Far East Generation Company and isolated AO-Energo companies, which remain under full state control (RAO UES, 2008).

Nowadays, according to the GENI (Global Energy Network Institute) Russia's electrical power industry includes 440 thermal and hydropower plants and 30 nuclear power plants; a total capacity of 203 GW; thermal power plants (oil-, natural gas-, and coal-fired) account for 68% of Russia's generation capacity (138 GW), hydropower plants account for 21.5% (44 GW). The Russian electricity fuel mix remains mainly dependent on natural gas (Global Energy Network Institute, 2008).

### *1.2. Structuring electrical power industry in order to introduce differentiated types of markets*

According to the Energy Strategy of Russia it is possible to define the following main principles which determine the target structure of deregulated electrical power industry (Energy Strategy of Russia, 2003: 5<sup>8</sup>):

1. Complete and reliable electricity supply for the population at prices which will encourage people to economize on electricity;

2. The reduction of unit cost on the use of energy resources due to a more rational consumption, introduction of energy saving technologies and equipment and reduction of losses in the production, transmission and distribution processes. In the framework of this reform a special cost-effective business structure is supposed to be created which will minimize the costs (consequently, prices) in each sector of electrical power industry (Gwartney, 2003: 536).

3. It is important to create increased financial stability in the energy sector. Under the restructuring of the industry it is necessary to avoid an excessive fragmentation of business processes. For example, generation companies must be united to a degree which will provide their maximal operational, investing and technological stability and effectiveness without violating the anti-monopoly law.

4. Minimization of technogenic impact on the environment by adopting economic incentives for improvement and implementation of new production technologies, transmission, distribution and consumption.

Figure 1 illustrates the schematic presentation of monopolistic and competing sectors (agents) under restructuring of electrical power industry for the implementation of above-mentioned principles.

It is well known that any branch of industry can generally contain both a market of perfect competition and a market of imperfect competition. The principal

---

<sup>8</sup> Energy Strategy document of 2003 sets up energy policy of Russia for the period up to 2020.

difference between them is the degree of control over the prices. In the perfect competition control over prices is impossible because the sellers work in the conditions of absolute elastic demand dependent on the price, which in the electrical power industry is rare.

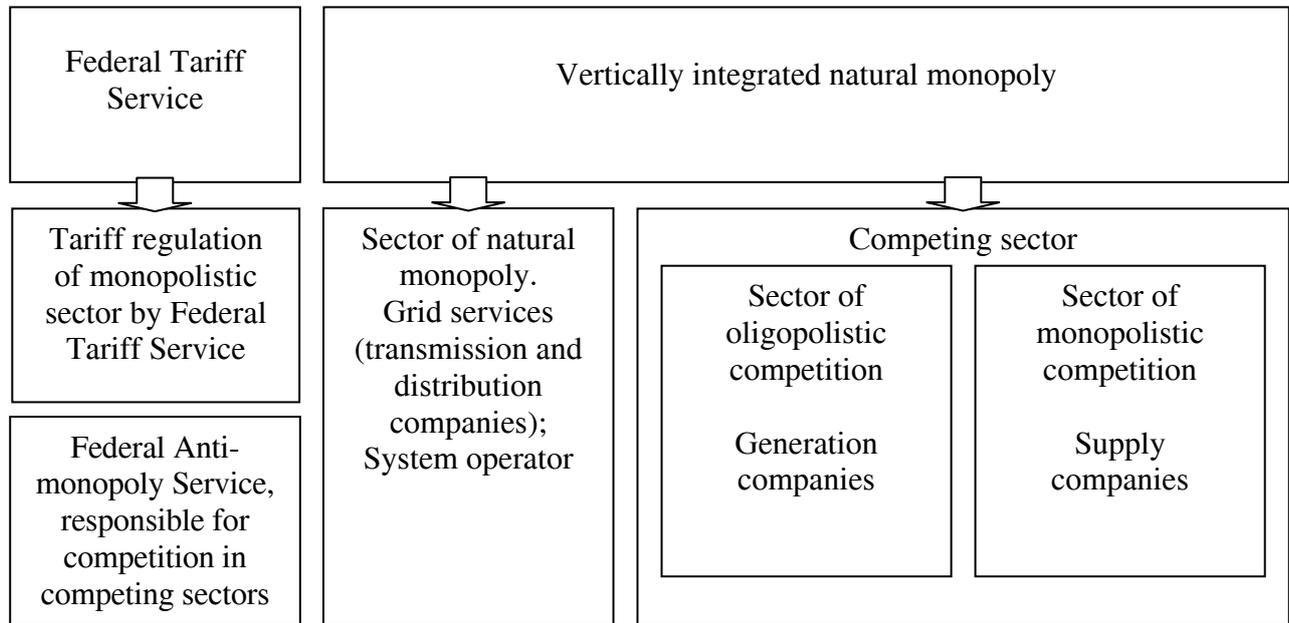


Figure 1. The scheme of main subjects under reformation of electrical power industry.

In the upper part there is the industry before reforms;  
below – the targeted state; on the left – Federal Tariff Service of Russia<sup>9</sup>.

The degree of control in different models of imperfect competition also varies. The monopoly which can be exposed by the domineering position of a producer is characterized by the greatest level of control exercised by the producer (more exactly by a regulating agency) over prices.

Grid services in electrical power industry should be characterized as a natural monopoly of infrastructure due to an economy of scales and other reasons. The population receives unique electric power transmission and distribution services which is economically irrational to double. Therefore, under this lack of choice these services must be physically and price available to the population.

Russia has a unique unified power grid of a huge size and it is used in seven time zones for transmission of energy from one region to another. It has been calculated that if not unified the country would need additional 15 GW capacity.

<sup>9</sup> Made on the basis of Kraft, 2004; RAO UES, 2006.

Organizational and legal forms of *natural monopoly* in electrical power industry in Russia are the following:

- the unified company for transportation of electrical energy (220 kV and higher) 'Federal Grid Company';
- the Holding of regional distribution companies (below 220 kV);
- the company which is the System Operator, responsible for the adjustment of the operating schedule of generation and consumption taking into account the variation of energy demand among regions.

The profits of all companies at present are formed on the basis of tariffs established by the state regulating agency 'Federal Tariff Service'. The state control over the operation and development of companies is provided by the increase of the state share via authorized capital up to 75%. Till July 2008 the state was an indirect owner of all these companies via the holding company RAO UES having the controlling number of shares (52%).

In the *oligopolistic market* the supply side is provided by a few big producers, each of them is able to influence the prices of goods and services offered by their competitors. Any decision of an oligopolist about prices and volumes of output will have a direct impact upon the position of the competitors, and he can expect a feedback reaction from them. Thus, the profit of every producer depends not only on the consumers' response but also on the actions of his competitors. That is why the oligopolistic producer restrains price reductions, and prices, in general, are stable.

The power generation market in the majority of countries is an oligopoly because the demand for electrical power can be satisfied by a few producers or determined by the presence of 2-4 companies whose price policy defines prices for the whole market. So, in Germany it is RWE, E.ON, EnBW, in Sweden - Vattenfall Europe; in Great Britain - RWE Innogy, E.ON.UK (PowerGen), British Energy; in France - EDF and in Italy - Enel.

In 2007 in Russia there were more than 20 generating companies: Territorial Generating Company №№ 1-14 (TGC), Wholesale Generating Company №№ 1-6 (WGC<sup>10</sup>), Wholesale Generating Company 'RusHydro' with a capacity of 3 to 20 GW alongside the generating companies of the state concern 'RosEnergoAtom'<sup>11</sup> (23 GW). Nevertheless, it is worth pointing out that the direct price competition between the main three groups of companies (WGC, TGC, nuclear stations) was restricted by the following:

- thermal combined cycle power stations (included in TGC) and nuclear power stations have the priority according to the Federal Law on Electrical Power Industry<sup>12</sup>;
- the output of hydrostations (included into RusHydro and some TGC) is determined by the residual demand which remains after the use of combined

---

<sup>10</sup> 'OGC' in Russian.

<sup>11</sup> It started functioning in 1992 (ed.).

<sup>12</sup> Federal Law №35.

heat and power plants and nuclear power plants and the necessity of preservation of capacity reserve for the peak demand may even lessen their output;

- the thermal stations of WGC and TGC either located in one region or being linked by a network system can enter into the direct price competition when they are concentrating on pure electricity production, though such periods are limited mainly by summer time.

Thus, the conditions of the formation of capacity balance in Russia and also the fact that in a separate region there are not more than 2-3 generating companies (not taking into account the isolated regions of the Extreme North) reveal an *oligopolistic type of the market of electrical power generation*.

According to the plan of restructuring the electrical power industry, the majority of WGCs and TGCs have been/will be privatized, and wholesale deals will be executed through the commodity exchange by 2011. Many subtleties connected with the free formation of prices in this market and the abilities of the company to make price estimates for the mid-term period and also the questions of regulation by the state are still to be defined.

The third type of market is the *market of monopolistic competition* (different from a perfect competition) which presupposes a wide use of non-price competition (advertisement, design, service, maintenance, etc). Usually it is connected with the differentiation of products in the monopolistic competition market. It does not, of course, take place in electrical power industry with its highly standardized set of services. However, the *sector of supply companies* in Russia is the closest to the market of monopolistic competition because it preserves the access barriers: affiliation, licensing of activities, inertia of consumers. Moreover, the majority of regional supply companies are under the trust management of TGCs. It is doubtful that these companies having no strong material basis can preserve their financial stability under the conditions of independence and self-reliance.

It must be emphasized that in respect of Russia's supply companies the basic principle is the principle of gradual privatization. These companies are interesting for the participants of both local and international markets which can be illustrated by the acquisition of 49.5% of Russian RusEnergobyt by the Italian ENEL in 2006. ENEL, which is present in the Russian market as part of the RusEnergobyt partnership, and the North-Western thermo-power plant formulated a proposal to take part in privatization of the Russian electrical power sector (Russian News and Information Agency Novosti, 12.03.2007).

On the other hand, Russia may repeat the West European reform scenario when, in the end, the supply companies were acquired by the grid and generation companies restoring, to some degree, the conditions of vertical integration.

The competing factors in the target model of electrical power industry are possible in the market of such imperfect competition as *oligopolistic and monopolistic* (i.e. *generation and supply* correspondingly). Grid companies and grid operator, providing unique network service and demonstrating the effect of scale continue

functioning in the conditions of operational and price regulation by the state. These are basic requirements for the formation of the industry's structures implying elements of the liberalization of economic relations.

## **2. The directions of state policy concerning the restructuring of electrical power industry**

State policy measures aimed at restructuring electrical power industry and other natural monopoly industries include three main directions:

- 1) enlarging the private sector in the management of the industry;
- 2) liberalizing economic relations in the industry;
- 3) weakening vertical integration in the industry.

As it can be seen in Figure 2, the farther the model of electrical power industry is from the axes origin, the less there is a direct state interference in the economy and the more competition it implies.

I will further describe in detail each highlighted direction of state policy defining the organizational model (structure) of electrical power industry in transition from planned economy to market economy.

### ***2.1. The direction 'enlarging the private sector in the management of the industry'***

The enlargement of the private sector in the management of the industry includes the complex of three key groups of possible measures conducted by the state or municipality playing the role of industry agents:

- (1) change of the degree of public ownership;
- (2) public-private partnership (PPP);
- (3) transfer of state property into the private sector.

It should be noted, from the very beginning, that the main direction of reformation of electrical power industry in Russia is not privatization but an issue of shares for share-holders and delegation of the management to the private sector preserving a state or municipality property. The proportion of countries using the procedure of privatization and countries practising the transfer of management to private companies is, approximately 2:5 (Varnavsky, 2003: 29-32).

#### ***(1) The increase of accountability to the public.***

The increase of *accountability to the public* in Russia should be understood as the change of organizational and/or legal form of unitary state enterprise: issuing shares (corporatization) which obligates the formation of publicly available forms of accountability, annual reports and the system of executive, expert and control bodies, etc. On the other hand, commercialization implies the introduction of a system of indicators of efficiency and the forms of reward to the management.

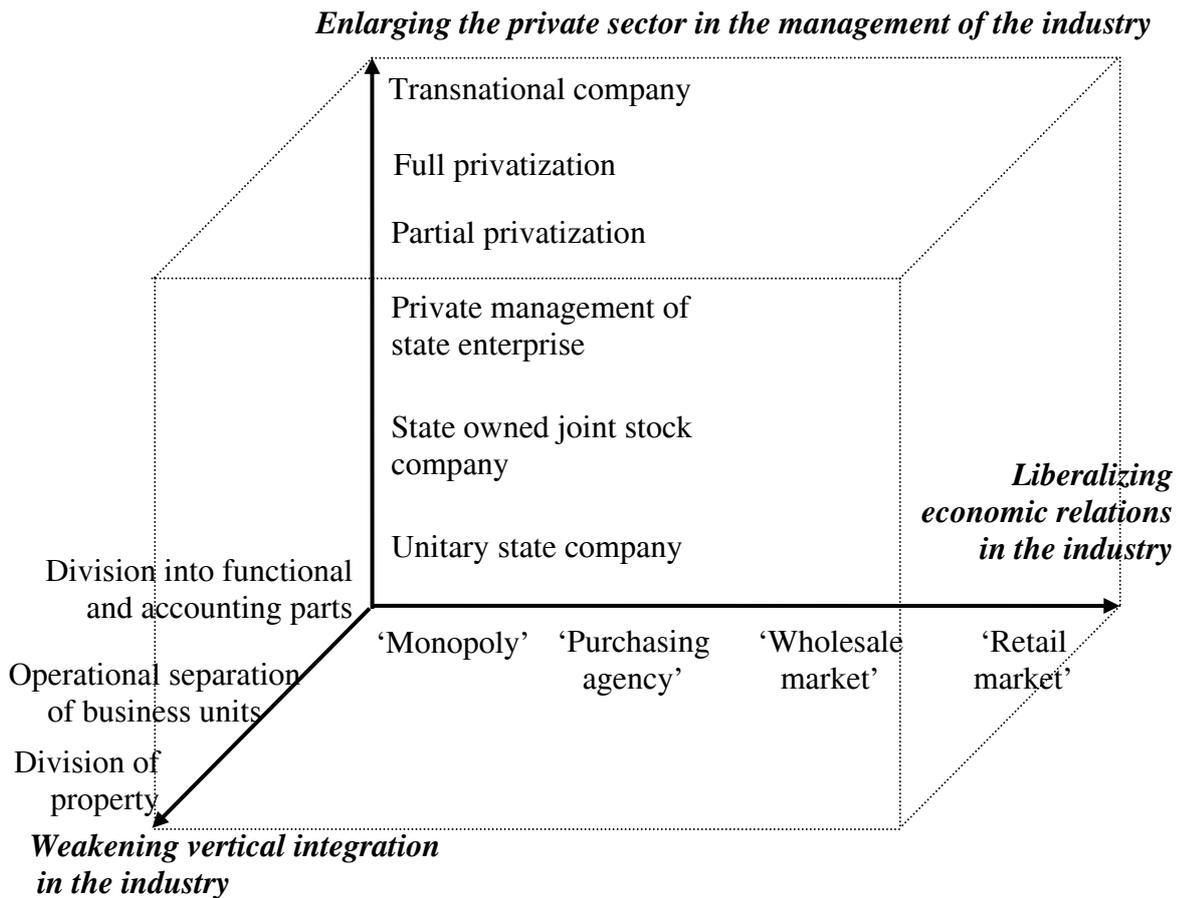


Figure 2. The directions of state policy concerning the restructuring of electrical power industry<sup>13</sup>.

There are three axes of the cube marked as arrows showing the directions of restructuring of electrical power industry. The arrow going up shows the direction named ‘Enlarging the private sector in the management of the industry’. On the left there is the direction ‘Weakening vertical integration in the industry’. On the right there is the direction named ‘Liberalizing economic relations in the industry’. The origin of these three arrows in the middle of Figure 2 denotes the least degree of competition, the greatest degree of state interference and the greatest degree of intensity of vertical integration. Each arrow has markings showing the stages of restructuring. The farthest point on each arrow from the crossing point of axes denotes the most degree of competition, the least degree of state interference and the most degree of disintegration of the vertical chain.

*(2) Public-Private Partnership.*

The means of the transfer of responsibility for electricity supply from the state/ municipality organs to private companies is a signed contract for giving or receiving services, with reward depending on the results of work.

<sup>13</sup>The chart is based on Evdokimov, 2003: 52-83; Hunt, Shuttleworth, 1996; ILO, 1999; RAO UES, 2006.

The other organization may be responsible for the building of the constructions and acquiring resources necessary for the provision of services. The state or municipal body in turn guarantees the provision of economic profit to the contractor, for example, return on capital investment within a certain period of time in exchange for the transfer of the completed construction into the property of the state.

The main advantages of such a contract for the state and municipal bodies are:

- the transfer of responsibility to the specialist who has necessary resources and knowledge;
- the transfer of the burden of investments costs;
- the transfer of technological, commercial, operational and financial risks;
- the acquisition of the finished object into their property after provision of economic profit to the private investor.

The totality of relations within such a category of civil-legal agreements is called 'Public-Private Partnership (PPP)'. In Russia it is a new and legally weak direction which has developed over the last 3-5 years due to the Federal Law on the Basic Regulation of Tariffs for Organization of Public Utility Complex from 30.12.2004<sup>14</sup>; Federal Law on Concession Agreements from 21.07.2005<sup>15</sup> and the legislature initiative of the Federal subjects of the Russian Federation.

The most widely spread type of agreements of PPP is the agreement for *trust management, lease and concession*.

I want to give an example of *trust management* in Saint Petersburg: the North-Western combined cycle plant had trust management of the Russian-Italian joint venture Enel ESN Energo Ltd. for three years from 2004. According to the terms of this contract, the managing company finished the construction of the second part of the power station with a capacity of 450 MW. For that purpose the loans of 120 million US dollars via Enel were drawn which remained on the balance sheet of the station after the end of contract validity.

An example of a *lease contract* is the transfer of all 115 Boiler stations of the Petrograd district of Saint Petersburg to the 'PeterburgTeploEnergo' company (the subsidiary of 'Gasprom' company) for 25 years in 2004-2005. The 'PeterburgTeploEnergo' plans to modernize them completely for 5 years spending 4 milliard<sup>16</sup> roubles (about 170 million US dollars). The city will repay the leaseholder the payment for a lease and will reimburse all investment within 8 years by raising the tariff for heating energy (the heat supply is centralized in the city). More precisely, during the time necessary for the cost return for the project, 1/8 from the sum spent by the leaseholder for the previous period will be annually included into the tariff.

*Concession agreements* are the effective model of PPP and they are widely used in international practice. However this model was so new for Russia in 2007 that I could find these agreements only in the preliminary negotiation stage. For example, in Saint Petersburg they were discussing a project of the South-West

---

<sup>14</sup> Federal law № 210

<sup>15</sup> Federal law № 115

<sup>16</sup> Russian milliard is equal to one thousand millions (ed.).

combined cycle plant with electric capacity of 570 MW. The City Energy Commission in its turn was to establish tariffs on heating energy which would then help to return costs within 9 years and the concessioner would then return it to the city for some reward. The city authorities were going to guarantee the purchase of total output and to finance construction of power, heat and gas network infrastructure.

### (3) *Privatization.*

Another widely used mechanism of implementing market relations is privatization (complete or partial). The existing structure of ownership on the assets in any country before the restructuring of the electrical power industry defines the direction and rate of restructuring (Rappoport, 2003: 30, 37).

Thus, with the prevailing private and municipal property in electrical power industry in the USA and Germany, the state efforts were directed at functional division of enterprises as minimum, and as maximum at the establishment of a free access to the networks. Quite a different picture was observed in electrical power industry of the majority of countries in Western Europe, South America, Russia, Canada, Australia and New Zealand. Here there was a nationalized monopoly system in electrical power industry. It allowed a simpler process of restructuring because it didn't demand a coordination of the interests of other proprietors.

So, in these circumstances (but not exclusively to them) the reformation of economic units in the industry in these countries was mainly aimed at the division of the industry according to function.

There are many mechanisms for transferring companies into private property: private offer, public offer, restitution in the form of re-privatization, compensation, bankruptcy, a voucher privatization (experimented in Russia in early 1990s), management options, employee participation programmes, etc.

Russia is realizing the wide scale plan of privatization of generation and supply companies of electrical power industry. The main forms of planned privatization conceived for 2007-2008 were the initial public offerings and private sales, which are envisaged as funding for the investment plans of the electrical power companies. According to the industrial development plan in Russia it is estimated that 41 GW more will be introduced before 2011 (which is about 20% of the existing capacity). Measured by attracted money amounts the reform proved to be successful. Among key foreign investors that have acquired control stakes in the companies of power generation sector since 2007 there is Fortum (76% in TGC-10), E.ON (76% in WGC-4), Enel (56% in WGC-5<sup>17</sup>).

## *2.2. The direction 'weakening vertical integration in the industry'*

Electrical power industry is defined by five technological processes – (1) *power generation*, (2) *power transmission*, (3) *wholesale*, (4) *distribution to the end consumers* and (5) *electricity retail* (Figure 3).

According to the character of *integration* it is possible to distinguish two main models of electrical power industry in the world.

---

<sup>17</sup> or OGC-4 and OGC-5

The *first model* which can be designated as complex (industrial, technological) (Pfaffenberger, 1999: 26-30; Sokolov, 2004: 22-24; Yampolsky, 2003: 10) was realized in Russia, France, Germany, Italy and some other countries.

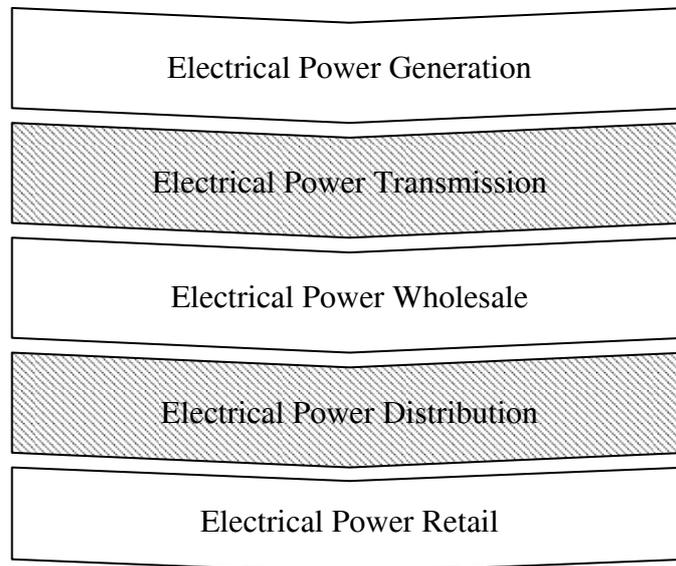


Figure 3. Generation-supply chain in electrical power industry (in the shaded parts there are regulated forms of activities)<sup>18</sup>.

In their markets several vertically integrated companies which managed all the elements of generation-supply chain and also the infrastructure of maintenance and repair work (as a rule they are former natural monopolies) had a dominant position. Competition can be improved by the reduction of the monopolization of the industry via the obligatory partial sales of generating capacities by monopolies or oligopolies and allowing others the access to the networks.

The *second* model of the organization of the industry is a specialized model. In this case separate parts of the generation-supply chain acquire independence in economic questions and form independent companies with differing structures of ownership. Such structures are typical for modern England, the USA, the Netherlands, Spain, Poland, Ukraine, Kazakhstan and other countries.

Let us come back to Figure 2 which schematizes the directions of restructuring. One of the directions concerns vertical integration in electrical industry (an arrow going to the left in Figure 2). Figure 2 shows gradual changes in the intensity of vertical integration: (1) functional and accounting division of the main elements of generation-supply chain, (2) the separation of operational business units and finally (3) the formation of separate companies with different ownership structures. Thus, these companies eventually turn into independent subjects of the industry with their own interests, rights and responsibilities.

<sup>18</sup> Based on the information from the RAO UES's official website <http://www.rao-ees.ru>, 2006-2008.

It should be noted that the fragmentation of power companies is a complicated and expensive process, which has positive and negative sides (Figure 4), that is why it demands a balanced approach from the state regulating body. At the beginning of the reformation it is advisable to use alternative methods which mitigate conflicts of interests among different divisions of the company (for example, by using separate systems of accounting). However, not all such agents' conflicts are dangerous: the provision of unified information flow in the deregulated industry and the effect of scale are still an essential compensation component. For example, the subdivisions of transmission networks include or cooperate closely with the System Operator (a controlling company managing technological work regimes of the components of electrical power industry) and the Sales Operator (controlling the organization of bills for electricity supply). The combination of supply and distribution or supply and generation functions in one company in practice is rather traditional for all models of organization of electrical power industry.

<b>For</b>	<b>Against</b>
The rise of operational and technological effectiveness as a result of competitive pressure	The decrease of operational and technological effectiveness under the artificial fragmentation of business processes
Motivation for innovation is stronger	The loss of coordination for mid-term and long-term planning
The reduction of costs on economic regulation under market price formation and competition	A higher probability of failures in the system, especially with the background of high inertia in power industry
The avoidance of cross subsidy	The reduction of possibilities in risk management concerning the prices for fuel and electricity
The reduction of conglomerate discount up to the market value	The reduction of capacity reserves
The rise of operational flexibility due to a new choice of suppliers and buyers	The dependence of consumers and producers on the 'conscience' of supplying intermediary companies

Figure 4. Positive and negative sides of the destruction of the vertical integration chain in electrical power industry.<sup>19</sup>

Examining the contradictory nature of the destruction of the vertical integration of companies in electrical power industry, directed at the increase of competition in the industry, I want to highlight two key principles of state policy in this direction:

- on the corporative level the vertical integration must be limited only if it prevents the access of new competing players to the market;
- special attention must be drawn to the preservation of the integrity of information flows between technological links of industry with the help of the formation of the coordinating body responsible for the mid- and long-term planning in the industry (especially with reference to investment plans,

<sup>19</sup> Based on Porter (Porter, 2002: 361-386).

balances of power and capacities in separate regions and energy systems, plans of innovative development, etc).

### 2.3. The direction 'liberalizing economic relations in the industry'

Under liberalizing economic relations in the industry I understand increasing openness of the industry to competition including historical monopolies. Deregulation implies the decrease of state regulation in favour of regulative capacities of economic units themselves which can be related to the conception of liberalization.

The necessary part of liberalized industry is the changed (modernized) system of state regulation (the appearance of new laws and controlling bodies for regulating arising market relations (ILO, 1999).

Even in new conditions state policy will be a defining factor for the management of companies while working out their corporative strategies, as the Deloitte researchers demonstrate (the research was carried out for developed countries for the perspective period till 2010) (Deloitte, 2000).

Thus, in order to balance the rights and duties of the producers and consumers and to implement state regulation in the countries of deregulated industry, national organs of control for the market of electrical power are established (for example in the USA – FERC, in Great Britain – OFGEM). An analogous situation will be in the electrical power industry in Russia after the implementation of the programme of liberalization in 2011: even after the state withdrawing from the authorized capital of generation and supply companies, their activities will be regulated by the Federal Tariff Service (tariffs for households) and the Federal Antimonopoly Service (abuses in the market) as shown in Figure 1.

According to *the degree of liberalization* it is possible to distinguish four main models of organization of electrical power industry: (1) 'Monopoly', (2) 'Purchasing agency', (3) 'Competition in the wholesale market' and (4) 'Competition in the retail market'.

The first stage of liberalization of economic relations after (1) 'Monopoly' can be defined as (2) 'Purchasing agency', which is characterized by its intermediary position between competing generation companies for the place in the output balance, and competing supply companies buying according to the regulated tariffs.

The next stage of liberalization is denoted as (3) 'Competition in the wholesale market' which gives the right of choice to the wholesale companies.

And the next stage of liberalization is (4) 'Competition in the retail market' which includes a free choice of generation companies by a household and a small-sized enterprise. Of course, it is an abstract scheme which is seldom found in a real life.

Additionally, it should be pointed out that in any organizational model of industrial companies of transmission and distribution networks, and also the System Operator, there continue to be monopolistic forms of activities due to the unique infrastructure of services which they provide. Nevertheless, they also feel the impact of competition because in a number of situations it happens that the

development of a grid is, in fact, the result of an alternative decision about investment in building a local power station, for example.

A kind of transition from the ‘Purchasing agency’ to the partial ‘Competition in the wholesale market’ could be observed after 1997 in Russia.

Since October 2006 in the connection with changes in the Requirements for Wholesale Market the gradual order of wholesale liberalization was established:

- every year the shares of output will be growing at the commodity exchange managed by the Administrator of Trade System (ATS). It was 5% at the beginning of 2007 and will be 100% (minus budget consumers) by 2011. In July 2008 it was 15% and by the end of 2008 the Administrator of Trade System will start selling up to 25% (REC, 2008<sup>20</sup>). Furthermore, all will be sold immediately at the ATS;
- accordingly the share of bilateral contracts between generation and supply companies for regulated tariffs will reduce;
- the supply of electricity to the population according to the fully regulated tariffs will not change till the period of 2012-2015.

As it has been shown in the article, the market of electrical power industry is a designed market: the rules of it are aimed at supporting and developing competition and also at creating a favourable investment climate. The state cannot avoid its obligations just by the transfer of full powers to the market, because market forces (both agents and structures) are formed by its own regulatory policy.

## **Conclusion**

1. The process of reformation in electrical power industry can be considered as the phenomenon of global tendency connected with liberalization of state sectors of economy in general in the world. The main reasons for launching reforms are the following: the increase of political influence of the Neoliberal school since the 1980s; the détente in the international arena; the policy of international organizations and integrated groupings; the necessity of energy diversification (especially after oil shocks); the successful experience of deregulation of other utilities and infrastructures; the technology break-throughs in autonomous energy supply.

2. In the framework of these reforms a special structure is formed which minimizes costs (and consequently, prices) for the production of all sectors of power industry. Services supplied by the grid infrastructure must belong to a regulated natural monopoly, but a competing sector can include generation and supply companies.

3. The reform policy of the state as one of the key agents in the electrical power industry consists of three main directions: the enlargement of the private sector, introduction of market competition and the change of intensity in vertical integration.

---

<sup>20</sup> Regional Energy Commission of Tomsk region (Tomskaya oblast).

4. The enlargement of private sector participation in the management of this branch contains such possibilities as the increase of companies' accountability to the public; the public-private partnership (PPP); the substitution of state property by private property.

5. According to the degree of liberalization of economic relations in electrical power industry there are four models of industrial organization: a natural monopoly, a purchasing agency, competition in the wholesale market and competition in the retail market. They differ by the degree of competing relations in their production-supply chain.

6. The character of integration determines two main types of model in electrical power industry: complex and specialized. In the first case vertically integrated companies predominate and liberalization is reached by the reduction in monopolization of the market via obligatory sales of some generating capacities by companies, and also by providing all competitors with the right to use the networks. In the second case separate production links - supply chain are formed by independent companies with different property structures.

7. In modern Russia there is a necessity of state regulated reforms in the electrical power sector as a system and it is conditioned by the following main factors: absence of material incentives for raising the effectiveness of output, transmission, distribution and consumption of electricity and heat; the economically and environmentally outdated equipment; the lack of investment infrastructure.

8. After the dissolution of RAO UES as a vertically integrated monopoly, its tasks were assigned to the newly established Ministry of Energy. The expectation is that it will become the centre of decision making in such areas as further liberalization of the generation sector, regulation of network companies (which remain fully state-controlled), the establishment of consumption standards. The issues of the absence of long-term gas supply contracts for generators, low ecological standards, unclear approving procedures for building power stations will be on the agenda in the near future.

9. The ultimate aim of giving people the choice of electricity supplier is set for the period after 2012-2015 when nearly 100% wholesale volumes will be marketed at non-regulated prices.

10. Any model (structure) of the organization in electrical power industry is not static; it can and must develop and perfect itself responding to a wide set of external and internal factors.

In this paper I wanted to show that the development of relations between agents brings about structures which are formed and developed, first of all, as a result of the regulating power of the state.

## Editor's Notes

**CADET Bernard**

***Globalization, Uncertainty and Decision Making: Cognition Also Matters***

The Paradox of St. Petersburg relates to probability theory and decision theory. It is based on a particular theoretical lottery game using a random variable with infinite expected value.

Bayes' theorem is an elementary proposition of probability theory. It provides a way of updating in the light of new information one's prior probability that a proposition is true.

Gestalt psychology is a theory of mind and brain according to which the operational principle of the brain is holistic, parallel, and analogous, with self-organizing tendencies; or that the whole is different than the sum of its parts.

'Logic Theorist' is a computer programme written in 1955 by A. Newell, H. Simon and J.C. Shaw. It was the first programme deliberately engineered to imitate the problem-solving skills of human beings and was called 'the first artificial intelligence programme'.

A schema (pl. schemata), in psychology and cognitive science, is a mental structure that represents some aspect of the world. Schema theory was developed by R.C. Anderson, but the term *schema* was first used by Jean Piaget in 1926. People use *schemata* to organize current knowledge and provide a framework for future understanding.

**BRANSKY Vladimir, POZHARSKY Svyatoslav**

***Globalization and Synergistic Philosophy of History***

Synergetics is an interdisciplinary science explaining the formation and self-organization of patterns and structures in open systems. Self-organization implies a system consisting of many nonlinearly interacting subsystems depending from the external control parameters (environment, energy). The self-organization of patterns in many different systems (in physics, chemistry, biology and social systems) is explained as the order based on 'self-enslaving' principle: the dynamics of fast-relaxing (stable) modes is completely determined by the 'slow' dynamics of only a few 'order-parameters' (unstable modes) according to Hermann Haken. The order parameters can be interpreted as the amplitudes of the

unstable modes determining the overall pattern. The increase of self-organization means a reduction of degrees of freedom of the whole system showing a new order (pattern-formation) which is now independent of details of interactions of subsystems. Social inertia can be explained by it and at the same time the emerging new pattern can be explained as well. Conscious goals, free will, self-interest, choices, self-awareness prevent any predictive models or a 'natural self-organization' to be applied to human problems as it is possible in natural sciences.

Ilya Prigogine (1917-2003) was a Belgian physicist and Nobel Laureate chemist known for his work on dissipative structures and their role in thermodynamic systems far from equilibrium. Dissipative structure theory led him to the research in self-organizing systems. His work is regarded by many as a bridge between natural sciences and social sciences.

### ***SLANEVSKAYA Nina*** ***Moral Agency under Globalization***

Later GULAG began to be used to denote the entire penal labour system in the Soviet Union. There were criminals of all types in such camps but the Gulag system has become primarily known as a place for political prisoners and as a mechanism for repressing political opposition to the Soviet State.

Stalin was the General Secretary of the Communist Party of the Soviet Union's Central Committee from 1922 until his death in 1953.

Georgia borders the Black Sea between Turkey and Russia. It was a part of the Soviet Union before the 1991 breakup of the Soviet Union. In 1990, Georgia's Supreme Council cancelled the South-Ossetian autonomous region. Georgian was established as the country's principal language, meanwhile main Ossetian languages were Ossetian and Russian. After a violent conflict in 1991 when Georgian forces entered South Ossetia and about 2,000 people were killed, South Ossetia broke away from Georgia and gained *de facto* independence. But ethnic tension did not cease and it was decided to station Russian, Georgian and Ossetian peacekeepers in South Ossetia. In the 2006 South Ossetian independence referendum, full independence was supported by 99,88%, which confirmed the result of the 1992 referendum (<http://www.ossetia.ru/interview/eduard-kokoiti>; 16.09.2008). Both South Ossetia and Abkhazia, another region of Georgia, have run their own affairs without international recognition since the early 1990s. Fighting between Russia and Georgia started on 7 August 2008 after the Georgian military began an offensive to regain control over South Ossetia with heavy rocket and artillery fire and air strikes that ravaged the South Ossetian provincial capital, Tskhinvali. Russian forces subsequently launched a counter-attack and the conflict ended with pushing Georgian troops out of both South Ossetia and Abkhazia,

Russian destroying military bases on the Georgian territory and an EU-brokered ceasefire.

Brain implants electrically stimulate single neurons or group of neurons (biological neural networks) in the brain but this can be done only if the functional association of these neurons is well known. While successfully used to treat different dysfunctions of the brain after a stroke or other head injuries the implants can cause some behavioural side effects: hallucinations, cognitive dysfunction, hypersexuality, depression, compulsive gambling and so on. Some consider brain implants as the possibility for correcting behaviour in future, others fear that implants may be used for mind control, i.e. for changing human perception of reality.

**SMIDA Ali**

***Public Decision Maker's Pathologies and Remedies of a Prospective Approach***

Thomas Kuhn puts forward the idea of the paradigm of *normal science*, when one thinks according to the existing paradigm in science and the paradigm of *revolutionary science* which is, in fact, a paradigmatic shift which occurs when the old paradigm cannot explain some accumulated data and its long-held assumptions are to be overturned.

Holography is a technique which can be used to optically store, retrieve and process information. It allows the light scattered from an object to be recorded and later reconstructed. It appears as if the object is in the same position relative to the recording medium as it was when recorded. The image changes as the position and orientation of the viewing system changes in exactly the same way as if the object were still present.

Cartesianism is the name given to the philosophical doctrine (or school) of *Rene Descartes* (1596-1650), the famous French philosopher, also known as *Renatus Cartesius* (in Latin).

*Henry-Louis Bergson* was a French philosopher, influential in the first half of the 20<sup>th</sup> century.

**LAFAY Gérard**

***Globalization: What is Going on in Practice and How it is Explained Theoretically***

The nominal exchange rate ( $e$ ) is the price in domestic currency of one unit of a foreign currency. The real exchange rate ( $RER$ ) is defined as  $RER = e \left( \frac{P^*}{P} \right)$ , where

$P$  is the domestic price level and  $P^*$  the foreign price level.  $P$  and  $P^*$  must have the same arbitrary value in some chosen base year. Hence, in the base year,  $RER = e$ .

Gross Domestic Product is the total market value of all final goods and services produced on the territory of the country in a given period of time measuring all the output disregarding the firms' nationality. In contrast Gross National Product focuses on who owns the production measuring only the output of the national firms on the territory of the country and outside the country. GNP adds net foreign investment income compared to GDP.

Inflation is a rise in general level of prices of goods and services over time. But sometimes it is used to denote a rise in the prices of a specific set of goods or services. Inflation is measured by calculating the percentage rate of change of a price index, which is called the inflation rate.

### ***OLSZEWSKI Leon***

#### ***Central Europe in the Globalized World of the 21st Century***

The concept and name of the Washington Consensus were first presented in 1989 by John Williamson, an economist from the Institute for International Economics based in Washington, D.C. to describe a set of ten economic policy prescriptions that he considered to constitute a 'standard' reform package: fiscal policy discipline, redirection of public spending, tax reform, interest rates determined by market, competitive exchange rates, trade liberalization, liberalization of inward foreign direct investment, privatization of state enterprises, deregulation, legal security for property rights.

Transfer pricing refers to the pricing of contributions (assets, tangible and intangible, services, and funds) transferred within an organization. Since the prices are set within an organization (i.e. controlled), the typical market mechanisms does not work. The choice of the transfer price will affect the allocation of the total profit among the parts of the company. This is a major concern for fiscal authorities who worry that multinational entities may set transfer prices on cross-border transactions to reduce taxable profits in their jurisdiction.

### ***MIROPOLSKY Dmitry***

#### ***Global Hierarchy and Centralization of the Economy of Russia***

Marginal product is the additional product derived from additional units of labour. By that definition, when marginal product increases, total product increases as well. Here is an example of decreasing marginal product: I have only 3 computers (fixed input) and 3 workers (variable input) who produce 6 outputs. I hire one

more worker and now I have 8 outputs. The marginal product of the fourth worker is 2 outputs (8 outputs – 6 outputs = 2 outputs). I hire again one more worker (now I have 5 workers altogether) but the output is 9 instead of 10 because there are only 3 computers and the workers have to wait their turn. The marginal product of the fifth worker is 1 output (9 outputs – 8 outputs = 1 output). I hire the sixth worker but the same 9 outputs are produced. There is no additional output. The marginal product of the last worker is 0 (9 outputs – 9 outputs = 0).

*Function* is a value which varies as another value varies, for example, in  $y = 5x$ ,  $y$  is a function of  $x$ , i.e. if  $x = 5$ , then  $y$  is 25.

*Marginal theory* in economics is the study of the effect of increasing a factor by one more unit (known as the marginal unit). For example, if a firm's production is increased by one unit, its costs will increase also; the increase in costs is called the marginal cost of production. Marginal theory is a central tool of microeconomics.

### ***GILINSKIY Yakov*** ***Deviance in Russia under Globalization***

The International Criminal Police Organization, known as Interpol and established in 1923, facilitates international police cooperation. European Police Office, known as Europol, is the European Union's criminal intelligence agency which became fully operational in 1999 according to the 1992 Maastricht Treaty (Treaty on European Union).

The Commonwealth of Independent States (CIS) is the alliance of former Soviet Republics, at present 12 republics (July, 2008): the Azerbaijan Republic, Republic of Armenia, Republic of Belarus, Georgia, Republic of Kazakhstan, Kyrgyz Republic, Republic of Moldova, Russian Federation, Republic of Tajikistan, Turkmenistan, Republic of Uzbekistan and Ukraine. On 8 December 1991 in Belarus, the leaders of the Republic of Belarus, Russian Federation and Ukraine signed the Agreement on establishment of the Commonwealth of Independent States (CIS) which, in fact, meant the dissolution of the Soviet Union. On December 21, 1991 in Alma-Ata the heads of 11 sovereign states (except the Baltic states and Georgia) signed the Protocol to this Agreement (Georgia joined the CIS in 1993). The CIS Executive Committee is in Minsk (Belarus), website: <http://cis.minsk.by>

*Troika* is a word of Russian origin meaning 'threesome' or 'triumvirate'. The history of the word goes back to a Russian vehicle, either a wheeled carriage or a sleigh, drawn by three horses abreast.

***DIDENKO Nelly, PETROVSKY Andrei***  
***Russia's Human Resources in Science in the Context of Globalization***

INTAS, the International Association for the promotion of co-operation with scientists from the New Independent States (NIS) of the former Soviet Union was established in 1993 by the European Community and like-minded countries as an international not-for-profit association under Belgian law, to promote scientific research activities in the NIS and scientific co-operation between scientists in these countries and the international scientific community.

***MEZHEVICH Nickolay***  
***Transborder Cooperation in Modern Russia as a Result of Globalization Challenges***

The history of international relations is often traced back to the Peace of Westphalia of 1648, where the modern state system was developed. The Peace of Westphalia encouraged the rise of the independent nation-states, the institutionalization of diplomacy and armies, and later, this Westphalian (European) system was exported further to America, Africa, and Asia via colonialism.

The Republic of Karelia, Kaliningrad oblast, Leningrad oblast, Smolensk oblast, Belgorod oblast, Khabarovsk krai - are the federal subjects of the Russian Federation. The federal subjects in the Russian Federations are the following: 21 republics, 46 oblasts, 9 krajs, 1 autonomous oblast, 4 autonomous okrugs and 2 federal cities (Moscow and St. Petersburg).

***ALEXANDROV Sergei***  
***The Main Principles and Directions of Reforms in the Electrical Power Industry in Russia and Other Countries of the World***

GOELRO is the transliteration of the Russian abbreviation for 'State Commission for Electrification of Russia'. It was initiated and supervised by the first Soviet leader Vladimir Lenin. The Plan envisaged a major restructuring of the Soviet economy based on total electrification of the country covering the period of 15 years and was fulfilled basically by 1931. It included the construction of a network of 30 regional power plants, among them 10 large hydroelectric power plants and numerous electric-powered large industrial enterprises.

## Synopsis of the Articles

**ALEXANDROV Sergei**

### ***The Main Principles and Directions of Reforms in the Electrical Power Industry in Russia and Other Countries of the World***

The author of the paper systemizes the main premises, principles and directions of the reforms in electrical power industry in Russia, which are aimed at establishing a more effective management of national energy resources. In the course of research it has been discovered that the process of reformation of electrical power industry abroad and in Russia can be considered as the world phenomenon of a *global tendency* towards liberalization of the state sector. This process has three key economic dimensions which define the model of restructuring of any naturally monopolistic branch: (i) the increased number of participants of private sector in the management of this branch, (ii) liberalization of economic relations, (iii) vertical integration modification. The paper presents the state as one of the *key agents* the regulating policy of which defines the development of *electrical power system* via changes in organization models (*structures*) of interacting agents.

**BRANSKY Vladimir, POZHARSKY Svyatoslav**

### ***Globalization and Synergistic Philosophy of History***

In this paper the authors connect the concept of globalization with the synergistic concept of self-organization which implies the process of interaction between social order and chaos. They draw attention to the creative power of chaos in the formation of new types of order (basically new *social structures*). The authors use their *Synergistic Model of Global Progress* which demonstrates the *tendency* of movement to a *global superattractor* passing the stages of bifurcation and attraction. The concept of a *dissipative structure* is used for the explanation of social phenomena under globalization. Globalization is understood as a natural historic process which finds the best explanation in the synergistic social theory of self-organization.

**CADET Bernard**

### ***Globalization, Uncertainty and Decision Making: Cognition Also Matters***

Though globalization is usually characterized by its economic results, it should be studied also as a cognitive activity of high level. The origin of globalization and its diffusion is the strategic answer to the management of complex issues of economy and development. The term 'globalization' has two meanings: either a result (new trends in world politics and economy) or a process (processing situations and things as a whole). The author claims that the result (the widely accepted

*'economic meaning' of globalization*) has been achieved not by chance but because traders and decision makers (*agents*) have had to process very *complex systems*, and that globalizing information (the second *'cognitive meaning' of globalization*) is the best and the only manner to reduce uncertainty having in mind decision making. So the economic meaning appears because the cognitive meaning has been implemented to construct decision making. The article focuses on the analysis of the relations between globalization, uncertainty and decision making in regards to their reciprocal implications distinguishing various strategies of cognitive globalization according to the ways of combining information and architectural elements of systems. *Cognitive globalization* reflects the *tendency* of an *agent* to use a *globalizing approach* when coming across *uncertainty under globalization*.

**DIDENKO Nelly, PETROVSKY Andrei**

***Russia's Human Resources in Science in the Context of Globalization***

The paper contains the analysis of human resources in science and the personnel potential of fundamental science in Saint Petersburg, North-West of Russia and Russia on the basis of the data of the state statistics and departmental statistics of the Russian Academy of Sciences. It examines the changes in personnel potential of fundamental science for the last ten years and gives a comparative economic, sociological and demographic analysis of the scientific cadre including a gender aspect. The analysis reveals interdependence between the development of Russia's *scientific community and the processes of globalization* which have caused certain changes in its *structure* and the development of *new tendencies* in the formation of the human capital in Russia: (i) the shrinking of the size of the scientific community in Russia, (ii) its stratification, (iii) scientists' migration to foreign countries, (iv) the ageing of personnel in science, (v) its feminization, (vi) the formation of new scientific standards, (vii) the formation of a new type of scientists. The authors also compare the methods of estimation of the intellectual capital in Russia and in the West. Correctly chosen indicators of an estimation of the intellectual capital is important for the analysis of grant proposals, assessment of the results of the supported projects and a future partner of the project. The paper analyzes the participation of St.Petersburg's scientists in international competitions and the work of the Russian Foundation for Basic Research (RFBR) which has organized both Russian competitions with foreign partners and its own on a regular basis since 1996.

**GILINSKIY Yakov**

***Deviance in Russia under Globalization***

In this article the author analyzes the phenomena of deviance (criminality, alcoholism, addiction to narcotics, trade in human beings, terrorism, etc.) in Russia under the conditions of globalization. The analysis enriches the theory by discovering the interdependences of the processes of globalization, inclusion and exclusion and the dynamics of the main phenomena of deviance. It discovers the

regularity of deviant phenomena in the globalizing world. The results of the studies can be used for improving social management considered by the author as a *system*. The author of the article arrives at the following conclusion: the process of globalization has caused an increase in such phenomena of deviance as organized crime, drug addiction, terrorism and human trafficking; the enlargement of the social base for deviance occurs at the expense of the '*excluded*' agents under globalization. There is a *tendency* of the growth of social economic inequality under globalization, which is one of the main factors of *increasing deviance*.

**LAFAY Gérard**

***Globalization: What is Going on in Practice and How it is Explained Theoretically***

The *economic globalization* noticed first in the 1980s has become quite clearly observed since the 1990s. The old international economy was marked by the regular progression of salaries due to the *system of the agreement between agents*: the compensatory role of trade unions and the social attitude of entrepreneurs. *Globalization* pushed forward by enterprises *destroyed this system* and has created such a situation that now these enterprises can independently decide where to localize their production capacities after comparing the favourability of conditions between national economies. From that point of view the real exchange rate plays an essential role because it permits comparison between salaries in the same monetary unit taking into consideration the labour force qualification. The evolution of consumption depends equally on the behavioural level of enterprises as far as the increase of salaries is concerned. It is also the rate of growth of the economy which can be higher when the real exchange rate is cheap and lower when it is too expensive. Globalization is supported by the current powerful theory of the neoclassical school which claims that it has renovated a liberal approach by constructing a beautiful model of general equilibrium. In fact, the theoretical fundamentals of this school are now being questioned, precisely by the globalization itself due to certain *tendencies in the four fields developing under globalization* such as: spatial, sectoral, temporal and conceptual.

**MEZHEVICH Nickolay**

***Transborder Cooperation in Modern Russia as a Result of Globalization Challenges***

*Under globalization transborder and borderland cooperation in Russia* is under the influence of two contradictory *tendencies*. On the one hand, there is the desire to integrate into such organizations of the globalizing world as the WTO but, on the other hand, there is uncertainty about Russia's position in Europe. Transborder cooperation in Russia develops, on the whole, in accordance with *world tendencies* such as the increasing permeability of borders and the integration processes, but it has also its own specificity based both on the unique climatic, geographical and demographic characteristics of the regions and on the theoretical approach to the

borders and regions dating back to the Soviet times and oriented at the isolationist policy of a region as a self-contained economic unit. The paper reveals 'zones of influence', which often do not coincide with the legally fixed line of the border. It also analyzes the difference between the *systems of European and Russian regionalisms*.

**MIROPOLSKY Dmitry**

***Global Hierarchy and Centralization of the Economy of Russia***

The aim of this paper is (i) to explain why there has been a long tradition of centralization in the Russian economy, (ii) to answer the question of how this *tendency of centralization* can be combined with the *globalizing market economy* based on the principle of decentralization. To achieve this aim the author has worked out a new model - *Double Sector Structural Model* (DSSM) for the analysis of *economic systems*. The advantage of the Double Sector Structural Model is in the following: (1) it allows the connection between concrete parameters of the material structure of the economy and the type of economic organization (market, planned economy, mixed); (2) the connection between the *material structure of the economy and organization of the economy* makes it possible to *model economic systems* with a various degree of decentralization-centralization and to study *the impact of decentralization-centralization upon material structure*. The analysis of Russia's economy is presented according to the following logic: material structure, autonomous centralization, global decentralization and changes of material structure.

**OLSZEWSKI Leon**

***Central Europe in the Globalized World of the 21st Century***

The last decade of the twentieth century has been a period of radical transformation of the Central and Eastern European Countries (CEECs). After the collapse of the communist system, the CEECs put a lot of effort into changing the property rights, mechanisms of economic regulation and institutions of the centralized economy. This article asserts that the two aspects of the *systemic changes* in the post communist countries playing the most important role in establishing the basis for market economy were: (i) acceptance of the International Monetary Fund and World Bank *structural adjustment conditions* (Washington consensus), and (ii) introduction of the European rules and regulations called 'aqui communautaire'. Although the general aspects of the transition were the same, *political and economic structures* developed in the CEECs varied from country to country, thus demonstrating the *tendency of a specific transformation policy of adjustment to global processes*. The author describes the transition process in four CEFTA countries: Poland, the Czech Republic, Slovakia and Hungary and investigates the effects of market stabilization in the first phase of the *systemic economic transformation*. The article identifies the primary role of trade relations within the European Union in the first phase of transformation and describes the impact of

political stabilization on the *economic institutional structures*. Regulation theory developed by the French Regulationist School forms the theoretical background for the analysis. The article highlights the necessity of a balanced economic and social transition in the context of *globalization*.

**SLANEVSKAYA Nina**

***Moral Agency under Globalization***

The paper considers the role of *moral agency* in the *social system* in the *global context*. The author claims that there is a *tendency of connecting the findings of cognitive neuroscience with ethical questions* ('*moral brain*') which is due to globalization because only neuroscience can produce the empirical evidence of a common human basis (*moral structure*) in moral thinking which is the prerequisite for the formation of common values (*moral agency*) necessary for furthering global interconnectedness and creating a global society (*global system*). Though the discoveries in cognitive neuroscience receive contradictory theoretical interpretations, the objectivity of moral thinking and certain moral values common to all is confirmed empirically. The globalizing world also needs philosophical explanation, which can be supplied by cosmopolitan ethics meant to supersede moral relativism. The author suggests a model of Generative Ethics based on Kant's moral philosophy for the formation of *global welfare society*.

**SMIDA Ali**

***Public Decision Maker's Pathologies and Remedies of a Prospective Approach***

Many observers consider the *system of public decision making* in France to be going through the crisis due to the gap between it and the real situation both in the country and in the world. Several factors seem to be responsible for this *tendency*. The public decision maker's references in France are still based on the centralized and welfare state. Thus, the French decision maker finds himself in the gap between the old paradigms (*structures*) and new paradigms ruling the present world and demanding the retreat of the state and the *globalization of ideas and markets*. The culture of centralization and the belief that the citizens must be protected by a welfare state are the main factors which shape the behaviour of a classical public decision maker and affect him in many ways. Such behaviour on the part of public decision makers is a source of the malfunctioning of public decision making in France. The author qualifies such a type of behaviour as pathological and suggests a prospective approach to improve the system of public decision making in France, and, first of all, to apply it to the *agents*, i.e. *public decision makers*, and then to the *structures* having new instruments for the formation of a *new system of public decision making in France*.

## Notes on the Contributors

**ALEXANDROV Sergei**, Ph.D. in Economics, since 2008 the Deputy Director of the Project Finance Department of Saving Banks of the Russian Federation, in 2002-2007 the Head of the Investment Department at the St. Petersburg company Lenenergo, also a lecturer at the St.Petersburg State University of Economics and Finance. His research field is the management of power, oil and gas enterprises and international portfolio management.

**BRANSKY Vladimir**, a Professor of St.Petersburg State University, the Department of Philosophy, has written more than 150 articles and 9 monographs. He specializes in the philosophical problems of globalization and synergistic philosophy of history. His recent monographs are *Social Synergistics and the Theory of Nations*, 2002; *Globalization and Synergistic Philosophy of History*, 2004; *Philosophy and Achmeology*, 2003, co-authored with S.Pozharsky.

**CADET Bernard**, PhD of René Descartes University, Paris 5, Sorbonne, is a Professor of Cognitive Psychology and the Research Director at Caen University in France. He is the author of more than 60 articles published in the national and international journals, and he is the author and co-author of several books. Among the recent books there are the following: *Psychologie Cognitive*, 1998; *Les décisions sous contraintes*, 2003; *La complexité: ses formes, ses traitements, ses effets*, 2005; *Psychologie du risque: identifier, évaluer, prévenir*, 2006.

**DIDENKO Nelly**, Ph.D in Technical Sciences, a Senior Researcher at the St.Petersburg Scientific Centre of the Academy of Sciences of the Russian Federation, the Coordinator of the Regional section of Euroscience in Russia, the Director of the St.Petersburg Centre of Promotion of Euroscience, is a member of the International Euroscience Governing Board. The field of research is mathematical modelling, the dynamic optimization of complex multiparameter processes, the sociology of science, social problems and conflict-solving.

**GILINSKIY Yakov** is a Professor of the St. Petersburg Institute of Law at the General Prosecutor's Office of the Russian Federation, the Head of the Department of Criminal Law at St.Petersburg State Teacher Training University, the Head of the Research Center for Deviance at the Institute of Sociology of Russia's Academy of Sciences and the Dean of the Department of Law at the Baltic University of Ecology, Politics and Law. He has more than 370 publications including 14 monographs, mainly in the fields of criminology and sociology of deviance and social control. More than 90 of them have been published in foreign

languages: English, Hungarian, Italian, German, Norwegian, Polish, French and others.

**LAFAY Gérard**, a Professor of Economics at the French University Panthéon-Assas Paris II, the Director of the Research Institute of International Economic Geostrategy, works also for the Centre for Perspective Studies and International Information (CEPII), where he has created CHELEM (Comptes Harmonisés sur les Echanges et l'Economie Mondiale). He is the author of numerous articles on global economy, international exchange and European problems. His latest publication is *Initiation à l'économie internationale*, 2006.

**MEZHEVICH Nickolay**, Ph.D in Economics, a Professor of St.Petersburg State University is also the Head of the Centre for Borderland and Transborder Cooperation Studies at the Institute of Regional Economics of the Academy of Sciences of the Russian Federation. His research interests include globalization, the economic and political development of Europe, the Baltic region and the theory of regionalism.

**MIROPOLSKY Dmitry**, a Professor of Economics, the Editor-in-chief of the University Journal of Economics and Finance, is the Head of the Department of Economic Theory at the St.Petersburg State University of Economics and Finance. His field of research is the philosophy of economy and the structural mechanisms of centralization and decentralization of economic systems. His latest monograph is *Economic Systems: Basic Principles of Functioning*, 2004.

**OLSZEWSKI Leon**, a Professor of Economics at the Department of Law, Administration and Economics at the University of Wrocław, Poland, is the Head of the Department of International Economics, the Director of the Doctoral School of the Willy Brandt Centre for German and European Studies at the University of Wrocław and the Editor of the journal '*Ekonomia*'. The main area of research is the economics of development, transition of post-communist countries and industrial policy. He teaches Microeconomics, Macroeconomics and International Economic Relations.

**POZHARSKY Svyatoslav**, a Professor of Psychology at the St.Petersburg Academy of Achmeology has more than 60 articles and 4 monographs. He is a co-author with V.Bransky of *Philosophy and Achmeology*, 2003 and *Globalization and Synergistic Philosophy of History*, 2004.

**PETROVSKY Andrei**, a Senior Researcher at the St.Petersburg Centre of the Academy of Sciences of the Russian Federation, an Associate Professor, Ph.D in Technical Sciences, the Official Representative of the Russian Foundation for Basic Research in the Northwestern region of the Russian Federation. The research field is sociology of science.

**SLANEVSKAYA Nina**, Ph.D. in Political Science, post-graduate education in Philology, the Research Director of CEDIMES-St.Petersburg within the French International Research Network of Institute CEDIMES, <http://www.cedimes.org/>, a member of Euroscience, is an Associate Professor at the St.Petersburg Institute of External Economic Relations, Economics and Law. She has 3 monographs and a number of articles. Her research field is the theory of international relations, sociology of knowledge, philosophy of mind, methods of political analysis and moral philosophy, <http://slanevskaya.narod.ru>.

**SMIDA Ali**, PhD in Management, PhD in Pharmacy, educated as an engineer at Grandes Ecoles Françaises and as a post graduate in Nuclear Physics, is a Professor at the French University Paris 13, where he is the Director of the Master's degree course *Management of Enterprises: Social and Sanitary Sectors*. He is also the President of the International and Interdisciplinary Association of Decision Making (A2ID) and the Editor-in-chief of the francophone edition of the *Journal of Social Management*. His field of research is anticipatory management, prospective and strategic decision making.

## Bibliography

- ABRIC, J.-C. (1994) *Pratiques sociales et représentations*, Presses Universitaires de France, Paris.
- ALAM, Asad, MURTHI, Mamta, YEMTSOV, Ruslan, MURRUGARRA, Edmundo, DUDWICK, Nora, HAMILTON, Ellen, TIONGSON Erwin (2005) *Growth, Poverty, and Inequality: Eastern Europe and the former Soviet Union*, The International Bank for Reconstruction and Development/The World Bank, Washington DC.
- ALBA, J.W., HASCHER, L. (1983) "Is Memory Schematic?" in *Psychological Bulletin*, 93: 203-231.
- ALL COUNTRIES of the WORLD (2005)/ ВСЕ СТРАНЫ МИРА (2005) *Население и общество*, № 93.
- ALLAKHVERDYAN (2003)/ АЛАХВЕРДЯН, А.Г. (2003) "Прекратился ли исход кадров науки?" в *Вестник Российской академии наук*, том.73, № 3: 205-209.
- AMIEL, M., BONNET, F., JACOBS, J. (1998) *Management de l'administration*, 2ème éd., De Boeck Université.
- ANDERSON, N.H. (1996) *A Functional Theory of Cognition*, Mahwah, N.J., Lawrence Erlbaum.
- ANDREWS, K.R. (1971) *The Corporate Strategy*, Irwin.
- ANSOFF, I. (1965) *Corporate Strategy. State of the Art of Making Plans*, Englewood Cliffs (N.J.), Prentice Hill.
- ARISTOTLE (2004) *Selections from Nicomachean Ethics, Politics*, the Collector's Library of Essential Thinkers, London.
- ARMENAKIS, A.A., HARRIS, S.G., MOSSHOLDER, K.W. (1993) "Creating Readiness for Organizational Change" in *Human Relations*, 46: 681-703.
- ARROW, K.J., HAHN, F.H. (1971) *General Competitive Analysis*, Holden Day, San Francisco.
- AVENIER, M.-J. (1993) *La stratégie "chemin faisant"*, Paris, Economica.
- BAILLY, J.-P. (2000) "Prospective, débat, décision publique" in *Futuribles*, n°235, octobre: 27-51.
- BALASSA, B. (1964) "The Purchasing Power Parity Doctrine, a Reappraisal", in *Journal of Political Economy*, December.
- BALCEROWICZ, Leszek (1995) *Socialism, Capitalism, Transformation*, Budapest, Central European University Press.
- BARCLAY, Gordon, TAVARES, Cynthia (2003) *International Comparisons of Criminal Justice Statistics 2001*, L., Home Office Statistical Bulletin, Issue 12/03.
- BAUMAN (2004)/ БАУМАН, Зигмунт (2004) *Глобализация: последствия для человека и общества*, М., Весь мир.
- BAYLIS, J., SMITH, S. (eds.) (1997) *The Globalization of World Politics*, Oxford University Press.
- BAZYLEV and SOBOLEVA (2005)/ БАЗЫЛЕВ, Н., СОБОЛЕВА, Н. (2005) "Экономическая глобализация и проблемы национальной безопасности" в *Проблемы современной экономики*, 2005, № 1/2: 99-106.
- BECK (2001)/ БЕК, Ульрих (2001) *Что такое глобализация?* М., Прогресс-Традиция.
- BECK, P. (1982) "La planification d'entreprise dans un univers incertain" in *Futuribles*, n°59, octobre: 31-48.

- BELKE, Angar, HEBLER, Martin (2002) "Towards a European Social Union: Impacts on Labor Markets in the Acceding Countries" in *Constitutional Political Economy*, No 4, December: 313-336.
- BELL (1999)/ БЕЛЛ, Даниэл (1999) *Грядущее постиндустриальное общество*, М., Academia.
- BELL, D.E. (1982) "Regret In Decision Making Under Uncertainty" in *Operations Research*, 30: 961-981.
- BENTHAM, Jeremy (1988) *The Principles of Morals and Legislation*, New York, Prometheus Books.
- BERGER and HUNTINGTON (2004)/ БЕРГЕР, Петер, ХАНТИНГТОН, Сэмюэль (ред.) (2004) *Многоликая глобализация: культурное разнообразие в современном мире*. М., Аспект-Пресс.
- BERGER, G. (1959) "L'attitude prospective" in *Le Monde en Devenir. Encyclopédie Française*, Société Nouvelle de l'Encyclopédie Française.
- BERGER, G. (1964) *Phénoménologie du temps*, Presses Universitaires de France, Paris.
- BERGER, G. (1967) "Sciences humaines et prévision" in Darcet J., *Etapas de la prospective*, Presses Universitaires de France, Paris.
- BERGER, J.O. (1980) *Statistical Decision Theory: Foundations, Concepts and Methods*, New York, Springer Verlag.
- BOGOYAVLENSKY (2002)/ БОГОЯВЛЕНСКИЙ, Дмитрий (2002) "Российские самоубийства и российские реформы" в *Социологические исследования*, № 5, 76-81.
- BORDERLAND TRADE with the Russian Federation (11.01.07)/ Приграничная торговля с РФ, <http://www.allchina.ru/rus/ruschina/blocks/3.htm>, 11.01.07.
- BORODKIN (2000)/ БОРОДКИН, Фридрих (2000) "Социальные эксклюзии" в *Социологический журнал*, № 3-4: 5-17.
- BOYER, R. (2007) La globalisation : mythes et réalités, <http://www.univ-evry.fr/labos/gersipa/actes/18/article2.html>.
- BOYER, Robert (1986) *Théorie de la régulation: une analyse critique*, La découverte.
- BOYER, Robert and SAILLARD, Yves (eds.) (1994) *La Théorie de la régulation. L'état des savoirs*, Paris. La découverte.
- BRANSKY and POZHARSKY (2004)/ БРАНСКИЙ, В.П., ПОЖАРСКИЙ, С.Д. (2004) *Глобализация и синергетический историзм (Синергетическая теория глобализации)*, СПб, Политехника.
- BRASSEUR, M. (2000) "De l'utopie des décisions individuelles: l'apport de la théorie de l'engagement" in *Actes du 2<sup>ème</sup> Colloque de l'A2ID, "Interactions entre décisions collectives et décisions individuelles"*, Troyes, France, décembre.
- BREHMER, B., JOYCE, C.R.B. (eds.) (1988) *Human Judgment: The S.J.T. View*, Amsterdam, North-Holland Elsevier.
- BRENTON, Paul and DI, Mauro Francesca (1999) "Economic Integration and FDI: An Empirical Analysis of Foreign Investment in the EU and in Central and Eastern Europe" in *Empirica*, vol. 26, No 2, June: 95-121.
- BREUSS, Fritz (1996) *The Impact of EMU on External Trade Relations with CEECs*, Research Institute for European Affairs University of Economics and Business Administration, Vienna.
- BROWNING, Christopher S., JOENNIEMI, Pertti, (2002) "The Identity of Kaliningrad: Russian, European or a Third Space?" in *Paper presented at the CEEISA/RISA/NISA Convention*, Moscow, Russia, June 22, 2002: 3-4.
- BRUNSWIK, E. (1956) *Perception and the Representative Design in Psychology*, Berkeley, University of California Press.
- BRYANT, C. (ed.) (2001) *Encyclopedia of Criminology and Deviant Behavior*, vol. I-IV, Brunner-Routledge, Taylor and Francis Group.
- BUZGALIN and KOLGANOV (2003)/ БУЗГАЛИН, Александр, КОЛГАНОВ, Андрей (2003) "Противоречия глобальной гегемонии капитала (к вопросу о содержании и

- противоречия так называемой “глобализации”)” в *Алтерглобализм. Теория и практика “антиглобалистского” движения*, (ред.) А. Бузгалин, М., УРСС: 8-29.
- CADET, B. (1995) “Information Context Structure and Risk Assessment” in *Work and Organizational Psychology: Contributions of the Nineties*, eds. J.M. Piero, F. Prieto, J.L. Mella and O. Luque, Erlbaum (U.K.), Taylor & Francis: 15-22.
- CADET, B. (2000) “Les irrationalités décisionnelles” in *Actes du 2<sup>ème</sup> Colloque de l’A2ID, “Interactions entre décisions collectives et décisions individuelles”*, Troyes, décembre.
- CADET, B. (2001) “Traitements de l’incertitude dans l’évaluation des risques” in *Bulletin de Psychologie*: 54, 357-367.
- CADET, B. (2006) “Cognitive Management of Uncertainty and New Decision Making Strategies in Business Organizations” in *Journal of Social Management*, 4, 1: 107-124.
- CAMILLERI, J. (1990) “Rethinking Sovereignty” in *Contending Sovereignties. Redefining Political Community*, edited by R.B. J. Walker and Saul H. Mendlevits, Lynne Rienner Publishers, Boulder, London: 35.
- CASSEL, G. (1928) *Post-war Monetary Stabilization*, Columbia University Press, New York.
- CASTELLS (2000)/ КАСТЕЛЬС, Мануэль (2000) *Информационная эпоха. Экономика, общество и культура*, М., ГУ ВШЭ.
- CHALIKOVA (1989)/ ЧАЛИКОВА, Виктория (1989) “Терроризм”, Ю. Афанасьев, М. Ферро (ред.) *50/50 Опыт словаря нового мышления*, М., Прогресс: 309-12.
- CHAMBERLIN, E. (1953) *The Theory of Monopolistic Competition*, PUF, Paris.
- ЧЕПУРЕНКО (2005)/ ЧЕПУРЕНКО, А.Ю (2005) *Воспроизводство научной элиты в России: роль зарубежных научных фондов (на примере фонда им. А. Гумбольдта)*, (ред.) А.Ю.Чепуренко, Л.М Гохберг, М., РСИСиНП.
- CHERENKOV (2004)/ ЧЕРЕНКОВ, Виталий (2004) “Условия и движущие силы глобализации международного бизнеса” в *Проблемы глобализации мировой экономики*, (ред.) Л.С.Тарасевич, А.И. Евдокимов, СПб., изд-во СПбГУЭФ: 40-60.
- CHERNUKHIN and PUZIN, (1985)/ ЧЕРНУХИН, А.А., ПУЗИН, Г.Н. (1985) *Эффективность энергетического производства*, Москва, Экономика.
- CHESHKOV (1999)/ ЧЕШКОВ, Марат (1999) “Глобализация: сущность, нынешняя фаза, перспективы” в *Проблемы глобализации, Pro et Contra*, т. 4, № 4: 114-27.
- CHESHKOV (1999)/ ЧЕШКОВ, Марат (1999) *Глобальный контекст постсоветской России: Очерки теории и методологии целостности*, М., МОНФ.
- CHOMSKY, Noam (1972) *Language and Mind*, Cambridge University Press: preface.
- CHRISTIE, Nils (2000) *Crime Control as Industry. Towards Gulags, Western Style*, the third edition, L.-NY., Routledge.
- CHRISTIE, Nils (2004) *A Suitable Amount of Crime*, L.-NY, Routledge.
- CHUMAKOV (2005)/ ЧУМАКОВ, А.Г. (2005) *Глобализация. Контуры целостного мира*, Москва, ТК Велби.
- CLARK, Colin (1957) *The Conditions of Economic Progress*, London, Macmillan & CO LTD, New York, ST Martin’s press.
- COCHRAN, M. (1999) *Normative Theory in International Relations. A Pragmatic Approach*, Cambridge University Press.
- COLLINS, A.M., LOFTUS, E.F. (1975) “A Spreading Activation Theory of Semantic Processing” in *Psychological Review*, 82: 407-428.
- CONNOLLY, T., ORDOÑEZ, L., COUGHLAN, R. (1997) “Regret and Responsibility in the Evaluation of Decision Outcomes” in *Organizational Behavior and Human Decision Processes*, 70: 73-85.
- CONSEIL ECONOMIQUE et SOCIAL (1998) “Prospective, débat, décision publique” in *Journal Officiel de la République Française*, 27 juillet.
- COOKSEY, R.W. (1996) *Judgement Analysis: Theory, Methods and Applications*, San Diego, Academic Press.

- CORY, G. (1999) *The Reciprocal Modular Brain in Economics and Politics: Shaping the Rational and Moral Basis of Organization, Exchange, and Choice*, London, Kluwer Academic/Plenum Publishers.
- COSTERMAN, J. (2001) *Les activités cognitives*. Bruxelles, De Boeck Université, 2<sup>ième</sup> édition.
- CRIME and DELINQUENCY (statistical review), 1991, 1996, 2001, 2006/ ПРЕСТУПНОСТЬ И ПРАВОНАРУШЕНИЯ, статистический сборник (1991, 1996, 2001, 2006), М., МВД РФ.
- CURRA, J. (2000) *The Relativity of Deviance*, SAGE Publications, Inc.
- CYERT, R., MARCH, J. (1970) *Processus de décision dans l'entreprise*, Dunod.
- DAWSON, M.R. (1998) *Understanding Cognitive Science*, Oxford, Blackwell.
- DE FINETTI, B. (1972) *Probability, Induction and Statistics: the Art of Guessing*, New York, Wiley.
- DEBREU, G. (1959) *Theory of Value*, Wiley, New York.
- DELOITTE (2000) *The Utility Executive's Field Guide to the Future. Key Drivers. 2000 - 2010. What they are, How they rate*, Deloitte Research.
- DELYAGIN (2000)/ ДЕЛЯГИН, Михаил (ред.) (2000) *Практика глобализации: игры и правила новой эпохи*, М., Экономика.
- DEZHINA (2005)/ ДЕЖИНА, И. (2005) *Вклад международных организаций и фондов в реформирование науки в России*, М., ИЭПП: 183.
- DICTIONNAIRE DE LA LANGUE FRANÇAISE (1998 ) Paris.
- DIDENKO, N., PETROVSKY, A. (2006) "Grants of Scientific Funds as a Parameter of an Estimation of the Intellectual Capital of Science of Saint Petersburg" in *The Proceedings of the 11-th International Conference "SPEECH AND COMPUTER" (SPECOM 2006)*, 25-29 June 2006, St. Petersburg, Russia: 583-586.
- DIDENKO, N., VORONTSOVA, O., ERMOLAEVA, E., VITMAN R., KUNITSYNA, E. (2005) "Women in Physics in Russia - Changes from 2002 to 2005" in *The Second IUPAP International Conference on Women in Physics*, Rio de Janeiro, Brazil, 23-25 May 2005, AIP Conference Proceedings, Volume 795, New York, Melville.
- DIDENKO, PETROVSKY and DIDENKO (2006)/ ДИДЕНКО, Н.И., ПЕТРОВСКИЙ, А.Б., ДИДЕНКО, И.А. (2006) "Гранты РФФИ и INTAS как механизмы сохранения и развития научного сообщества" в *Проблемы деятельности ученого и научных коллективов*, вып. XXII, СПб, Издательство Политехнического университета: 143-153.
- DIMITROVA, A. (2007) *Le 'jeu' entre le local et le global: dualité et dialectique de la globalisation*, <http://www.socio-anthropologie.revues.org/document.html?id=440>.
- DJANKOV, Simeon, HOEKMAN, Bernard (2000) "Foreign Investment and Productivity Growth in Czech Enterprises" in *World Bank Economic Review*, Vol. 14: 49-64.
- DLOUHÝ, Vladimír, MLÁDEK, Jan (1994) "Privatization and Corporate Control in the Czech Republic" in *Economic Policy*, Vol. 9, No. 19, December: 155-170.
- DOLGOVA (1999)/ ДОЛГОВА, Азалия (ред.) (1999) *Криминальная ситуация на рубеже веков в России*, М., Криминологическая ассоциация.
- DOLGOVA (2006)/ ДОЛГОВА, Азалия (ред.) (2006) *Тенденции преступности, ее организованности, закон и опыт борьбы с терроризмом*, М., Российская криминологическая ассоциация.
- DOWNES, D., ROCK, P. (1998) *Understanding Deviance. A Guide to the Sociology of Crime and Rule-Breaking*, the third edition, Oxford University Press.
- DUPUCH, Sébastien (2004) "Les investissements directs étrangers dans les nouveaux pays adhérents à l' Union Européenne" in *Revue Région et Développement*, No 20 : 45-64.
- EBRD (1999) *Transition Report 1999: Ten Years of Transition*, European Bank for Reconstruction and Development, London.
- EDWARDS, W. (1954) "The Theory of Decision Making" in *Psychological Bulletin*, 51: 380-417.
- EDWARDS, W. (1961) "Behavioral Decision Theory" in *Annual Review of Psychology*, 12: 473-498.

- EICKHOF, Norbert (2005) "Globalisierung und Gefahr eines Race to the bottom", in *Globalisierung und regionale Modernisierung von Wirtschaft und Politik*, Lohmar - Köln, Josef Eul Verlag: 1-23.
- ELLMAN, Michael (2000) "The Social Costs and Consequences of the Transformation Process" in *Economic Survey of Europe*, No 2/3, United Nations, New York Geneva: 125-140.
- EMERSON (2002)/ ЭМЕРСОН, М. (2002) *Слон и медведь. Европейский Союз, Россия и их ближнее зарубежье*, М., 2002 (Центр Европейских политических исследований, Брюссель).
- ENERGY STRATEGY of RUSSIA (2003)/ ЭНЕРГЕТИЧЕСКАЯ СТРАТЕГИЯ РОССИИ (2003) Энергетическая стратегия России на период до 2020 г., утверждена Распоряжением Правительства РФ от 28.08.2003, № 1234-р.
- EVANS, Graham and NEWNHAM, Jeffrey (1998) *The Penguin Dictionary of International Relations*, L.: 274.
- EVDOKIMOV (2003)/ ЕВДОКИМОВ, А.И. (2003) *Международные экономические отношения*, Москва, Москва, ТК Велби.
- EYSENCK, M.W. & KEANE, M.T. (1995) *Cognitive Psychology*, Hove (U.K.), Lawrence Erlbaum.
- FALLOUX, M. (1998) "Prospective et stratégie. Journal de bord de 15 ans de Conseil en management", in *Séminaire du Groupe Vision Paris-Caen*, IAE de Caen, 16 janvier.
- FEHL, Ulrich, DIETZ, Martin (2000) "Der deutsche Markt für Pkw - Reifen im Zeichen der Globalisierung" in *Wachstum, Strukturwandel und Wettbewerb*, Stuttgart, Lucius: 463-493.
- FEHR, Ernst and GACHTER, Simon (2000) "Fairness and Retaliation: the Economics of Reciprocity" in *Journal of Economic Perspectives*, 2000 (14), working paper No 40, Institute for Empirical Research in Economics, University of Zurich: 159-181.
- FEIGUINE, Grigori (2004) *Position und Perspektiven Russlands im Globalisierungsprozess*, Berlin, Logos Verlag.
- FERRO (1989)/ ФЕРРО, Марк (1989) "Терроризм" в Ю. Афанасьев, М. Ферро (ред.) *50/50 Опыт словаря нового мышления*, М., Прогресс: 313-17.
- FIJNAUT, Cyrille, PAOLI, Letizia (eds.) (2004) *Organized Crime in Europe. Concepts, Patterns, Control Policies in the European Union and Beyond*, Springer, vol. 1-4.
- FINER, C., NELLIS, M. (eds.) (1998) *Crime and Social Exclusion*, Blackwell Publishers Ltd.
- FLOWERS, Barry (2003) *Male Crime and Deviance. Exploring Its Causes, Dynamics and Nature*, Springfield (Ill.), Charles C. Thomas Publishers, Ltd.
- FODOR, J.A. (1983) *The Modularity of the Mind*, Cambridge, M.A., M.I.T. Press. Traduction française : *La modularité de l'esprit*, Paris, Editions de Minuit (1986).
- FOUCAULT (2002)/Мишель Фуко (2002) "О природе человека. Справедливость против власти. Беседа Хомского с Фуко" в *Интеллектуалы и власть: Избранные политические статьи, выступления и интервью, часть I*, Москва, Праксис: 81-148.
- FOURASTIE, Jean (1954) *Die grosse Hoffning des zwanzigsten Jahrhunderts*, Koln, Bund-Verlag GMBH.
- FREEMAN, W. (2005) "Brain Science on Ethics: the Neurobiology of Making Choices" in *Soul, Psyche, Brain: New Directions in the Study of Religion*, ed. Kelly Bulkeley, New York, Palgrave Macmillan: 262-290.
- FREUDENBERG, Michael, LEMOINE Françoise (1999) "Les pays d'Europe centrale et orientale dans la division du travail en Europe" in *Economie Internationale*, 1999, 4th Trimester No 80 : 3-35.
- FRIEDMAN, T.L. (2000) *The Lexus and Olive Tree: Understanding Globalization*, N.Y.
- FRISTON, K.J. (2005) "Models of Brain Function in Neuroimaging" in *Annual Review of Psychology*, 56: 57-87.
- GALAM, S. (2000) "Les réformes sont-elles impossibles?" in *Le Monde*, 28 mars: 18-19.
- GANOR, Boaz (2002) "Defining Terrorism: Is one Man's Terrorist another Man's Freedom Fighter?" *Police Practice & Research, An International Journal*, vol. 3, No 4: 287-304.

- GAZZANIGA, M. (2005) *The Ethical Brain*, New York, Dana Press.
- GAZZOLA, V., AZIZ-ZADEH, L., KEYSERS, C. (2006) "Empathy and the Somatotopic Auditory Mirror System in Humans" in *Current Biology* 16, September 19, 2006, Elsevier Ltd.: 1824-1829.
- GENELOT, D. (1992) *Manager dans la complexité. Réflexions à l'usage des dirigeants*, INSEP-Editions.
- GIDDENS (2005)/ ГИДДЕНС, Энтони (2005) *Социология*, М., Едиториал.
- GIDDENS, Anthony, PIERSON, Christopher (1998) *Conversations with Anthony Giddens. Making Sense of Modernity*, Stanford, California, Stanford University Press.
- GIDDENS, Antony (1990) *The Consequences of Modernity*, Cambridge, Polity Press.
- GIGERENZER, G. (2002) *Adaptive Thinking*, Oxford, Oxford University Press.
- GILBERT, M., KRAVIS, I. (1954) *An International Comparison of National Products and the Purchasing Power of Currencies*, OCECE, Paris.
- GILINSKIY (2002)/ ГИЛИНСКИЙ, Яков (2002) *Криминология*, Питер, С.-Петербург: 202-225.
- GILINSKIY (2004)/ ГИЛИНСКИЙ, Яков (2004) "Исключенность" как глобальная проблема и социальная база преступности, наркотизма, терроризма и иных девиаций", Труды Санкт-Петербургского Юридического института Генеральной прокуратуры РФ, № 6: 69-76.
- GILINSKIY (2006a)/ ГИЛИНСКИЙ, Яков (ред.) (2006a) *Глобализация и девиантность*, СПб., Юридический центр Пресс.
- GILINSKIY (2007)/ ГИЛИНСКИЙ, Яков (2007) *Девиантология: социология преступности, наркотизма, проституции, самоубийств и других "отклонений"*, СПб., Юридический центр Пресс.
- GILINSKIY and KOSTYUKOVSKY (2006)/ ГИЛИНСКИЙ, Яков, КОСТЮКОВСКИЙ Яков (2006) "Организованная преступность" в Яков Гилинский (ред.) *Глобализация и девиантность*, СПб., Юридический центр Пресс: 74-96.
- GILINSKIY, Yakov (2003) "Organized Crime: a Perspective from Russia" in Albanese, J., Das, D., Verma, A. (eds.) *Organized Crime: World Perspectives*, NJ Prentice Hall: 146-164.
- GILINSKIY, Yakov (2005) "Corruption: Theory and Russian Reality" in Sarre R., Das D., Albrecht H.J. (eds.) *Policing Corruption. International Perspectives*, Lexington Books: 157-168.
- GILINSKIY, Yakov (2006b) "Crime in Contemporary Russia", *European Journal of Criminology*, vol. 3, No 3: 259-82.
- GILOVITCH, T., MEDVEC, V.H. (1995) "The Experience of Regret: What, When and Why" in *Psychological Review*, 102: 379-395.
- GIMBERT, L. (2000) "Comment la grande entreprise industrielle aborde la prospective des métiers" in 3<sup>ème</sup> *Session d'exploration prospective*, Groupe Vision Paris-Caen, IAE de Caen, 30 novembre.
- GLAZYEV (1990)/ ГЛАЗЬЕВ, Сергей (1990) *Экономическая теория технического развития*, М., Наука.
- GLOBAL ENERGY NETWORK INSTITUTE (2008) 28 July 2008, ([http://www.geni.org/globalenergy/library/national\\_energy\\_grid/russia/index.shtml](http://www.geni.org/globalenergy/library/national_energy_grid/russia/index.shtml)).
- GLUKHOV, BARYKIN (2003)/ ГЛУХОВ, В.В., БАРЫКИН, С.Е. (2003) *Экономика электроэнергетического сектора*, Санкт-Петербург, изд-во СПбГПУ.
- GODET, M. (1985) *Prospective et planification stratégique*, Economica.
- GODET, M. (1992) *De l'anticipation à l'action*, Dunod, Paris.
- GODET, M. (1996) "La boîte à outils de prospective stratégique" in *Cahiers du LIPS*, n°5, CNAM, Paris.
- GODET, M. (1998) "La prospective stratégique" in Conférence prononcée à l'Ecole de Paris, le 6 mars.
- GOKHBERG (2003)/ ГОХБЕРГ, Л.М. (2003) *Статистика науки*, М., ТЕИС.

- GRIFFITH, R.M. (1949) "Odds Adjustments by American Horse Race Better" in *American Journal of Psychology*, 62: 290-294.
- GUBAIDULLINA (2005)/ ГУБАЙДУЛЛИНА, Фарида (2005) *Институциональная среда влияния прямых иностранных инвестиций на мировое и национальное развитие*, Екатеринбург, изд-во РГПУ.
- GUIMELLI, C. (1994) *Structure et transformation des représentations sociales*, Delachaux et Niestlé.
- GUROV (2000)/ ГУРОВ, Александр (2000) *Криминогенная ситуация в России на рубеже XXI века*, М., ВНИИ МВД РФ.
- GURVICH and GORYASHOVA (2006)/ ГУРВИЧ, Иосиф, ГОРЯЧЕВА, Надежда (2006) "Пьянство и алкоголизм" в Я. Гишинский (ред.) *Глобализация и девиантность*, СПб., Юридический центр Пресс: 113-61.
- GURVICH and RUSAKOVA (2006)/ ГУРВИЧ, Иосиф, РУСАКОВА, Майя (2006) "Глобализация наркопотребления" в Я. Гишинский (ред.) *Глобализация и девиантность*, СПб., Юридический центр Пресс: 162-203.
- GURVICH, Iosif, RUSAKOVA, Maja, YAKOVLEVA, Anna, et all. (2002) *The Commercial Sexual Exploitation of Children in St. Petersburg and Northwest Russia*. Save the Children, Sweden, Stockholm.
- GWARTNEY, J.D. (2003) *Economics: Private and Public Choice*, Mason, Thomson.
- NAKEN (1999)/ ХАКЕН, Г. (1999) "Можем ли мы применять синергетику в науках о человеке?" в *Синергетика и психология. Тексты*, вып. 2, М., ЯНУС-К.
- HAMEL, G., PRAHALAD, C.K. (1993) "La stratégie à effet de levier" in *Harvard L'Expansion*, 69, été: 43-54.
- HAMMOND, K.R. (2000) *Judgments Under Stress*, New York, Oxford University Press.
- HAMMOND, K.R., McCLELLAND, G.H., MUMPOWER, J. (1980) *Human Judgment and Decision Making*, New York, Praeger.
- HEBB, D.O. (1949) *The Organization of Behavior*, New York, Wiley.
- HECKSCHER, E. (1919) "The Effect of International Trade on Revenue Repartition" in *The Swedish Journal of Economics*, Stockholm.
- HELMER, O. (1981) "Reassessment of Cross-impact Analysis" in *Futures*, October, 13(4): 389-400.
- HILL, Fiona, GADDY, Clifford (2003) "The Siberian Curse: How Communist Planners Left Russia Out in the Cold", Brookings Institution Press, Washington.
- HIRST, P., THOMPSON, G. (1996) *Globalisation in Question: The International Economy and the Possibilities of Governance*, Polity press, U.S.A.
- НОЕКМАН, Bernard, DJANKOV, Simeon (1997) "Determinants of the Export Structure of Countries in Central and Eastern Europe" in *The World Bank Economic Review*, Vol. 11, No 3: 471-487.
- HOFF, Karla, STIGLITZ, Joseph E. (2004) "After the Big Bang? Obstacles to the Emergence of the Rule of Law in Post-Communist Societies" in *The American Economic Review*, Vol. 94, No. 3, June: 753-763.
- HOGARTH, R.M. (1980) *Judgment and Choice*, New York, Wiley.
- HORVATH (1976)/ ХОРВАТ, Иван (1976) *Теория индустриальных систем*, М., Прогресс.
- HUEMER, M. (2005) *Ethical Intuitionism*, Palgrave Macmillan.
- HUNT, S., SHUTTLEWORTH, G. (1996) *Competition and Choice in Electricity*, John Wiley, Chichester, England.
- ILO (1999) *Managing the Privatization and Restructuring of Public Utilities*, Geneva, ILO, <http://www.ilo.org>.
- IVANOVA (2001)/ ИВАНОВА, Н. (2001) "Научные исследования в корпорациях - основа инновационного процесса" в *Инновационная экономика*, (ред.) А.А.Дынкин, Н.И.Иванова, М., Наука: 53-83.

- JONES, J. (2005) "Brain, Mind, and Spirit – a Clinician's Perspective, or Why I am not Afraid of Dualism" in *Soul, Psyche, Brain: New Directions in the Study of Religion*, ed. Kelly Bulkeley, New York, Palgrave Macmillan: 36-60.
- JOURNAL OFFICIEL DE LA REPUBLIQUE FRANÇAISE (2000) Circulaire du 30 mars.
- JOUVENEL, (de) B. (1965) *Arcadie, Essais sur le mieux vivre*, Presses Universitaires de France, Paris.
- JOUVENEL, (de) B. (1970) "Prévision et action" in *Analyse et Prévision*, n°9 : 178-184.
- JOUVENEL, (de) B. (1972) *L'art de la conjecture*, Futuribles-SEDEIS.
- KAHNEMAN, D. (1994) "New Challenges to the Rationality Assumption" in *Journal of Institutional and Theoretical Economics*, n° 150: 18-36.
- KAHNEMAN, D., SLOVIC, P., TVERSKY, A. (1982) *Judgments Under Uncertainty: Heuristics and Biases*, New York, Cambridge University Press.
- KAHNEMAN, D., TVERSKY, A. (1979) "Subjective Probability: a Judgment of Representativeness" in *Cognitive Psychology*, 3: 430-454.
- KAMINSKI, Bartłomiej, NG, Francis (2005) "Production Disintegration and Integration of Central Europe into Global Markets" in *International Review of Economics and Finance*, vol. 14, Issue 3: 337-390.
- KANGASPUNTA, Kristiina (2004) "Mapping the Inhuman trade: Preliminary Findings of the Database on Trafficking in Human Beings" in *Forum on Crime and Society*, vol. 3, No 1-2: 81-104.
- KANT, Immanuel (1995a)/ Кант, Иммануил (1995a) *Критика практического разума*, Санкт-Петербург, Наука.
- KANT, Immanuel (1995b)/ Кант, Иммануил (1995b) *Основы метафизики нравственности*, Санкт-Петербург, Наука.
- KANTER, R.M. (1987) "Managing Traumatic Change: Avoiding 'Unlucky 13' ". *Management Review*, May: 23-24.
- KAZANTSEV (ed.) (2004)/ КАЗАНЦЕВ, Л.Э. (ред.) (2004) *Научно-инновационный комплекс Санкт-Петербурга*, Москва, ЦИСН.
- KHARLAMOV and POPCHENKOV (2004)/ ХАРЛАМОВ, А., ПОПЧЕНКОВ, И. (2004) Глобализация и эффективность хозяйственных систем в *Экономика и управление*, 2004, № 1: 57-69.
- KIERUFF, Stephen, KRIPPNER Stanley (2004) *Becoming Psychic: Spiritual Lessons for Focusing your Hidden Abilities*, Franklin Lakes, the Career Press, Inc.
- KIRKPATRICK, D.L. (1985) *How to Manage Change Effectively*, Jossey-Bass Publishers.
- KNYAZEVA and KURDYUMOV (2005)/ КНЯЗЕВА, Е.Н., КУРДЮМОВ, С.П. (2005) *Основания синергетики. Синергетическое мировидение*, изд-во Едиториал УРСС.
- KONDRATYEV (2007)/ КОНДРАТЬЕВ, Николай (2002) *Большие циклы конъюнктуры и теория предвидения*, М., Экономика.
- KONSTANTINOV, DIKSELIUS (1997)/ КОНСТАНТИНОВ, Андрей, ДИКСЕЛИУС, Малькольм (1997) *Бандитская Россия*, СПб., Библиополис.
- KORNAI, Joseph (1980) *Economics of Shortage*, Amsterdam-New York- Oxford.
- KORNAI, Joseph, RICHEL, Xavier (ed.) (1986) *La voie hongroise. Analyses et expérimentations économiques*, Paris, Calmann-Lévy.
- KOSHIMURA (1987)/ ХОШИМУРА, Шиндзабуро (1987) *Теория воспроизводства и накопления капитала*, М., Прогресс.
- KOSTOFF, R. (2004) *Method for Data and Text Mining and Literature-Based Discovery*, Patent Application Number US 2004/0064438 A1, April 2004.
- KRAFT (2004)/ КРАФТ, Г.В. (2004) *Теоретические основы реформирования и специфика финансирования естественных монополий*, Санкт-Петербург, изд-во СПбГУЭФ.
- KRIPPNER, S. (2005) "Psychoneurological Dimensions of Anomalous Experience in Relation to Religious Belief and Spiritual Practice" in *Soul, Psyche, Brain: New Directions in the Study of Religion*, ed. Kelly Bulkeley, New York, Palgrave Macmillan: 6-93.

- KRUGMAN, P. (1979) "Increasing Return, Monopolistic Competition and International Trade" in *Journal of International Economics*.
- KUHN, T.S. (1970) *The Structure of Scientific Revolution*, Chicago, Chicago University Press.
- LAURIOL J. (1995) "Approches cognitives de la décision et concept de la représentation sociale" in Noël A., Véry Ph., Wissler M. *Perspectives en management stratégique*: 425-454.
- KURZ and SALVADORI (2004)/ КУРЦ, Х.Д., САЛЬВАДОРИ, Н. (2004) *Теория производства. Долгосрочный анализ*, М., Финансы и статистика.
- LAGEBILD Menschenhandel (1999, 2000, 2001) Wiesbaden: Bundeskriminalamt.
- LANKES, Hans-Peter, VENABLES, Anthony J. (1996) "Foreign Direct Investment in Economic Transition: The Changing Pattern of Investments" in *Economics of Transition*, 4(2): 431- 447.
- LETICHE, John M. (2006) "Positive Economic Incentives. New Behavioral Economics and Successful Economic Transitions" in *Journal of Asian Economics*, Issue 5: 775-796.
- LAQUEUR, Walter (1998) *The Age of Terrorism*, Toronto, Little, Brown & Co.
- LASSUDRIE-DUCHÊNE, B. (1971) "La demande de différence et l'échange international" in *Economies et Sociétés, Cahiers de l'ISEA*, juin.
- LE DUFF, R., SCHMIDT, G. (2000) "Document introductif aux 4èmes rencontres" in *Ville-Management*, Nancy, France.
- LE MOIGNE, J.-L. (1999) "La décision publique en démocratie: rhéteurs, revenez vite" in *Savoir innover en droit; concepts, outils, systèmes. Hommage à Lucien Melh*, La Documentation Française: 211-226.
- LEIFMAN, H. (2001) "Homogenization in alcohol consumption in the European Union" in *Nordic Studies on Alcohol and Drugs*, vol. 18, English Supplement: 15-30.
- LEIFMAN, H., OSTERBERG, E., RAMSTEDT, M. (eds.) (2002) *Alcohol in Postwar Europe. A Discussion of Indicators on Alcohol Consumption and Alcohol-related Harm*, Stockholm, ECAS.
- LEITNER, K.-H., WARDEN, C. (2004) "Managing and Reporting Knowledge-based Resources and Processes in Research Organizations: Specifics, Lessons Learned and Perspectives" in *Management Accounting Research* 15: 33-51.
- LEONTYEV (1958)/ ЛЕОНТЬЕВ, Василий (1958) *Исследования структуры американской экономики. Теоретический и эмпирический анализ по системе "затраты-выпуск"*, М., Госстатиздат.
- LESOURNE, J. (1981) *Les mille sentiers de l'avenir*, Seghers, Paris.
- LEWIN, K. (1947) "Group Decision and Social Change", in *Readings in Social Psychology*, ed. E. Hartley, Newcomb.
- LEWS, C. (2002) *Mere Christianity*, London, HarperCollins Publishers.
- LEY, P. (1972) *Quantitative Aspects of Psychological Assessment*, London, Duckworth.
- LOOMES, G., SUGDEN, R. (1982) "Regret Theory: an Alternative Theory of Rational Choices Under Uncertainty" in *Economic Journal*, 92: 805-824.
- LOUART, P. (1999) "Décision" in *Encyclopédie de la Gestion et du Management*, Dalloz, Paris.
- LUHMANN (1998)/ ЛУМАН, Никлас (1998) "Глобализация мирового сообщества: как следует системно понимать современное общество" в *Социология на пороге XXI века: Новые направления исследований*, М., Интеллект.
- LUKIN, (2006)/ ЛУКИН, Владимир (2006) *Глобализация и международный терроризм*, М., Наука.
- LUNEYEV (2003)/ ЛУНЕЕВ, Виктор (2003) "Терроризм и организованная преступность: национальные и транснациональные аспекты" в *Организованная преступность, терроризм и коррупция. Криминологический ежеквартальный альманах*, № 2: 21-39.
- LUNEYEV (2005)/ ЛУНЕЕВ, Виктор (2005) *Преступность XX века. Мировые, региональные и российские тенденции*, изд. 2-е. М., Wolters Kluwer.
- MacCRIMMON, K.R. (1972) "Managerial Decision Making" in *Contemporary Management Issues and Viewpoints*, ed. J.W. MCGUIRE, Englewood Cliffs, Prentice Hall: 445-495.

- MacINTYRE, Alasdair (2005) *A Short History of Ethics. A History of Moral Philosophy from the Homeric Age to the Twentieth Century*, London and New York, Routledge Classics: 185.
- MAKARYCHEV, A. PROZOROV, S. (2004) "The Logic of Piloting and Trans-border Regionalism: the Project-oriented Approach in EU-Russian Cooperation" in *Danish Institute for International Studies DIIS Working Paper 2004/22* Copenhagen 2004: 9.
- MANDRAUD, I. (2007) "Ségolène Royal, entre stress et audace", *Le Monde* du 8-9 avril: 1, 6, Paris.
- MARCH, J. (1988) *Décisions et organisations*, Editions d'Organisation, Paris.
- MARR, D. (1982) *Vision: a Computational Investigation into Human Representation and Processing of Visual Information*, San Francisco, Freeman.
- MASSE P. (1967-b) "Les attitudes envers l'avenir et leur influence sur le présent" in Darcet J., *Etapas de la prospective*, Presses Universitaires de France, Paris.
- MASSE, P. (1967-a) "Prévision et prospective" in Darcet J., *Etapas de la prospective*, Presses Universitaires de France, Paris.
- MATURANA, Humbert and VALERA, Francisco (1980) *Autopoiesis and Cognition. The Realization of the Living*, Holland, Dordrecht, D.Reidel Publishing Company: 13.
- MAYER, Wolfgang, MOURMOURAS, Alex (2004) "IMF Conditionality and the Theory of Special Interest Politics (1). (International Monetary Fund)" in *Comparative Economic Studies*, September: 400-422.
- MAZEAU, M. (1997) *Dysphasies, troubles mnésiques, syndrome frontal chez l'enfant*, Paris, Masson.
- McCAGHY, Ch., CARPON, T., JAMICSON, J. (2000) *Deviant Behavior: Crime, Conflict, and Interest Groups*, the fifth edition, Allyn and Bacon.
- McCLELLAND J.L., RUMELHART D.E. (1986) "A Distributed Model of Human Learning and Memory" in *Parallel Distributed Processing*, eds. J.L. McCLELLAND, D.E. RUMELHART and the PDP Group, Vol. 2, Cambridge, Mas., M.I.T. Press.
- McLEAN, M. (1976) "Does Cross-impact Analysis Have a Future?" in *Futures*, 8(4), August: 345-349.
- MELENTYEV, MAKAROV (1983)/ МЕЛЕНТЬЕВ, Л.А., МАКАРОВ, А.А. (1983) *Энергетический комплекс СССР*, ред. Л.А.Мелентьева и А.А.Макарова, Москва, Экономика.
- MENSCH, Gerhard (1975) *Das technologische Patt: Innovationen überwinden die Depression*, Frankfurt, 1975.
- MERKULOVA, G., DIDENKO, N., TROPP, E., VORONTSOVA O. (2002) "Russian Women Physicists in the Transitional Period" in the IUPAP International Conference 'Women in Physics', Paris, France, March 7-9, AIP Conference Proceedings, volume 628, New York, Melville.
- MESSERLIN, Patrick A. (1995) "Central and East European Countries' Trade Laws in the Light of International Experience" in Winthers L. Alan (ed.), *Foundations of an Open Economy: Trade Laws and Institutions for Eastern Europe*, London, Centre for Economic Policy Research: 40-63.
- MILL, John, Stuart (2001) *Utilitarianism*, USA, Hackett Publishing Company, Inc.
- MILLER, G.A. (1964) *Mathematics and Psychology*, New York, Wiley.
- MINGHI, J. (1991) "From Conflict to Harmony in Border Landscapes" in *The Geography of Border Landscapes*, edited by Dennis Rumley and Julian V.Minghi, London & New York, Routledge: 15.
- MINKOVA, Milena (2000) "Regional Development in the CEECs. The Association Agreements and EU Regional Aid Policy" in *Discussion Papers*, No. 15, Local Government and Public Service Reform Initiative, Open Society Institute: 1-33.
- MINSKY, M., PAPER, S. (1969) *Perceptrons*, Cambridge, Mas., the M.I.T. Press.
- MINTZBERG, H. (1994) "Le management, voyage au centre des organisations" in *Les Editions d'Organisation*, Paris.

- MIROPOLSKY (2004)/ МИРОПОЛЬСКИЙ, Дмитрий (2004) *Хозяйственная система: исходные принципы функционирования*, СПб, НПК Рост.
- MITTELMAN, J. (ed.) (1997) *Globalization: Critical Reflection*, L., Lynne Rienner Publishers, Inc.
- MORGENSTERN, O. (1950) On the Accuracy of Economic Observations, *Princeton University Press*.
- MORIN, E. (1990) *Introduction à la pensée complexe*, ESF, Paris.
- MORIN, H. (2000) “La France se dote d'une Académie des technologies” in *Le Monde*, 13 décembre: 25, Paris.
- MOSIONGNIK (2003)/ МОСИОНЖНИК, Л. (2003) *Синергетика для гуманитариев*, СПб, Нестор-История.
- MOSKALEWICZ, Jacek, SIMPURA, Jussi (2000) “The Supply of Alcoholic Beverages in Transitional Conditions: the Case of Central and Eastern Europe” in *Addiction 95 (Supplement 4)*: 505-522.
- MULKAY, M. (1983) *Science and Sociology of Knowledge*, London, George Allen & Unwin Ltd.
- NAZARETYAN (2001)/ НАЗАРЕТЯН, А.П. (2001) *Цивилизационные кризисы в контексте Универсальной истории (Синергетика – психология – прогнозирование)*, М., Мир.
- NEKIPELOV (2004)/ НЕКИПЕЛОВ, Александр (2004) “Российская экономическая стратегия в условиях глобализации” в *Глобальное и национальное в экономике*, по итогам международной научной конференции - Малого университетского форума *Глобальное и национальное в экономике* 25, 26, 27 февраля 2004 г. - М., ЦОН при МГУ им. М.В. Ломоносова.
- NEMTSOV (2001)/ НЕМЦОВ, Александр (2001) *Алкогольная смертность в России, 1980-90-е годы*, М.
- NEMTSOV (2003)/ НЕМЦОВ, Александр (2003) *Алкогольный урон регионов России*, М., NALEX.
- NEWELL, A., SIMON, H.A. (1963) “G.P.S., a Program That Stimulates Human Thought” in *Computers and Thought*, eds. E.A. Feigenbaum and J. Feldman, New York, McGraw Hill.
- NEWELL, A., SHAW, J.C., SIMON, H.A. (1957) “Empirical Explorations of the Logic System Machine” in *Proceedings of the Western Joint Computer Conference*: 230-240.
- NIGMATULIN (2008)/ НИГМАТУЛИН, Булат (2008) “В чем не прав Анатолий Чубайс” в *Большой Бизнес*, июнь № 6 (52).
- NORSTROM, T. (ed.) (2001) *Alcohol in Postwar Europe: Consumption, Drinking patterns, Consequences and Policy Responses in 15 European Countries*, Stockholm, ECAS.
- OHLIN, B. (1933) *Inter-regional and International Trade*, Harvard University Press, Cambridge.
- OLKOV (2004)/ ОЛЬКОВ, Сергей (2004) “О пользе и вреде неравенства (криминологическое исследование)” в *Государство и право*, № 8: 73-78.
- ORLEAN, A. (1999) *Le pouvoir de la finance*, Odile Jacob, Paris.
- OSBORN, D. and GAEBLER, T. (1992) *Reinventing Government. How the Entrepreneurial Spirit Is Transforming the Public Sector*, Penguin Books.
- OVCHINSKY, EMINOV and YABLOKOV (1996)/ ОБЧИНСКИЙ, Владимир, ЭМИНОВ, Владимир, ЯБЛОКОВ, Николай (ред.) (1996) *Основы борьбы с организованной преступностью*, М., ИНФРА-М.
- PALMER, S., HUMPHERY, J. (1990) *Deviant Behavior: Patterns, Source and Control*, NY-L., Plenum Press.
- PANARIN (2003)/ ПАНАРИН, А.С. (2003) *Искушение глобализмом*, М., Эксмо/Алгоритм-книга.
- PANTIN (1999)/ ПАНТИН, Владимир (1999) “Рецензия на *Постиндустриальный мир: Центр, Периферия, Россия*” в *Проблемы глобализации, Pro et Contra*, т. 4, № 4: 227-32.
- PARKIN, A.J. (1996) *Explorations in Cognitive Neuro Psychology*, Oxford, Blackwell.

- PAUGAM (1999)/ ПОГАМ, Серж (1999) “Исключение: социальная инструментализация и результаты исследования” в *Журнал социологии и социальной антропологии*, т.П.: 140-156.
- PETERSEN (2002)/ ПЕТЕРСЕН ГАНС-ГЕОРГ (2002) “Глобализация и социальная справедливость” в *Национальная экономика в условиях глобализации и региональное развитие*, СПб, Союз.
- PETTIGREW, A. (1987) *The Awakening Giant. Continuity and Change in ICI*, Oxford, Basil Blackwell.
- PFAFFENBERGER (1999)/ ПФАФФЕНБЕРГЕР, В. (1999) *Рынки электроэнергии: проблемы развития*, (ред.) Лычагин М.В., Пфаффенбергер В., Меламед Л.Б., Новосибирск, издательство Сибирского отделения Российской академии наук.
- POLIZEILICHE Kriminalstatistik Bundesrepublik Deutschland. Berichtsjahr 2004 (2005). Wiesbaden, Bundeskriminalamt.
- POLLITT, C., BOUCKAERT, G. (2000) *Public Management Reform. A Comparative Analysis*, Oxford University Press.
- PORTER (2005)/ ПОРТЕР, М. (2005) *Конкурентная стратегия: Методика анализа отраслей и конкурентов*, Москва, Альпина Бизнес Букс.
- PRICE, H.H. (1995) *Philosophical Interactions with Parapsychology*, London, Macmillan Press Ltd.
- PRIGOGINE (2000)/ ПРИГОЖИН, И. (2000) “Творящая натура” в *Эксперт*, № 48: 73-76.
- PROBST, G.J.B., ULRICH, H. (1989) *Pensée globale et management*, Les Editions d'Organisation, Paris.
- PRZEWORSKI, Adam (1993) “Economic Reforms, Public Opinion, and Political Institutions: Poland in the Eastern European Perspective” in Luiz Carlos Bresser Pereira, et al., *Economic Reforms in New Democracies*, Cambridge, Cambridge University Press.
- RAO UES (2006) (2007-2008) (official website of RAO UES <http://www.rao-ees.ru>, August 2008).
- RAPPOPORT (2003)/ РАППОПОРТ, А.Н. (2003) *Реструктуризация национальных электроэнергетик: мировая практика*, Санкт-Петербург, издательство СПбГУЭФ.
- REC (2008)/ РЭК Томской области (2008) Новости на официальном вэбсайте Региональная энергетическая комиссия, <http://rec.tomsk.gov.ru/news-6506.html>, 29.07.2008.
- REICH, R. (1991) *The Work of Nations*, Alfred Knopf Inc., New York.
- RENSINK, R.A. (2002) “Change Detection” in *Annual Review of Psychology*, 53: 245-277.
- РЕПЕТСКАЯ (2001)/ РЕПЕЦКАЯ, Анна (2001) *Транснациональная организованная преступность: характеристика, причины, стратегии контроля*, Иркутск, ИГЭА.
- REPORT from the Commission (2005) *Report on Phare, Pre-accession and Transition Instruments*, Brussels, COM (2005) 701 final.
- REPORT of RAS (2005)/ ОТЧЕТ о деятельности российской академии наук в 2005г., т. IV, *Научно-организационная деятельность. Основные показатели развития РАН*, Москва, 2006.
- RICARDO, D. (1997) *Principles of Political Economy and Fiscal Policy*, coll. Champs, Flammarion, Paris.
- RITOV, I. (2006) “The Effect of Time on Pleasure with Chosen Outcomes” in *Journal of Behavioral Decision Making*, 19: 177-186.
- RIVELINE, C. (1991) “De l'urgence en gestion” in *Annales des Mines*, mars, Paris.
- ROBERTSON, R. (1992) *Globalization. Social Theory and Global Culture*, London, Sage.
- ROBINSON, Matthew (2002) *Justice Blind? Ideals and Realities of American Criminal Justice*, NJ, Prentice Hall, Upper Saddle River.
- ROGATYKH, STRELCHENKO and TOPOROV (2003)/ РОГАТЫХ Любовь, СТРЕЛЬЧЕНКО Эдуард, ТОПОРОВ Сергей (2003) *Борьба с Контрабандой наркотических средств, психотропных и сильнодействующих веществ*, СПб., Специальная литература.

- ROMANOVA (2000)/ РОМАНОВА, Лариса (2000) *Наркотики: Преступления, ответственность*, Владивосток, Издательство Дальневосточного университета.
- ROMER, Paul (1986) "Increasing Returns and Long Run Growth" in *Journal of Political Economy*, vol. 94: 1002-1037.
- RONA-TAS, Acos, BUNCAK, Jan, HARMADYOVA, Valentina (1999) "Post-Communist Transformation and the New Elite in Slovakia" in *Sociológia*, Vol. 31, No. 3: 235-262.
- ROSENBLATT, F. (1962) *Principles of Neurodynamics*, New York, Spartan.
- RUBELE, Renzo (2006) "European Institute of Technology (EIT): the Commission's Consultation with the Stakeholders" in *Euroscience News 36 - November 2006*, the official website: <http://www.euroscience.org>
- RUMELHART, D.E., HINTON, G.E. & WILLIAMS, R.J. (1986) "Learning Representations by Back Propagating Errors" in *Nature*, 323: 533-536.
- RUSSIAN NEWS and INFORMATION AGENCY 'Novosti' (2007) from 12.03.2007 <http://en.rian.ru/world/20070312/61886460.html>, (29.07.2008).
- RUTKOWSKI, Jan, SCARPETTA, Stefano (2005) *Enhancing Job Opportunities: Eastern Europe and the Former Soviet Union*, The International Bank for Reconstruction and Development/The World Bank, Washington DC.
- RYABYKH (2004)/ РЯБЫХ, В. (2004) "Инновационное инвестирование как важнейший ресурсный фактор экономического роста" в *Экономика и управление*, 2004, № 1: 34-42.
- RYAZANOV (2004)/ РЯЗАНОВ, Виктор (2004) "Экономическая стратегия России в условиях растущей глобализации мировой экономики" в *Экономическая теория в XXI веке*, (ред.) Ю.М.Осипов, В.В.Чекмарев, Е.С.Зотова М., Экономист: 569-574.
- RYNER, Magnus (2002) *Capitalist Restructuring, Globalisation and the Third Way. Lessons from the Swedish Model*, London and New York, Routledge.
- RZHEVSKAYA (2006)/ РЖЕВСКАЯ, Марина (2006) "Глобализация в контексте противоречия между протекционизмом и свободой торговли" в *Философия хозяйства*, 2006, № 5: 123-132.
- SACHS, Jeffrey D. (2005) *The End of Poverty: Economic Possibilities for Our Time*, Penguin Press New York.
- SAGATOVSKY (2003)/ САГАТОВСКИЙ, В.Н. (2003) "Социальная синергетика и концепция доопределения бытия" в сб. *Социальная синергетика*, Йошкар-Ола.
- SAMUELSON, P. (1948) "International Trade and Equalization of Factor Prices", in *Economic Journal*, № 58.
- SAMUELSON, P. (1964) "Theoretical Notes on Trade Problems" in *Review of Economics and Statistics*, No 46, May.
- SAULIN (2006)/ САУЛИН, Александр (2006) *Структурная оценка макроэкономических систем*, СПб., изд-во СПбГУЭФ.
- SAVAGE, L.J. (1954) *The Foundations of Statistics*, New York, Wiley.
- SCHMID, Alex (2005) "Statistics on Terrorism: the Challenge of Measuring Trends in Global Terrorism" in *Forum on Crime and Society*, vol. 4, No 1-2: 49-70.
- SCHOORS, Koen, Van der TOL, Bartoldus (2002) "Foreign Direct Investment Spillovers Within and Between Sectors: Evidence from Hungarian Data" in *Paper CERISE, LICOS*, University of Leuven, Belgium: 36.
- SCHUMPETER (1982)/ ШУМПЕТЕР, Й. А. (1982) *Теория экономического развития*, М., Прогресс.
- SELISCHEVA (2006)/ СЕЛИЩЕВА, Тамара (2006) *Структура российской экономики: на пути к информационному обществу*, СПб., изд-во СПбГУЭФ.
- SEN, Amartya (2003) *Inequality Reexamined*, Oxford.
- SEN, Amartya (2005) *On Ethics and Economics*, Oxford, Blackwell Publishing.
- SHANNON, C., WEAVER, W. (1949) *The Mathematical Theory of Communication*, Urbana, University of Illinois Press.

- SHAW, Mark, van DIJK, Jan, RHOMBERG, Wolfgang (2004) "Determining Trends in Global Crime and Justice: an Overview of Results from the United Nations Surveys of Crime Trends and Operation of Criminal Justice Systems" in *Forum on Crime and Society*, vol. 3, No 1-2, 2003: 35-63.
- SIMMEL, G. (1995) "Soziologie des Raumes" in *Georg Simmel Gesamtausgabe*, Bd. 7 / Hrsgg. v. Rüdiger Kramme, Angela Rammstedt und Otthein Rammstedt, Frankfurt a. M., Suhrkamp: 132.
- SIMON, H.A. (1957) *Models of Man: Social and Rational*, New-York, Wiley.
- SIMON, H.A. (1983) *Administration et processus de décision*, Economica, Paris.
- SINGER, T., SEYMOUR, B., O'DOHERTY, J., KAUBE, H., DOLAN, R., FRITH, C. (2004) "Empathy for Pain Involves the Affective but not Sensory Components of Pain" in *Science* 20 February 2004, Vol. 303, No. 5661: 1157-1162.
- SKIFSKY (2006)/ СКИФСКИЙ, Иван (2006) *Объяснение и прогнозирование насильственной преступности в Российской Федерации*, Дисс. кандидата юридических наук, Красноярск.
- SLOVIC, P., LICHTENSTEIN, S. (1973) "Comparison of Bayesian and Regression Approaches to the Study of Information Processing in Judgment" in *Human Judgment and Social Interaction*, (eds.) L. Rappoport, D.A. Summers, New York, Holt, Rinehart & Winston: 16-108.
- SMELSER (1994)/ СМЕЛЗЕР, Нейл (1994) *Социология*, М., Феникс.
- SMIDA A. (2002) "L'attitude prospective, un renouveau pour la décision publique" in Cliquet G. et Orange G., *Organisations privées, organisations publiques*, Presses Universitaires de Rouen, France: 301-328.
- SMIDA, A. (1999) "Prospective" in *Encyclopédie de la gestion et du management*, Dalloz, Paris.
- SMIDA, A. (2003) "Décisions dans un univers de contraintes : approches préactives, réactives et proactives" in *Les décisions sous contraintes*, eds. B. Cadet, C. Grenier and A. Smida, Caen, Presses Universitaires: 363-377.
- SMIDA, A. (2006) "Management Tools and Methods: Challenges and Opportunities for the French Public Health System" in *Journal of Social Management*, vol. 4, n°1, Mai: 91-106.
- SMIDA, A. (2007) "SMOCS, un modèle de management anticipatif stratégique pour piloter l'organisation dans des environnements complexes" in 5<sup>ème</sup> Colloque de l'ATSG, Hammamet, Tunisie.
- SMIDA, A., CADET, B. (2006) "Ancrages métacognitifs des prises de décision" in *Colloque et Séminaire Doctoral International*, co-organisé par l'Academy of Management et l'ISEOR, avril, Lyon, France.
- SMITH, A. (1976) *The Wealth of Nations*, collection idées, Gallimard, Paris.
- SNELL, R.S. (1980) *Clinical Neuroanatomy for Medical Students*, Boston, USA, Little, Brown and Company.
- SOKOLOV (2004)/ СОКОЛОВ, Ю.А. (2004) *Организация и управление хозяйственной деятельностью энергетических компаний*, (ред.) Ю.А.Соколова, Иваново, Ивановский ГХТУ.
- STANISZKIS, Jadwiga (1991) "Political Capitalism in Poland in East European" in *Politics and Societies*, Vol. 5, No. 1: 1127-141.
- STEGER, Manfred (2003) *Globalization: A Very Short Introduction*, Oxford University Press.
- STIGLITZ, Joseph (2002) *Globalization and its Discontents*, W.W. Norton.
- STOBER, R. (2002) *Allgemeines Wirtschaftsverwaltungsrecht*, Stuttgart, W.Kohlhammer GmbH.
- СТОЕКЕР (2000)/ СТОЕКЕР, Салли (2000) "Организованная преступность как фактор роста числа случаев торговли людьми" в *Организованная преступность и коррупция, Альманах*, № 1: 57-66.
- SVEJNAR, Jan (2002) "Transition Economies: Performance and Challenges" in *Journal of Economic Perspectives*, 16 (1): 3-28.

- SYNOPSIS of Key Action Projects (1999-2002) *Key Action Improving the Socio-economic Knowledge Base, European Commission, Directorate-General for Research, 2003.*
- SZANYI, Miklos (2002) *Spillover Effects and Business Linkages of Foreign-owned Firms in Hungary*, Institute for World Economics, Hungary Academy of Sciences, Working Papers, No 126, May 2002: 21.
- SZASZ, T. (1996) *The Meaning of Mind: Language, Morality, and Neuroscience*, London, Praeger.
- TANCREDI, L. (2005) *Hardwired Behavior: What Neuroscience Reveals about Morality*, Cambridge University Press.
- TAYLOR, H., TVERSKY, B. (1992) "Descriptions and Depictions of Environment" in *Memory and Cognition*, 20, 5: 483-496.
- TRAFFICKING in Human Beings: First Report of the Dutch National Rapporteur (2002) The Hague: Bureau NRH.
- TRAFFICKING in Women: Situation Report (1998-2002) No 1-5, Stockholm, National Criminal Investigation Department.
- TURAYEV (2002)/ ТУРАЕВ, Владимир (2002) *Глобальные вызовы человечеству*, М.
- TVERSKY, A., KAHNEMAN, D. (1974) "Judgment Under Uncertainty: Heuristics and Biases" in *Science*, 185: 1124-1131.
- TVERSKY, A., KAHNEMAN, D. (1983) "Extension Versus Intuitive Reasoning. The Conjunction Fallacy in Probability Judgment" in *Psychological Review*, 90: 293-315.
- TVERSKY, A., KAHNEMAN, D. (1974) "Judgment Under Uncertainty: Heuristics and Biases" in *Science*, 185, 1124-1131.
- TVERSKY, A., KAHNEMAN, D. (1983) "Extension Versus Intuitive Reasoning. The Conjunction Fallacy in Probability Judgment" in *Psychological Review*, 90: 293-315.
- TVERSKY, A., KAHNEMAN, D. (1981) "The Framing of Decisions and the Psychology of Choice" in *Science*, 211: 453-458.
- TYURYKANOVA, Elena (2005) *Forced Labour in the Russian Federation Today: Irregular Migration and Trafficking in Human Beings*, Geneva, International Labour Office.
- ULYANOV (ed.) (2007)/ УЛЬЯНОВ, И.С. (2007) *Регионы России. Социально-экономические показатели*, Москва, Стат.сб./Росстат.
- UTKIN (2002)/ УТКИН, И.А. (2002) *Глобализация: процесс и осмысление*, М., Логос.
- VARNAVSKY (2003)/ ВАРНАВСКИЙ, В. Г. (2003) "Реформирование мировой электроэнергетики" в *Мировая экономика и международные отношения*, № 4.
- VARSHAVSKY and SIROTKIN (1999)/ ВАРШАВСКИЙ, А., СИРОТКИН, О. (1999) "Научно-технический потенциал" в *Путь в XXI век. Стратегические проблемы и перспективы российской экономики*, (ред.) Д.С.Львов, М., Экономика: 344-365.
- VILLEY, Daniel (1964) *Petite histoire de grandes doctrines économiques*, M. TH. Génin, Paris.
- VON WINTERFELT, D., EDWARDS, W. (1986) *Decision Analysis and Behavioral Research*, Cambridge, Cambridge University Press.
- WALMSLEY, Roy (2004) "Global Incarceration and Prison Trends" in *Forum on Crime and Society*, vol. 3, No 1-2: 65-80.
- WEIL-BARAIS, A. (1993) *L'homme cognitif*, Paris, Presses Universitaires de France.
- WELFENS, Paul, JUNGMITTAG, Andre (2005) "ИКТ–Dynamik, Wirtschaftswachstum und Globalisierung" in *Globalisierung und regionale Modernisierung von Wirtschaft und Politik*, Lohmar–Köln, Josef Eul Verlag: 23-87.
- WELLS, H.G. (1904) *La découverte de l'avenir*, Mercure de France.
- WERTH (1994)/ ВЕРТ, Николас (1994) *История Советского государства*, М., Прогресс–Академия.
- WICKER, B., KEYSERS, C., PLAILLY, J., ROYET, J., GALLESE, V., RIZZOLATTI, G. (2003) "Both of Us Disgusted in My Insula: The Common Neural Basis of Seeing and Feeling Disgust" in *Neuron*, Vol. 40, October 30, 2003, Cell press: 655-664.

- WILLIAMSON, John (1990) "What Washington Means by Policy Reform" in J. Williamson (ed.) *Latin American Adjustment: How Much Has Happened?* Institute of International Economics, Washington, D.C.: 5–20.
- WILLIAMSON, John (2000) "What Should the World Bank Think About the Washington Consensus?" in *The World Bank Research Observer*, Vol. 15, No 2: 251-264.
- WINTERFELT, (von) D., EDWARDS, W. (1986) *Decision Analysis and Behavioral Research*, Cambridge, Cambridge University Press.
- WISE, J.A. (1970) "Origins of Subjective Probability" in *Acta Psychologica*, 34: 287-299.
- WORLD DEVELOPMENT REPORT (2005)/ ДОКЛАД О МИРОВОМ РАЗВИТИИ (2005) *Как сделать инвестиционный климат благоприятным для всех*, М., Весь мир.
- WRIGHT, S.F., GRONER, R.(1993) *Facets of Dyslexia and its Remediation*, Amsterdam, North Holland.
- YAKOVETS (2003)/ ЯКОВЕЦ, Ю.В. (2003) *Глобализация и взаимодействие цивилизаций*, М., Экономика.
- YAKOVETS (2004)/ ЯКОВЕЦ, Юрий (2004) *Эпохальные инновации XXI века*, М., Экономика.
- YAMPOLSKY (2003)/ ЯМПОЛЬСКИЙ, Ю.П. (2003) *Управление денежными потоками в условиях реструктуризации предприятий*, Санкт-Петербург, изд-во СПбГУЭФ.
- YANITSKY (2004)/ ЯНИЦКИЙ, Олег (2004) "Модерн и его отходы" в *Социологический журнал*, № 1/2: 199-295.
- YARYEMENKO (1997)/ ЯРЕМЕНКО, Юрий (1997) *Теория и методология исследования многоуровневой экономики*, М., Наука.
- YEGOROV (2002)/ ЕГОРОВ, В.К. (2002) "Культура как двигатель и тормоз глобализации" в *Глобализация: синергетический подход*, под ред. В.К. Егорова, М, РАГС.
- YEVDOKIMOV (2004)/ Александр (2004) "Глобализация - важнейшая тенденция мировой экономики" в *Проблемы глобализации мировой экономики*, (ред.) Л.С.Тарасевич, А.И. Евдокимов, СПб., изд-во СПбГУЭФ: 24-40.
- YOUNG, Joy (1999) *The Exclusive Society: Social Exclusion, Crime and Difference in Late Modernity*, SAGE Publications.
- YUZHKHANOVA (2005)/ ЮЗИХАНОВА, Эльвира (2005) *Моделирование криминогенных процессов в субъектах Российской Федерации*, Тюмень, изд-во Вектор-Бук.
- ZENTNER, R.D. (1980) "Scenarios, Past, Present and Future" in *Long Range Planning*, vol. 15, n°3, June: 29-32.
- ZERNOVA (2007)/ Зернова, Т. (2007) "Игры с совестью" в газете *24 часа* №50: 6, и *Российская газета* № 201, 2007.
- ZSAMBOK, S.E., KLEIN, G. (1997) *Naturalistic Decision Making*, Mahwak, Lawrence Erlbaum Associates.

## Name Index

- Allakhverdyan, A., 147  
Anderson, N., 13  
Arrow, K., 83  
Austria, 162-164  
Balassa, B., 84  
Balcerowicz, L., 95-96  
Baltic, 167  
Bauman, Z., 130  
Bayesian, 10  
Belarus, 170, 181  
Bell, D., 4, 115  
Bentham, J., 3  
Berger, G., 71-75  
Bhopal, 7  
Blagoveschensk, 178  
Brasseur, M., 68, 74  
Bretton Woods, 79  
Brunswik, E., 14  
Camilleri, J., 170  
Cassel, G., 83  
Chamberlin, E., 84  
Chechnya, 140  
China, 83, 135, 142, 143, 159, 178, 186  
Chomsky, N., 38, 53  
Chubais, A., 188  
Clark, C., 115  
Cochran, M., 53  
Cooksey, R., 16, 62  
Copernicus, 24  
Czech, 94, 98-103, 152  
Debreu, G., 83  
Deng Xiaoping, 83  
Dezhina, I., 157  
Dimitrova, A., 12  
Disneyland, 131  
Dostoevsky, F., 40  
Edwards, W., 3, 11, 62  
Eltsin, B., 146  
Emerson, M., 170  
Estonia, 170, 178  
European Union, 53, 95, 97-99, 106,  
129, 133, 137, 159, 162, 165, 170  
Euroscience, 158  
Eysenck, M., 3  
Fehr, U., 57  
Fodor, J., 22  
Fourastie, J., 115  
France, 7, 13, 59, 60, 62, 64, 65, 67, 69,  
74, 75, 77, 134, 137, 152, 156, 159, 164,  
191, 196  
Gachter, S., 57  
Ganor, B., 139  
General Motors, 76  
Georgia, 41, 170  
Germany, 77, 156, 159, 162, 163, 201  
Giddens, A., 54, 55  
Gigerenzer, G., 62  
Gilbert, M., 83  
Gimbert, L., 66  
Godet, M., 61, 66, 68, 72, 73  
Gokhberg, L., 148, 149, 156, 159  
Gorbachev, M., 133, 146  
Great Britain, 143, 153, 172, 191, 199, 201  
Hammond, K., 8, 16  
Heckscher, E., 83  
Heilongjiang, 178  
Helmer, O., 61  
Hill, F., 118, 127  
Hinton, G., 20  
Hogarth, R., 62  
Horvath, I., 115  
Huemer, M., 42, 43  
Hungary, 94, 98-103  
Ivanova, N., 126  
Japan, 77, 84, 129, 142, 148, 152, 164, 186  
Jones, J., 45-47, 49  
Jouvenel, B., 71-74  
Kahneman, D., 61, 62  
Kaliningrad, 174, 175, 181  
Kangaspunta, K., 141  
Kant, E., 40, 41, 49-55, 58  
Karelia, 175, 182  
Kazakhstan, 170  
Keane, M., 3  
Keynes, J., 87, 89, 97  
Khabarovsk, 175  
Krippner, S., 48  
Krugman, P., 85  
Kuhn, T., 3, 60, 63  
Lassudrie-Duchêne, B., 85  
Latvia, 170  
Leitner, K., 162

Leningrad, 174, 175  
 Lewin, K., 67  
 Lithuania, 170  
 Loomes, G., 4  
 Luhmann, N., 130  
 Luneyev, V., 131, 132  
 Macbeth, 37  
 MacCrimmon, K., 3  
 MacIntyre, A., 50-52  
 Magadan, 167  
 Marr, D., 17  
 Marxism, 88, 90  
 Massé, P., 71  
 McClelland, J., 16, 17  
 McLean, M., 61  
 Meidner, R., 55, 56  
 Melentyev, L., 185  
 Mensch, G., 115  
 Mill, J., 3  
 Minitel, 65  
 Morgenstern, O., 61, 69  
 Morin, H., 62, 66, 67, 70, 74  
 Moscow, 166, 174, 185  
 Mulkay, M., 48  
 Mumpower, J., 16  
 Narva, 178  
 Newell, A., 16, 19  
 Nigmatulin, B., 188  
 Ohlin, B., 83  
 Olkov, S., 130  
 Orléan, A., 89  
 Panarin, A., 25, 35  
 Poland, 94-97, 98-104, 152, 170, 172  
 Prigogine, I., 27, 29  
 Prussia, 50  
 RAO UES, 187-189, 191, 201  
 Raskolnikov, R., 37, 40  
 Rawls, J., 56  
 Ricardo, D., 85, 88  
 Romer, P., 115  
 Rumelhart, D., 17, 20  
 Russia, 37, 39, 41, 42, 107, 115,  
     116, 118, 119, 122-130, 132-137,  
     146- 182  
 Ryner, M., 55  
 Sachs, J., 174  
 Saddam Hussein, 140  
 Samuelson, P., 83, 84  
 Savage, L., 10, 61  
 Scandinavia, 167  
 Schumpeter, J., 115  
 Sen, A., 54, 56  
 Seveso, 7  
 Shakespeare, W., 37  
 Shannon, C., 16  
 Shaw, M., 16  
 Siberia, 182  
 Simmel, G., 169  
 Simon, H., 16, 19  
 Slovakia, 94, 98, 102, 103, 152  
 Slovic, P., 94, 98, 102, 103, 152  
 Smith, A., 88  
 South Ossetia, 41  
 Soviet Union, 170, 173, 175  
 St.Petersburg, 4, 37, 134, 148, 151,  
     154-156, 158-161, 163-166, 174  
 Stalin, 37, 104  
 Stiglitz, J., 93  
 Suifenhe, 178  
 Tancredi, L., 37-39, 44, 45, 47  
 Tversky, A., 11, 18, 22, 61, 62  
 Ukraine, 181  
 USA, 12, 76-78, 81, 84, 89, 116, 118, 119,  
     121-124, 126, 129, 131-132, 136, 138,  
     140, 142, 144, 147-149, 154, 162, 164,  
     185, 186, 197, 199, 201,  
 Walras, L., 83  
 Warden, C., 162  
 Weaver, N., 16  
 Wells, H., 71, 74  
 Westphalian, 168, 169, 175  
 Winterfelt, D., 62  
 Yanitsky, O., 130

# Subject Index

- Ageing, 146, 147, 150, 166  
Agency, 57, 190-192, 199, 200, 201  
Agent, 11, 17, 21-23, 57, 66, 81, 143,  
146, 166, 184, 189, 193, 198, 200, 201  
Alcoholism, 128, 130, 136  
Artificial intelligence, 18, 19  
Behaviour, 3-6, 10, 16-18, 20, 21, 25, 33,  
37, 40, 44-45, 49, 54, 57, 59-71, 73,  
75, 81, 82, 89, 129, 136, 144, 178  
Brain, 37-39, 44-49, 54, 57, 58  
    biochemistry of the brain, 45  
    emotional brain, 38  
    brain fingerprinting, 49  
    moral brain, 37-39, 52  
    rational brain, 38  
Centralization, 62, 63, 65, 68-71, 98,  
106, 107  
Cognition, 6, 10, 13, 43, 44, 54  
Cognitive, 2, 3, 5, 9-11, 13, 16, 17, 20-22,  
37, 38, 43, 49, 54, 55, 58  
    cognitive globalization, 1, 14, 15, 21, 22  
    cognitive maps, 18  
Communitarian, 53  
Complexity, 18, 20, 28, 54, 70, 71, 73, 75  
Conjunction fallacy, 11  
Connectionism, 17  
Cosmopolitan, 53, 54, 58  
Creation of values, 88  
Criminality, 128, 130-133, 136  
Decision maker, 2-6, 9, 10, 12, 14, 15,  
18, 21-23, 59-75  
Decision making, 1-7, 10, 12, 13, 18, 19,  
23, 39, 54, 59-64, 66-69, 74, 75, 93,  
100, 175, 201  
Deviance, 128-133, 144  
Deviant, 128-136, 144, 145  
Drug addiction, 138, 145  
Dualism, 42, 43, 45, 49  
Economic system, 37, 49, 52, 56, 57,  
91-94, 106, 107, 109, 111, 112, 119,  
124, 125, 126  
    basic sector, 109, 111, 113-121, 123-125  
    market economy, 107, 117, 119, 122-125,  
127  
    pioneer sector, 111, 113-127  
    planned economy, 91, 92, 100, 117-127  
Electrical power industry, 187-193, 196-201  
Empathy, 40, 44, 45, 54, 56, 57, 58  
Entrepreneurial, 93  
Equality, 45, 54, 56-58, 122  
Eschatology, 26, 27, 33  
Essenceology, 26, 27  
Ethical  
    intuitionism, 42  
    naturalism, 37, 41, 42, 44  
    realism, 37, 41, 43, 58  
Ethics, 40, 49, 53, 54, 57  
    cosmopolitan, 54  
    generative, 49, 53  
    meta, 41, 42  
Excluded, 130-133, 139, 141, 142, 144, 145  
Fairness, 40, 45, 51-54, 57  
Feminization, 147, 152, 166  
Formation of salaries, 81  
Global  
    attractor, 28  
    chaos, 28  
    economy, 101, 173  
    hierarchy, 107  
    market, 100  
    order, 32  
    process, 90, 128, 148  
    self-organization, 29  
    social system, 29, 30  
    society, 38, 50, 54, 58  
    tendency, 175, 184, 200  
    thinking, 70  
    village, 69  
    welfare society, 58  
Globalization, 1, 2, 5, 11-16, 18, 20-25, 31,  
32, 38, 54, 55, 79, 80, 83-85, 87, 88, 100,  
105, 107, 119, 120, 122, 124, 126-138,  
140, 144, 146, 157, 166-169, 174, 176,  
183, 187  
Globalization  
    absolute, 32  
    additive, 13  
    cognitive, 1, 14, 15, 21, 22  
    comprehensive, 31  
    connectionist, 18  
    correlational 13, 16  
    heterogeneous, 31

homogeneous, 31  
 one-dimensional, 31  
 relative, 32  
 socially responsible/irresponsible, 33  
 stable, 31  
 unstable, 31  
 Globalizing, 36, 57, 58, 107, 128  
 Governance, 35, 77, 81, 89  
 Human trafficking, 140-142, 144  
 Industrial revolution, 76  
 Intellectual capital, 146, 147, 162, 163  
 Investment, 79-81, 84, 87, 92, 96,  
 97, 99, 101-103, 167, 173, 174, 182,  
 185, 187, 188, 195, 196, 198-201  
 Liberalism, 55, 82, 83, 90  
 Liberalization, 91, 94-96, 98, 99, 102,  
 122, 126, 137, 184-187, 193, 199-201  
 Monism, 42, 43  
 Monopolistic, 84  
 Moral  
   action, 50, 52, 53  
   behaviour, 37, 44, 45  
   decision making, 39  
   intuition, 43, 48  
   law, 49, 50  
   philosophy, 40, 44, 58  
   relativism, 50, 52, 53, 57  
   statement, 41, 42  
   thinking, 37, 38, 44, 48, 54, 56, 58  
   truth, 41-43  
   values, 38, 41, 58  
   virtues, 41, 49  
 Narcotism, 128, 137, 138  
 Natural monopoly, 184, 186, 190, 191,  
 193, 200, 201  
 Neoliberal, 186, 200  
 Networks, 14-21, 23, 27, 31, 34, 38, 40,  
 44, 80, 81, 92, 103, 128, 129,  
 134, 135, 138, 165, 177, 183, 186, 189,  
 192, 196-199, 201  
 Neurological, 44, 48, 57  
 Neuron, 17, 21, 38, 40, 45-47, 49, 56  
 Neuropath, 45, 48  
 Neuroplasticity, 38, 40, 45  
 Neuroscience, 38, 43, 44, 47-49, 54, 58  
 Nomenklatura, 95  
 Oligopoly, 191  
 Paradigm, 23, 24, 59, 60, 63, 64, 82, 83,  
 87, 90  
 Parapsychological, 48  
 Pathological, 59, 60, 64-65, 67-69  
 Perceptron, 19-21  
 Physicalism, 46, 47  
 Post-graduate, 154-156, 159, 160, 163  
 Privatization, 82, 94, 95, 98, 101, 122,  
 186-188, 192, 193, 194, 196  
 Probability, 9, 10, 11  
 Prospective, 60, 72, 73  
 Prospective approach, 59, 60, 62, 69, 71,  
 72, 74, 75  
 Public management, 59, 62  
 Real exchange rate, 77, 79, 81  
 Reciprocity, 40, 53, 57  
 Redistributive, 55  
 Reductionism, 42, 43  
 Reform, 34, 70, 75, 91, 92, 96, 98,  
 104-106, 130, 137, 156, 175, 180,  
 182, 184, 186, 188-190, 192, 193, 196,  
 198, 200  
 Regional, 103, 135, 158, 160, 167, 168,  
 171-182, 187, 188, 191, 192  
 Regionalism, 167, 169, 171-173, 176  
 Regionalization, 100  
 Science, 2, 66, 70, 74, 83, 121, 128,  
 146-150, 152-154, 156, 157, 159,  
 164-166  
   Academy of Sciences, 16, 134, 136,  
   142, 147-149, 156, 157, 160, 161  
   Candidate of Sciences, 149, 154  
   Doctor of Sciences, 149, 154, 155  
   Grant, 146-149, 157-166  
 Scientific community, 146-147, 156-159,  
 164-166, 166  
 Self-organization, 26-32, 35  
 Slavery, 141, 143  
 Social  
   control, 128, 131-133, 138, 145  
   gain, 82  
   inequality, 104, 105, 130, 132, 144  
   pact, 78  
   selection, 26, 35  
 Sovereignty, 89, 168, 169, 175  
 State regulation, 199, 201  
 Structure, 2, 8, 11, 15, 17, 20, 22, 23, 26, 32,  
 45, 47, 57, 100-104, 106, 107, 113, 115,  
 118, 119, 121, 129, 134, 137, 139, 140,  
 173, 174, 176-178, 181-184, 201  
 Supervenience, 46, 47  
 Synergistics  
   social, 25, 26  
 Synergistic  
   attractor, 26, 27, 28, 29, 30, 32, 33  
   bifurcation, 26, 27, 29, 30, 35  
   detector, 26, 27, 35

dissipative structure, 26, 28, 30-32, 34  
model of global progress, 29, 30  
selector, 26,-28, 35  
superselection, 27, 28, 32  
suprahumanization, 33  
System, 1, 23, 24, 26, 28, 29, 34, 35, 37, 38,  
40, 45, 46, 49, 50, 52, 54-57, 59, 62,-68,  
70-72, 74, 75, 79, 82-85, 89, 91-95, 98,  
107-109, 111, 113, 114, 116, 119,  
120-125, 128-130, 133, 137-139, 146,  
171, 172, 175, 177-181, 185-188,  
191-193, 196, 198-201  
Tendency, 11, 25, 27, 29, 31, 32, 38, 58, 62,  
68, 71-73, 77, 81, 82, 85, 86, 88, 89, 107,  
116, 121, 131, 132, 137, 138, 146, 148,  
168, 169, 173, 175, 177, 179, 182-184,  
200  
Terrorism, 128-132, 139, 140, 144, 145  
Trade union, 56, 78, 82, 89, 105  
Transborder, 167, 171, 172, 175-183  
Transition, 91-98, 100-105, 119, 122,  
124, 125, 153, 166, 170, 180, 193, 200  
Uncertainty, 1, 2, 6, 7-14, 16, 20, 21  
Unemployment, 104, 105  
Universalizability, 50, 52, 53  
Vicarious strategies, 5, 12  
Welfare state, 54-56, 62, 64, 69

**SYSTEMS, STRUCTURES AND AGENTS  
UNDER GLOBALIZATION:  
European and Russian Tendencies**

Edited by Nina SLANEVSKAYA

Редактор-составитель  
Нина Михайловна Сланевская

**СИСТЕМЫ, СТРУКТУРЫ И СУБЪЕКТЫ  
В ПРОЦЕССЕ ГЛОБАЛИЗАЦИИ:  
Европейские и Российские тенденции**

Отпечатано с готового оригинал-макета в ЦНИТ «Астерион»  
Заказ № 406. Подписано в печать 29.10.2008 г. Бумага офсетная.  
Формат 60×84<sup>1</sup>/<sub>16</sub>. Объем 15,25 п. л.  
Санкт-Петербург, 191015, а/я 83, тел. /факс (812) 275-73-00, 970-35-70  
asterion@asterion.ru

