

# EMF 2014

23-26 October,  
Tbilisi-Georgia

## 2<sup>nd</sup> Eurasian Multidisciplinary Forum



Vol. 2  
CONFERENCE  
PROCEEDINGS



GRIGOL ROBAKIDZE  
UNIVERSITY



**PROCEEDINGS**

*Vol. 2*

**2<sup>nd</sup> Eurasian Multidisciplinary Forum, EMF 2014**

***23-26 October 2014, Tbilisi, Georgia***

*(Forum`s place: Grigol Robakidze University, Tbilisi)*

## **PROCEEDINGS**

*Vol. 2*

**2<sup>nd</sup> Eurasian Multidisciplinary Forum, EMF 2014**

***23-26 October 2014, Tbilisi, Georgia***

*(Forum`s place: Grigol Robakidze University, Tbilisi)*

**European Scientific Institute, ESI** (publishing)

### ***Impressum***

Bibliographic information published by the National and University Library "St. Kliment Ohridski" in Skopje, Macedonia; detailed bibliographic data are available in the internet at <http://www.nubsk.edu.mk/>;

CIP - 30(062)

COBISS. MK-ID 97598474

Any brand names and product names mentioned in this book are subject to trademark, brand or patent protection and trademarks or registered trademarks of their respective holders.

The use of brand names, product names, common names, trade names, product descriptions etc. even without a particular marking in this works is in no way to be construed to mean that such names may be regarded as unrestricted in respect of trademark and brand protection legislation and could thus be used by anyone.

PROCEEDINGS: 2nd Eurasian Multidisciplinary Forum, EMF 2014, 23-26 October 2014, Tbilisi, Georgia.

European Scientific Institute, ESI, 2014. - 2 vol. (294, 274 p.) : ilustr. ; 28 cm

Kocani, Republic of Macedonia

Email: [contact@eujournal.org](mailto:contact@eujournal.org)

Printed in Republic of Macedonia

**ISBN 978-608-4642-30-5**

Copyright © 2014 by the authors, ESI and licensors

All rights reserved. 2014

## **PROCEEDINGS**

*Vol. 2*

**2<sup>nd</sup> Eurasian Multidisciplinary Forum, EMF 2014**

***23-26 October 2014, Tbilisi, Georgia***

*(Forum`s place: Grigol Robakidze University, Tbilisi)*

# Table Of Contents:

<b>UNDERSTANDING ORGANISATIONAL CULTURES.....</b>	<b>1</b>
<i>Karen Cacciattolo</i>	
<b>REVIEW AND ANALYSIS THE INDICATORS OF GREEN CITY WITH NDVI (STUDY CASE SHEIKH TAPPEH NEIGHBORHOOD IN URMIA).....</b>	<b>8</b>
<i>Mostafa Basiri</i>	
<i>Mina Farokhi Someh</i>	
<i>Bahman Ghaderi</i>	
<i>Ali Zeynali Azim</i>	
<b>IMPACTS OF DIFFERENT SOCIAL SYSTEMS ON INCOME SITUATION OF HOUSEHOLDS.....</b>	<b>18</b>
<i>Birčiaková Nad'a</i>	
<i>Stávková Jana</i>	
<i>Antošová Veronika</i>	
<b>A FRAMEWORK FOR ORGANIZATIONAL ARCHITECTURE OF ELECTRONIC CITY AND ELECTRONIC MUNICIPALITY.....</b>	<b>27</b>
<i>Ali Zeynali Azim</i>	
<i>Mostafa Basiri</i>	
<i>Mina Farokhi Someh</i>	
<b>THE NEED FOR CULTURAL CHANGE: A CASE STUDY DISCUSSION.....</b>	<b>38</b>
<i>Karen Cacciattolo</i>	
<b>DOMESTIC TOURISM IN GEORGIA: QUANTITATIVE ANALYSIS.....</b>	<b>44</b>
<i>Nino Jerenashvili</i>	
<b>HOUSEHOLD STRUCTURE AND STUDENTS' ACADEMIC PERFORMANCE: A COMPARATIVE ANALYSIS OF CHILDREN RAISED BY GRANDPARENTS AND SINGLE PARENTAGE.....</b>	<b>52</b>
<i>OyetaKin Sylvia Olayemi</i>	
<b>MANAGEMENT OF ECOTOURISM IN GEORGIA.....</b>	<b>62</b>
<i>Maia Meladze</i>	
<b>THE ROLE OF GREEN ROOFS IN URBAN SUSTAINABILITY.....</b>	<b>69</b>
<i>Mina Farokhi Someh</i>	
<i>Mostafa Basiri</i>	
<i>Ali Zeynali Azim</i>	
<b>MERAB MAMARDASHVILI VS THE SOVIET MENTALITY.....</b>	<b>76</b>
<i>Lali Zakaradze</i>	

**A NEW VIEW ON SOCIAL ADAPTATION OF THE MILITARY, DISCHARGED FROM MILITARY SERVICE IN BULGARIA.....81**

*Venelin Terziev*

*Sevdalina Dimitrova*

**EUROPEAN VALUES AND GEORGIA (IN THE LIGHT OF MERAB MAMARDASHVILI'S VIEW).....99**

*Dodo (Darejan) Labuchidze*

**TRIAL OF DEMOCRACY VERSUS DEMOCRATIC TRIUMPHALISM: A FOCUS ON GHANA.....104**

*Collins Adu-Bempah Brobbey*

**HISTORY AND MODERNITY OF “AGENCE FRANCE-PRESSE” .....116**

*Khatuna Kacharava*

**A PARTICIPANT IN SOCIAL PROTEST. WHO IS HE AND WHY DOES HE PROTEST? AN ATTEMPT AT ANALYSIS.....120**

*Patrycja Lipold*

**NEW RUSSIAN IMPERIALISM AND GEORGIA: VIOLENT SPATIAL PRACTICES, DISRUPTED PLACES, AND DESTABILIZED SPACES.....127**

*Giorgi Tavadze*

**SIGNIFICANCE OF UNITY OF LINGUISTIC LEVELS FOR TEXT COMPREHENSION.....137**

*Nino Kemertelidze*

*Liana Koroshinadze*

**WRITERS AND THEIR WAYS WITH WORDS: MIGRATION AND LANGUAGE IN CONTEMPORARY GERMANY.....141**

*Adelheid R. Eubanks*

**ABOUT SOME UNKNOWN ASPECTS OF IONA KHELASHVILI'S (1778-1837) LIFE AND WORK.....146**

*Metropolitan of Poti*

*Khobi Grigol (Berbichashvili)*

**CONTRIBUTION OF ANTIM IVERIELI AND MIHAI ISHTVANOVICH TO THE CAUSE OF THE ORGANIZATION OF THE GEORGIAN PRINTING HOUSE.....153**

*Ivane Imerlishvili*

**SOME ASPECTS OF THINKING AND CORRECT WRITING CULTURE IN MODERN METHODOLOGY.....157**

*Manana Kajaia*

**PREPARATION AND PROPERTIES OF POLYPROPYLENE AND PA 6 COMPOSITES REINFORCED WITH ARMENIAN TUFF STONE.....161**

*Karnik Tarverdi  
Zaruhi Madoyan*

**ANATOMY OF CASSAVA LEAVES.....167**

*Eli Carlos de Oliveira  
Édison Miglioranza*

**NUMERICAL INVESTIGATION OF HEAT TRANSFER ENHANCEMENT IN A CIRCULAR TUBE USING RIBS OF SEPARATED PORTS ASSEMBLY.....172**

*Farhan Lafta Rashid  
Arkan Altaie  
Moayed R. Hasan*

**HUMANITY IN CONTEXT OF PROFESSIONAL LIFE.....184**

*Vasil Gluchman*

**EVALUATION OF THE CONDITION DEHYDROGENASE CYCLE OF TRICARBOXYLIC ACIDS WHILE ALLOTRANSPLANTING FETAL TISSUE MUSCLE TO RATS.....192**

*A.A. Yanchukova  
S.A. Petrov*

**CONTENTS OF FAD (FLAVIN ADENINE DINUCLEOTIDE) AND TOTAL AMOUNT OFFLAVIN AT ALLOTRANSPLANTATION OF EMBRYONIC MUSCLE TISSUE AT RATS.....196**

*S.N. Kobylnik  
S.A. Petrov*

**THE MECHANISMS INHIBITING PYRUVATE- AND OXOGLUTARATE DEHYDROGENASE COMPLEXES IN MUSSELS.....200**

*Olga O. Semenova  
Oleksander K. Budnyak  
Sergiy A. Petrov*

**CONDITION OF GLUTATHIONE (GSH) METABOLISM SYSTEM AT ALLOTRANSPLANTATION OF EMBRYONIC MUSCLE TISSUE AT RATS.....203**

*O.V. Kulibaba  
S.A. Petrov*

**EXTRACTION AND CHARACTERIZATION OF FREE NON-POLAR LIPID FRACTION OF CHOCOLATE USING A RAPID ANALYTICAL PROCEDURE.....208**

*Daniele Naviglio  
Lydia Ferrara  
Monica Gallo*



<b>NEW APPROACHES TO SOCIAL POLICY IN GEORGIA.....</b>	<b>216</b>
<i>Otar Gerzmava</i>	
<i>Levan Gorgiladze</i>	
<b>RESIDUAL METAL CONCENTRATIONS IN ENHANCED COAGULATION WITH FERRIC CHLORIDE AND ALUM FOR TOC REMOVAL.....</b>	<b>225</b>
<i>Mohammad Rafiee</i>	
<i>Alireza Mesdaghinia</i>	
<i>Amir-Hossein Mahvi</i>	
<b>LEADING CAUSES AND POSSIBLE ENVIRONMENTAL CONTRIBUTORS FOR END STAGE RENAL DISEASE IN AL-MADINAH REGION IN SAUDI ARABIA.....</b>	<b>232</b>
<i>Inass M. Taha</i>	
<i>Amr M. El-Shafie</i>	
<b>ETHICS OF SOCIAL CONSEQUENCES AND ISSUE OF THE PRINCIPLE OF HUMANITY IN MEDICAL ETHICS.....</b>	<b>240</b>
<i>Martin Gluchman</i>	
<i>Jan Kalajtzidis</i>	
<b>DEVELOPMENT OF THE HEALTH CARE SYSTEM IN ADJARA NEW APPROACH TO MANAGEMENT.....</b>	<b>249</b>
<i>Gogi Batiashvili</i>	
<i>Otar Gerzmava</i>	
<i>Roman Bolkvadze</i>	
<b>REMOVAL OF ARSENIC FROM AQUEOUS SOLUTION BY PHOTOCATALYTIC UV IRRADIATION.....</b>	<b>256</b>
<i>Mahsa Jahangiri</i>	
<b>STOMATOLOGICAL/DENTAL FEATURES OF VITAMIN D RESISTANT AND VITAMIN D DEPENDENT RICKETS.....</b>	<b>262</b>
<i>Vladimer Margvelashvili</i>	
<i>Iamze Taboridze</i>	
<i>Lali Aladashvili</i>	
<i>Nino Japaridze</i>	
<b>LINGUISTIC FEATURES OF PUN, ITS TYPOLOGY AND CLASSIFICATION.....</b>	<b>271</b>
<i>Meri Giorgadze</i>	

# UNDERSTANDING ORGANISATIONAL CULTURES

***Karen Cacciattolo***

D.Soc.Sci. (Leic.), M.Sc. (Trng & HRM) (Leic.)  
University of Malta, Malta

---

## **Abstract**

The paper aims to offer a better understanding of the various types of organisational culture. A brief introduction discusses the two main approaches for analyzing the culture of an organisation and includes the web model of Johnson & Scholes and the definitions of Charles Handy. The paper also presents the various classifications, levels and structures of organisational culture, namely those of Hofstede, Schein, Trompenaars, and Deal & Kennedy. All of these classifications, levels and structures offer an explanation of how an organisational culture works and the various definitions are included to enhance the meaning and how cultures work.

---

**Keywords:** Organisational Culture, Power in Organisations, Cultural Dimensions

## **Introduction**

The interpretive view and the structural view are two main approaches for analysing the culture of an organisation. The interpretive view, which follows the work of Goffman in Trevi-O (2003), implies that culture is shaped and continued through the organisational environment. An example of the interpretive perspective is the work of Johnson and Scholes (1993).

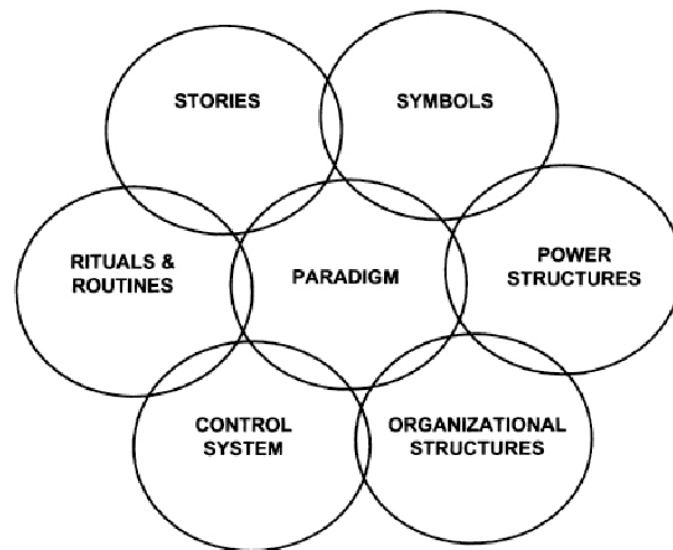
On the other hand, the structural view, which follows the work of Weber and Marx in Levine (2006), focuses more on how positions are structured within organisations. The focus, which comes from a functionalist/materialist school of thought, in this case is on how relationships are structured rather than how they are perceived. An example of the structural perspective is the work of Charles Handy (1993).

The work of Peters and Waterman (1982) also falls within the structural school of thought, and they argue that there is an informal link between culture and performance. Peters and Waterman suggest that decentralised organisations which place individuals at the centre of attention, and thus training and developing appropriately their employees, are the most successful.

## **The Interpretive Approach to Culture**

### **Johnson and Scholes' Cultural Web Model**

Johnson & Scholes (1993) offer a '*cultural web*' that identifies various basics (see Figure 1 below), which may be used to describe the culture of organisations (Johnson, 2000: 407):

**Figure 1** The cultural web of an organization

*'The Paradigm'* represents the purpose of the organisational business, its mission and its values and the *'Control Systems'* are the procedures set to control what happens in the organisation (Johnson 2000:405). Undoubtedly, organisations with a *'role culture'* would have a large amount of regulations and there would be more dependence on individualism in organisations with a *'power culture'*.

*'Organisational Structures'* deal with hierarchies and the way work flows through the organisation and they are likely to reflect power structures (Johnson 2000:406). *'Power Structures'* deal with the kind of power adopted in an organisation, the persons in charge of decision-making and how broadly power is spread in the organisation (Johnson 2000:406).

*'Symbols'* relate to logos and designs used in an organisation. However, these may extend to status symbols such as signposting-reserved parking spaces for top executives. Moreover, Gagliardi (1992), as cited in Johnson's (2000) article, argues that these visible elements influence the way in which employees make sense of events (2000:406).

*'Rituals and Routines'* refer to automatic repetitive routines such as management meetings and board of directors' reports (often these may become just a matter of routine only), and next come the simple decision rules which might be employed *'consciously'* (Johnson 2000:416).

Finally, *'Stories'* are anecdotes made up about employees and actions. These may reveal what is appreciated in an organisation. Moreover, people in an organisation may perceive charismatic leaders of the past and individualists as the standard model of behaviour (Johnson 2000:406).

All the above culture basics may overlie and power structures may depend on control methods, which may take advantage of the habits that create an account. Johnson (2000) postulates that as a model, the cultural web has been widely used for research as an analytical framework, since it includes practical elements (2000:406).

## **The Structural Approach to Culture**

### **Charles Handy and the Four Power Structures**

Charles Handy's method of looking at culture prompted researchers to use it to link organisational structure to culture. Handy identified four types of cultures, namely *'Power Culture'*, *'Role Culture'*, *'Task Culture'* and *'Person Culture'*.

According to Handy, *Power Culture* can be symbolised as a 'web' and it refers to control that is spread out like a network from the centre to the rest of the organisation (Handy 1993:184). Power cultures are often found in small entrepreneurial organisations such as property, trading and finance companies. When organisations adopt a power culture, rules and bureaucracies are kept to the minimum. These types of organisations are also political, where decisions are taken mainly upon persuasion rather than on bureaucratic or rational basis (Handy 1993:184).

*Role Culture* refers to a highly defined structured organisation in which employees have specified delegated authorities and which are offered security and predictability (Handy 1993:185). Handy (1993) describes the structure of this type of organisation as a 'Greek temple' since this culture works by logic and rationality (1993:185). Organisations with a role culture put their strengths in their pillars, their roles and areas of expertise. The pillars often include the finance department and the purchasing department, and the interaction between them is regularly controlled by rules and procedures, which are the major methods of influence (Handy 1993:185).

According to Handy (1993), these type of organisations form hierarchical bureaucracies, and power is derived from an individual's position and not according to one's expertise and professionalism. Furthermore, organisations with role cultures are slow in recognising the need for change, and if the need is recognised, it takes a long time for change to be implemented (Handy 1993:186).

*Task Culture*, on the other hand, is job oriented and it is present in organisations where individuals work as a team and power is derived only from expertise and only when required (Handy 1993:188). Handy (1993) represents this type of organisation as a 'net' in which much of the power and influence lies at the 'interstices' of the net (1993:188). The task culture puts complete emphasis on getting the job done and hence, this type of culture tries to assemble the suitable resources, the right employees at a suitable rank in the organisation, and to let them knuckle down (Handy 1993:188). This type of culture is very compliant, it is the most type in which managers in middle, and first levels like to work.

A *Person Culture* is quite unusual and it reflects organisations in which individuals believe to be superior to the organisation they are employed in (Handy 1993:190). A group of employees who are in accord often follows goals and objectives. Control systems and management hierarchies are not viable in these cultures except by mutual approval. Influence is mutual and the power-base is usually expert, meaning that individuals do what they are good at and are paid attention to on apposite matters (Handy 1993:190). Handy (1993) postulates that individuals within this type of culture are difficult to manage, and there is little influence that can be conveyed to tolerate on them (1993:191). This is because alternative employment is often easy for them to find due to their specialisations.

Handy (1993) argues that each of the above types of cultures may be fine, but sometimes, employees are often inflexible with regards to culture, meaning that they often believe in the myth that what works well in one organisation may also be successful in another (1993:183). In addition, Handy (1993) adds that an employee who is successful in one type of culture may not always do well in another (1993:204). Moreover, it is up to the executive of the organisation to handle all four cultures, to distinguish and to amalgamate within (Handy 1993:216).

### **Classifications of Organisational Cultures**

Other key figures in organisation culture, starting from the national types of culture of Geert Hofstede, the deep levels of culture of Edgar Schein, and other types such as those of Deal and Kennedy, and Fons Trompenaars, all offered various classifications of organisational cultures. These classifications aid in the understanding of organisations.

Furthermore, by understanding a typical organisational culture one may make improvements where a dysfunctional culture is identified.

### **Geert Hofstede and the Five Cultural Dimensions**

Geert Hofstede, who is probably the most important key figure in organisational culture, established the presence of local and national cultural groups that affect organisational behaviour. Hofstede also identified five cultural dimensions in his research, namely 'Power Distance', 'Uncertainty Avoidance', 'Individualism versus Collectivism', 'Masculinity versus Femininity' and 'Long versus Short-term Orientation'. These dimensions offer insights into various cultures so as to have a better understanding of these.

*Power distance* relates to the degree to which a low-status individual accepts and bears out the power and influence of high-status persons (Chhokar *et al* 2001:83). A high score on power distance suggests that there is a belief that a number of individuals exert larger amounts of power than others (Hofstede 2003:35). On the other hand, a low score replicates the outlook that all individuals should have equal rights.

*Uncertainty avoidance* replicates the degree to which people accept ambiguity and risk, and it relates to a culture where individuals are disturbed by change and threats (Chhokar *et al* 2001:82). A high uncertainty avoidance culture has a tendency to show worrying behaviours about the future, and employees in this type of culture hesitate to change their employer (Chhokar *et al* 2001:82).

*Individualism versus Collectivism* refers to the degree to which individuals are expected to defend themselves and it describes the manner in which an employee relates to collectivity (Hofstede 2003: 63). In other words, this dimension relates to the degree to which personal versus group objectives rule an individual's way of life. Several industrialized Western countries have an individualist culture, while the rest of the world, which include almost all developing countries, apply a collectivist culture (Hofstede 2003: 63).

Hofstede (2003) argues that employees in an organisation with an individualist culture are expected to perform according to their own interest, and the organisation of tasks should coincide with the employer's interest (2003:63). On the other hand, in a collectivist culture, the type of relationship between employees and their organisation is probable to be based on contractual obligation (Jackson 2001:1272).

*Masculinity versus Femininity* refers to the male and female traditional values, and it relates to how much assertiveness and material possessions are appreciated in a society in opposition to healthy interpersonal relationships and quality of life style (Chhokar *et al* 2001:83). For example, the accumulations of wealth and material possessions relate more to the male values and hence to masculine cultures (Handy 1993:196). On the other hand, feminine cultures value strong relationships with superiors and they strongly believe in group decision-making (Chhokar *et al* 2001:83).

*Long versus Short-term Orientation* relates to the significance attached to the future versus the past and present. In long-term orientation societies, individuals value savings and determination, whilst short-term oriented societies respect tradition, nepotism and reciprocation of donations (Chhokar *et al* 2001: 84).

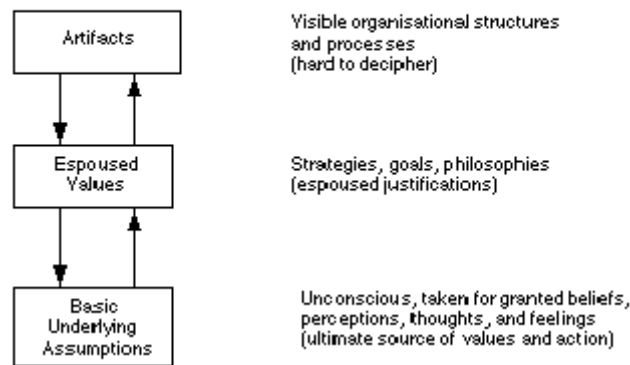
Hofstede's above dimensions signify that there are key differences that instigate individuals from differing cultures to have differing views. Hofstede (2003) illustrates his concern that an increase in the awareness of understanding the cultural environment would be beneficial (2003:5).

### Edgar Schein and the Three Levels of Organisational Culture

Edgar Schein (1985), (cited in Williams *et al* 1993), argues that culture is the most difficult organisational element to change (1993:13), and it cannot be explained in its entirety. Schein's model of organisation (see Figure 2 below) illustrates three cognitive levels of organisational culture (Hampden-Turner 1990:12-13). These levels offer a definition of what organizational culture really is.

Figure 2

#### Levels of Culture



Source: Clark, W. (2002)

The first level deals with artefacts or the physical attributes of an organisation (Williams *et al* 1993:138). These may include amenities, offices, furniture, rewards and credits, the dress code, and the visible interaction between employees themselves and other stakeholders.

The second level deals with espoused values or the apparent culture of the organisation's stakeholders (Williams *et al* 1993:139). This includes the expression of the mission statement, strategies, goals, philosophies and the functioning beliefs throughout the organisation.

The third inmost level deals with the organisation's implicit hypothesis. These are elements of culture that are not visible and which are unmentionable inside the organisation (Williams *et al* 1993:140). These may include unspoken rules that employees are not consciously aware of, but which are deep rooted and may provide an explanation to understanding why things take place in a particular way.

According to De Jonge (2006), surveys and interviews with employees are not enough to draw out these attributes, and other more in-depth means may be required, such as repetitive clinical sessions similar to a therapeutic rapport between a psychologist and a patient. Moreover, this level is the basic dynamic element of organisational culture that is often overlooked by organisational behaviourists.

### Fons Trompenaars and the Four Corporate Cultures

Trompenaars (1993) argues that the culture of a company includes the models and standards that influence how employees act, and the organisation's cultural setting is reflected by the corporate culture that a company adopts (Trompenaars & Hampden-Turner 2003:158). Trompenaars identified four ideal types of corporate culture: 'The family', 'The Eiffel Tower', 'The guided missile' and 'The incubator'. All four types suggest the different types of interactions that are present between employees and their organisation.

*The family culture* is a power-based oriented culture that focuses on people and is based on hierarchies (Trompenaars & Hampden-Turner 2003:158). In this type of culture, a

powerful father-figure type of head leads employees. Promotions in this type of organisation are given according to seniority and employees have a long-term relationship to the organisation, meaning that they are completely committed to the organisation and their senior colleagues.

*The Eiffel Tower culture* is a task-oriented culture based on hierarchies as well. Organisations adopt a rigid division of labour and specific job descriptions. Trompenaars & Hampden-Turner (2003) postulate that similar to the Eiffel Tower of Paris, these types of organisations give more importance to their structures than the purpose of the business (2003:166).

*The guided missile culture* is driven by tasks where the objectives are mostly cherished, but it is not based on hierarchies (Trompenaars & Hampden-Turner 2003:172). Employees here are expected to perform all that is required to achieve the company's goals and objectives, even though roles are not set in advance as in the Eiffel Tower type of culture.

*The incubator culture* values employee development. Organisations with an incubator culture have little structure and the minimum of hierarchies (Trompenaars & Hampden-Turner 2003:172). Employees demand authority only if their ideas are motivating and innovative.

Trompenaars (1993) argues that in reality, the four types of culture do not exist in isolation. This means that more than one type of culture may exist in an organisation. It may be suggested that in order for a business to be successful, an organisation ought to choose the positive basics of Trompenaars' four types of cultures.

### **Deal and Kennedy's Four Generic Cultural Types**

Deal and Kennedy (2000) measured organisations in respect of feedback and risk (2000:12), and they used these factors in order to suggest four classifications of culture: 'The Tough-Guy Macho Culture', 'The Work Hard/Play Hard Culture', 'The Bet your Company Culture' and 'The Process Culture'.

The *tough-guy* is a macho culture in which employees often take high risks and obtain fast feedback on their actions (Deal & Kennedy 2000:12). Rewards in this type of culture may be high even though it may be quite demanding to work within. An example of organisations with tough-guy cultures may be stockbrokers, due to their hectic monetary deeds.

The *work hard/play hard* culture represents sales organisations, which do their utmost for high quality customer service and employees, take few risks but receive fast feedback. Employees operating in this type of culture are required to be highly active and positive most of the time (Deal & Kennedy 2000:13).

In a *bet-your-company* organisational culture 'big stakes' decisions are taken but results, and whether the decisions were right or wrong, are known after a very long period of years (Deal & Kennedy 2000:13). Typical organisations may include development and construction businesses where the end result comes after a number of years.

The *process culture* reflects organisations that take no risks, there is very little feedback and employees are more concerned with how the work is done rather than what is the end result (Deal & Kennedy 2000:14). Organisations in the public service adopt this kind of culture, where high bureaucracy and red tape are present.

Similar to Trompenaars, Deal & Kennedy (2000) argue that no organisation corresponds specifically to any one type of culture and, hence a combination of all four may exist (2000:14). In addition, Deal & Kennedy (2000) postulate that organisations with strong cultures, '*artfully blend*' the essential positive characteristics of all four types and shape them up in a manner that guarantees top performance (2000:15).

## Final Observations

Various writers express scepticism about the functionalist and unitarist views of culture offered by the key figures mentioned previously (Williams *et al* 1993:12), especially the ones offered by Hofstede. Hofstede's dimensions have been criticised for the fact that his views do not cover diversity within national cultures, and he proposes less of a role for people in developing cultures. Moreover, there may be a touch of bias since Hofstede is a European and most other theorists are American.

In practice, an organisational culture is not completely 'homogeneous' (Williams *et al* 1993:23). This means that no organisation adopts a single type of culture and complex organisations might have sub-cultures that overlap and disagree with each other. Trompenaars and Deal & Kennedy agree with this fact. Handy illustrated the fact that employees who are successful in an organisation with a particular culture, may not be so in another, whereas Schein defined culture as an entity which is nearly impossible to measure, study or change.

## References:

- Chhokar, J. *et al* (2001) The Impact of Culture on Equity Sensitivity Perceptions and Organizational Citizenship Behaviour: A Five-Country Study. *International Journal of Value-Based Management*, 14 (1), pp. 79-98.
- Clark, W. (2002) *People Whose Ideas Influence Organisational Work*, Kent-UK.
- De Jonge, J. H. M. (2006) *Three Levels of Culture (Schein)*. 12manage B.V.-The Netherlands [online]. Available: [http://www.12manage.com/methods\\_schein\\_three\\_levels\\_culture.html](http://www.12manage.com/methods_schein_three_levels_culture.html) [2014, July 17].
- Deal, T. E. & Kennedy, A. A. (2000) *The New Corporate Cultures: Revitalizing the workplace after downsizing, mergers and reengineering*, London-UK, TEXERE Publishing Limited.
- Hampden-Turner, C. (1990) *Creating Corporate Culture: From Discord to Harmony*, Massachusetts-USA, Addison-Wesley Publishing Company.
- Handy, C. (1993) *Understanding Organizations*, London-UK, Penguin Books Ltd, 4<sup>th</sup> Edition.
- Hofstede, G. (2003) *Cultures and Organisations: Intercultural Cooperation and Its Importance for Survival: Software of the Mind*, London-UK, Profile Books Ltd.
- Jackson, T. (2001) Cultural values and management ethics: A 10-nation study. *Human Relations*, 54 (10), pp. 1267-1302.
- Johnson, G. and K. Scholes (1993) *Exploring corporate strategy - Text and Cases*, Hemel Hempstead: Prentice-Hall.
- Johnson, G. (2000) Strategy through a Cultural Lens: Learning from Managers' Experience. *Management Learning*, 31 (4), pp. 403-426.
- Levine, R. F. (2006) *Social Class and Stratification: Classic Statements and Theoretical Debates*, Rowman & Littlefield.
- Peters, T. J. & Waterman, R. H. (1982) *In Search of Excellence: Lessons from America's Best-Run Companies*, New York: Warner Books, pp. 223-24, 286.
- Trevi-O, A. J. (2003) *Goffman's Legacy*, Rowman & Littlefield.
- Trompenaars, F. (1993). *Riding the Waves of Culture: Understanding Cultural Diversity in Business*. London, UK: Economist Books.
- Trompenaars, F. & Hampden-Turner, C. (2003) *Riding The Waves of Culture: Understanding Cultural Diversity in Business*, London-UK, Nicholas Brealey Publishing, 2<sup>nd</sup> Edition.
- Williamson, A. *et al* (1993) *Changing Culture: New organisational approaches*, London-UK, Institute of Personnel Management, 2<sup>nd</sup> Edition.



## **REVIEW AND ANALYSIS THE INDICATORS OF GREEN CITY WITH NDVI (STUDY CASE SHEIKH TAPPEH NEIGHBORHOOD IN URMIA)**

***Mostafa Basiri, PhD Student Urban Planning***

Department of Architecture, College Architecture, Ilkhichi Branch,  
Islamic Azad University, Ilkhichi, Iran

***Mina Farokhi Someh, PhD Student Urban Planning***

Young Researchers and Elite Club, Ilkhichi Branch, Islamic Azad University, Ilkhichi, Iran

***Bahman Ghaderi, M.A Rural Planning***

***Ali Zeynali Azim, PhD Student Urban Planning***

Young Researchers and Elite Club, Tabriz Branch, Islamic Azad University, Tabriz, Iran

---

### **Abstract**

Increasing urbanization and rapid population expansion and its specific problems such as air and water pollution, environmental degradation, increase in mental illness, housing, infrastructure, education and transportation and other problems of urban society more than ever threatens this contrary which is against the principles of sustainable development and green city projects is one of the urban environment measures in this field that has achieved success in the world. The idea is that the city is a place that forms human opportunities and abilities and in addition each city has its own life, soul and even its own special character therefore each city must be recognized as a whole and form it as a place of residence. Specific problems of urbanization has faced urban management with challenges in the field of population density, housing shortages, environmental degradation, pollution and supplying infrastructure services and facilities, and issues of the Green City project is more involved which results less public participating in cities sustainable development.

This study analyzes the characteristics of green city's indexes in Sheikh Tappeh neighborhood in Urmia. This is a descriptive -analysis study and data collection was conducted by library documents and field survey. According to survey results Sheikh Tappeh neighborhood is far from favorable indicators of health status and standards of green city and city planning and public participation is required.

---

**Keywords:** Sustainable development, public participation, green city, Sheikh Tappeh neighborhood, Urmia city

### **Introduction**

Urban land accounts for a small fraction of the Earth's surface area but has a disproportionate influence on its surroundings in terms of mass, energy and resource fluxes (Lambin and Geist 2001). According to the Worldwatch Institute (2007), half of the world's population is now living in cities, and in the recent past, the main increase of the urban population occurred in underdeveloped and developing countries. Cities are the most obvious human environment, and now about 49 percent of global populations live in cities. But the context of cities as places that should have good quality for human life, the needs of its residents and positive impact on their life quality are in trouble, "cities are work tools but can not work properly any more and have lost their impact" Lokoboziyeh says in this regard

(Yaghfory, Rafieian and Razdasht, 2006, p:2). Relationship between urban planning and management and social health is not new but what has changed now is health crisis, whether in developed or developing countries ( Northridge, Sclar & Biswas, 2003, p:556 ) In second environment and health Conference at 1994 in Helsinki, the city's health and giving priority to other matters were discussed for first time. At this conference it was stated that many health issues that cities should left to local authorities until almost all decisions were taken in the central government (Lawrence & Fudge, 2009, p:15). This phenomenon is associated with several social and environmental impacts that have led to environmental degradation (Grimmond, 2007; Parnell et al., 2010). Green City project is one of these approaches to achieve this goal in both global and regional level. Green cities movement is considered as a creativity and initiative plan in the promotion of health, urban planning, urban ecosystem conservation and move towards decentralization of government to public sectors, the intersectional activities and social participation ( Leeuw , 2009, p:1 ). green city is known a city that by creating continuous development and physical conditions next to Social, environmental and efficient use of existing resources residents rise their ability while they are working together and support the community Participation in group life and do all their capabilities to deliver maximum. The idea of the Green City in order to create a massive change in environment protection and health promotion had been welcomed as a notable experts, professionals and city officials health issues (Tabibian, 1997, p:62). Therefore, the process of greening cities can be used to attenuate the effects of urbanization (Baycan-Levent et al., 2009). According to Chiesura (2004) , urban green areas are strategic to the quality of life in cities. Overall the goals of Green City's project is formed by frameworks and formulated guidelines for implementing the World Health Organization, in line with the slogan “Health for All” and the Ottawa Declaration for Health Improvement (MahmoudiNejad, 2009) and Global project becomes a movement at the national level. Thus, urban green areas should be an important element in the urban planning. These areas must be planned together with the other cities policies, such as transportation, housing and sanitation. The indicators are important instruments that can provide support to policy formulation for these areas in an urban planning context because they can provide information for all phases of the planning.

### **Importance and necessity of research**

Many cities, especially in developing countries have faced over recent decades with the destruction of the urban environment and increase health inequalities, social and economic scale among its residents. That is why these cities from the 1970s have been faced with urban poverty, and living standards and standards related to the environment in many cities are faced with the problem (Hatami and Nikpey, 2010, p:2) , one of the new approaches to sustainable development is health issues and the participation of the people. World Health Organization (WHO), knows Healthy human as some one who has physical and social health, spiritual and psychological benefits (Boone Kamp & others, 1999, p:104) Health planning is a relatively new term in this connection that is created by urban and regional planners who always trying to join urban environment with citizens physical and mental health (Thompson , 2007). Green city project was raised first time at 1984 by Professor Leonard Dohel at a conference entitled "Beyond basic health care" in Toronto, Canada ( Edris , 2003, p:166). In his view Green city is where the ecological perspective views have been incorporated into a comprehensive health and wellness and this attitude that the city will be green with different dimensions. In fact, advocates of urban development projects rely on logic that try to increase the sustainability of all aspects of economic, social and government considerable issues and look realistic (Pag, 2005). Participation and social empowerment are known as the core of the Healthy Cities movement which is considered the “health for all” principles of the World

Health Organization in the Ottawa Charter, which emphasizes health promotion and activities should be done by the people and not for the people ( Heritage & Dooris , 2009, p:45). Essentially green city is a city that it's empowers citizens are able to identify factors affecting their health and maximize their capabilities and the community to take action. In a healthy society there is always this belief that the mere absence of disease can not be an expression of healthy city. but a healthy city Citizens also should have the capability and high quality of life ( Services department of health & human, 2001, p:1 ). When we look at the history of cities and places we noticed that the neighborhood is always an element of active citizenship and has had effective relationships one of the main plans of Green City project is considering neighborhoods as one of the main components which form part of the city.

### Research objectives

General Target : Survey Indicators of Green City, cultural features in the context of leisure and education facilities , study features of literacy rates of social participation of people, biologic environmental problems , background of noise pollution and green space in Sheikh tappeh neighborhood in Urmia.

Table 1: Studies summary about green city in recent years

Region	Method	Goals	Scholar
Iran	Descriptive and analytical	Study population - social status of urban areas in Iran and comparison with the average level of developed countries	Gadami, Mustafa, Dive salar Asadullah (2010).
Isfahan	Survey	Identify and explain the function of community parks	Rabbani. Rasool, Nazari.Javad ,Mokhtari. Marziyeh (2011)
Tabriz	Descriptive and analytical	reorganize regional Green spaces and its necessity	Gorbani rasoul (2008)

### Research questions

Is Sheikh Tappeh neighborhood in a favorable status in the term of environmental indicators?

Is Sheikh Tappeh neighborhood in a favorable status in the term of social indicators?

Is Sheikh Tappeh neighborhood in a favorable status in the term of cultural indicators?

### The geographical features of study case

Urmia is the center of Urmia City and West Azerbaijan province, which is located in Center of Province, north of the city is Salmas, and tinsel from the south to the Mahabad city, it is limited from East to Urmia Lake and from West the border of Iran and Turkey (The Housing and Urban Development, West Azerbaijan Province, 2010). Urmia population since census in 2006, is about 583 255 people (Statistical Center of Iran, 2006). Figure 1 shows the position of Urmia city in iran:

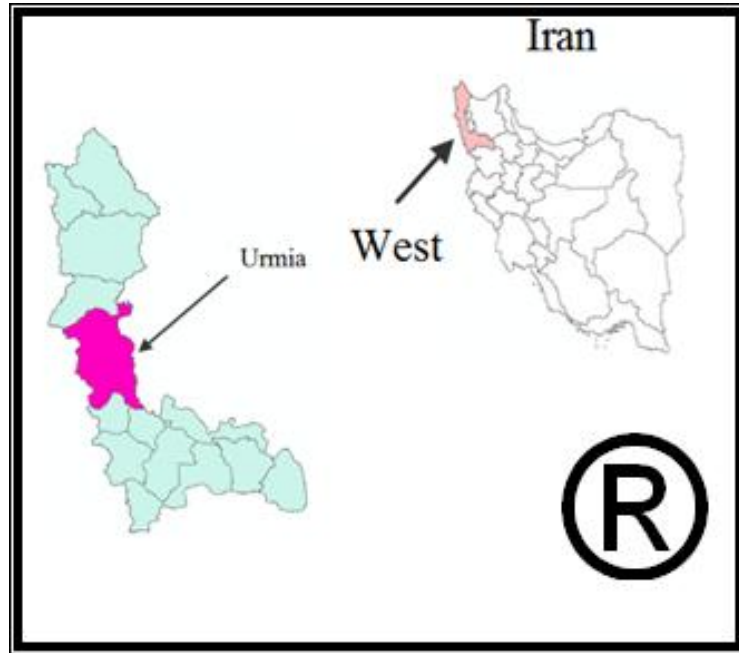


Figure1. The situation of the study area.

**Materials and study methods**

Current Study is a quantitative research and used methodology is descriptive - analytic. According to study subject two methods of data collection means library of documents and field research are used , theoretical foundations, assessment indicators and census data were collected by document library, and to determine the parameters in the neighborhood of Sheikh Tappeh, The field data have been collected by field forms such as questionnaires and interviews with residents and shopkeepers, local residents. In this paper, Landsat TM images captured in 1984 and 2011 are employed for digital image processing . Figure 2 shows Landsat TM image were used in this study .

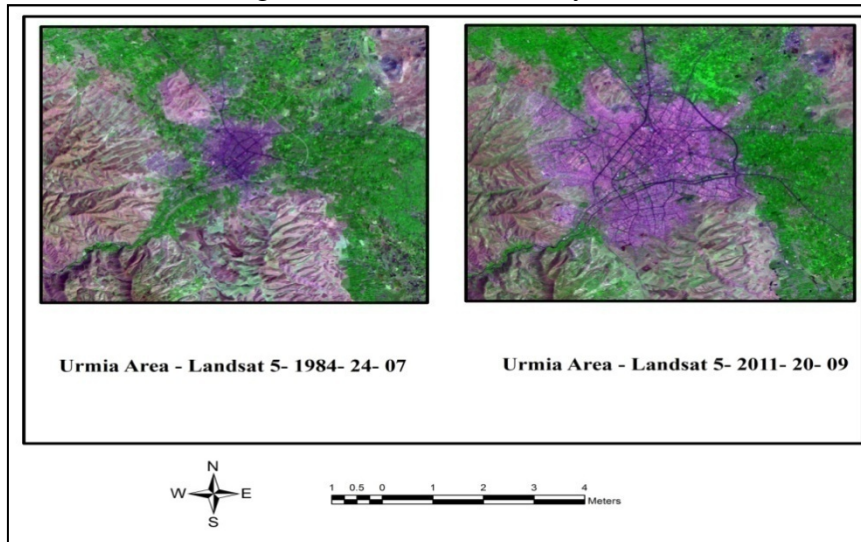


Figure2. 741 Landsat TM colour composite images from case study area

**The normalized difference vegetation index (NDVI)**

The Normalized Difference Vegetation Index (NDVI) is a numerical indicator that uses the visible and near-infrared bands of the electromagnetic spectrum, and is adopted to analyze remote sensing measurements and assess whether the target being observed contains

live green vegetation or not. The NDVI algorithm subtracts the red reflectance values from the near-infrared and divides it by the sum of near-infrared and red bands.

$$\text{NDVI} = (\text{NIR} - \text{RED}) / (\text{NIR} + \text{RED})$$

$$\text{NDVI} = \frac{\text{or } \text{BAND 4} - \text{BAND 3}}{\text{BAND 4} + \text{BAND 3}}$$

Theoretically, NDVI values are represented as a ratio ranging in value from -1 to 1 but in practice extreme negative values represent water, values around zero represent bare soil and values over 6 represent dense green vegetation.

### Performance indicators for healthy cities

World Health Organization indicators which are set for healthy cities have been classified in three major groups of environmental parameters, Socio - demographic indicators and health indicators. Indicators for each of these groups are shown in table No. 2:

Table 2: performance indicators of healthy cities

Environmental Indicators	Socio-demographic indicators	Health Indicators
Air pollution	The unemployment rate	Vaccination coverage levels of children 6 years old
Water quality	Percentage of disabled people who are employed	Total mortality (all ages)
Level of green space	Average education of boys and girls	Low weight infants birth
Recreational and sports venues	Adult Literacy	are there educational programs for health
Percentage of households areas living under the standard	Percent of those receiving less than per capita income	Infant mortality
Waste	Occupation	Nutritional quality

Indicators used for evaluation of healthy cities in different countries and regions, are different. For example, one the cities that has achieved remarkable success in the context of green cities project is the capital City of Taiwan, Taipei. The most important indicators which were considered in this town to perform healthy city program are pointed out as following:

Security : secure roads, secure work, reduced crime and violence, reduced events of fire.

Life: the Comfortable and Live environment , The Bike Riding, Park And Green Space , Physical Activities.

stability: Plumbing Sewage, Improvement Pavements, Developed Transportation And Quote General Recycling Waste, Reduced Water And Air Contamination .

Culture: the Cultural Legacies (Taipei Healthy City Project, 2005).

To evaluation indicators of Green City in another research which had been done in Korea Jin-ju , studied index was classified in four Category Physical, Economic, Social And Physical Health Environment Indicators Classification That Each Includes several Factors Like :

Physical Environment: The per capita park space per person, drinking water supply, road cycling, the amount of waste produced, GDP, unemployment rate, exports of agricultural products.

Social Economic: the number of components, number of teachers per students, participation rates in social activities, crime rates.

Physical health: physical activity, number of physicians, the birth rate, the proportion of elderly population to total population. ( Healthy Initiative of Jin- Ju city-Korea, 2005) .

The main studied themes in this research are using sources such as the World Health Organization, the Green City project in Developing countries such as Africa, Korea, Taiwan and markers in domestic projects, including the Zarand city (Kerman) and Saveh city (Markazi Province) and also markers of the case study as a comparative analysis of indicators of a healthy city in Global-National scale (study case, urban areas of Iran), they were extracted and combined other indexes and 3 Social, environmental and cultural indicator Groups with many features were created to analyze the indicators of Green City in the Sheikh Tappeh neighborhood in Urmia. Urmia is one of the Iranian cities which located in West Azarbaijan Province and is also the center of the city of Urmia. According to census of 2006, 577, 307 people live there and considered as the tenth most populous city in Iran. Urmia city is considered the most important region of West Azarbaijan province that is located in the centre of province. The center of this city is located at 45 degrees and 2 Minutes East length and width of 37 degrees and 32 minutes north and 1332 meters elevation above sea level. Urmia is limited to Salmas in north, Oshnavieh in south, from East to Lake and from West to the territory of Turkey. Lake in this city is considered the most important natural, economic and tourism phenomena. Urmia (center of West Azerbaijan province) is located in the plains by 30 km length and 70 km wide next to azure Lake of Urmia. The plain is covered by sediments of river Barandoz, river shaharchay, river Roche, river Nazlou that full it regularly every year. History and settlement of this town in the Caucasus, Armenia, Minor Asia and Mesopotamia and the fertile land and favorable climate, make it very special. Ways of access to this area are:

- The Urmia - Salmas road, with length of 80 kilometers.
- The Urmia – Mahabad road, with length of 137 km.
- The Urmia-Tabriz road.

Urmia City also has an international airport. Studied neighborhood is located in the southwest part of Old Town of Urmia city with a population of 5420 people and limited to Molavi neighborhood in East, Shaharchay neighborhood in north, Behdari neighborhood in south and Alborz neighborhoods in west. This neighborhood, due to exposure to the appropriate position (Forest Park) always is one of the cities traffic zones.

### **Theoretical Foundations**

Green city project is a long term project and trying to put the wellbeing of people-centered urban development and create strong and full support for public health at the local level. The project aims to create a city with a relatively good condition and ensuring citizens about preserving and promoting health. Healthy city is an arena for public policies and coordinate administrative talents and creativity to provide a healthy environment for growth and health of citizens to provide appropriate space (Zarrabi and Ghanbari, 2009, p:5).

Introduction to healthy cities in the World Health Organization will introduce a model like this:

- Clean and safe physical environment and quality of affordable housing.
- Safe neighborhoods and supporting each other.

The proper use of public participation and people are living in areas that affect health and welfare.

- Basic needs (food, water, housing and employment) for all citizens.
- Despite the high level of health (low disease prevalence).

Professor Duhel also expression a healthy city's parameter as follow:

Citizen participation in decision making and formulation of policies and decentralization of power.

- The relationship between all components and all citizens by urban managers.
- Protecting and improving their infrastructure.

Healthy cities are multidimensional and have complex economic relationship between its components (Nickpay the Hatami neJad, 2010, p:2).

### **Population and sample**

Population: 5420 persons are residents in the Sheikh Tappeh neighborhood of Urmia. Considering there are different formulas to obtain the sample size Cochran IV sampling method is used in this study, so that the population ratio of men and women, the literate and illiterate population and female population were obtained 7 , 136 and 73 ,the average of these there values was used as samples size. About 200 questionnaires were randomly distributed among local residents.

### **Analysis of research findings**

About the questions related to social, environmental and cultural indices of Sheikh Tappeh neighborhood in general can be said many of the indicators and components of Sheikh Tappeh neighborhood are far from healthy standards and per capita in cities. The following parameters can be presented to compare the current situation of Sheikh Tappeh neighborhood with desirable ones (existing standards or conditions in developed countries):

### **Environmental indicators**

One of the most important issues in this neighborhood pollution and noise pollution was noted due to excessive vehicle traffic. Other environmental indicators shows that the situation is relatively favorable in the neighborhood, because the per capita green space is located in Forest Park in this neighborhood with desirable green space. Other mentioned problems are lack of venues and places of recreation and sports venues per capita in the neighborhood with 0.25 square meters per person is far from per capita standard ( 5.2 square meters per person). In general it can be said Sheikh Tappeh neighborhood is not in a favorable situation in the term of indicators of environmental conditions.

### **Social - population indicators**

5420 people live in the Sheikh Tappeh neighborhood and sex ratio is 0.85 ie 85 women per 100 men. Literacy rate in this neighborhood is about 96%. In the term of experience in participation in social activities, most of the residents said they either have experience or willingness to participate in these activities so that approximately 78% of residents have noted to participate in social activities. One of the factors that most residents were referred to was shortage and lack of street lighting and poles in most places and streets. Other deficiencies noted in the social indicators were lack of parking, streets and sidewalks crossing the dam and pointed out the lack of police station, so that 10 theft cases were mentioned by residents. Thus, in response of research question that is related to neighborhood social status can be pointed out that social status of neighborhood is not desirable.

### **Cultural indicators**

Approximately 83% of residents had no knowledge about Cultural - Social programs of municipality in this neighborhood. In terms of leisure facilities for young people many educational - cultural deficiencies was seen in this area, most neighborhood residents called for the establishment of libraries and cultural complexes; Considering cultural indicators of green city status of Sheikh tappeh neighborhood in the term of cultural indicators is desirable.

### **Image preprocessing**

High-precision geometric registration is the basic requirement of image preprocessing (Guindon et al., 2004). First, the Landsat TM image was geometrically corrected according

to the Universal Transverse Mercator projection at 30 30-m resolution, using second-order polynomial and bilinear interpolation. Forty ground control points were collected from the 1:50,000 topographic map.

Table 3. Summary of image classification performed in this study (Hectares).

Class	Land use Type	1984	2011
1	Orchards	1301.23	10794.06

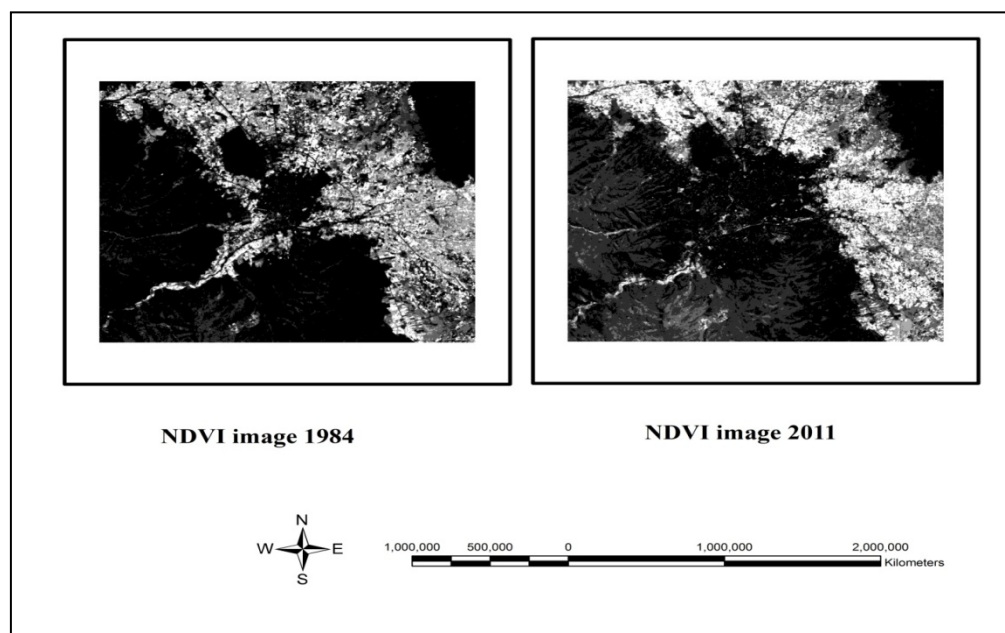


Figure 3. The image NDVI of the study area.

Resource: Atuthors, 2012.

## Conclusion

This article reviews the characteristics of green city in Sheikh Tappeh neighborhood in Urmia. First, by using literature-based studies indicators of green city which introduced by the World Health Organization and multi-country experience in this field, was extracted and then they were distributed among residents of the Sheikh Tappeh neighborhood in the form of questionnaires. Based on data collected at different stages of this research, particularly with regard to data analysis, survey questionnaires health indicators of Sheikh Tappeh neighborhood were identified, that show Sheikh Tappeh neighborhood is relatively in favorable situation in terms of cultural factors but other indicators of health (physical indicators of environmental, social and demographic indicators) are far from optimal conditions. Also there is significant relationship between knowledge of cultural and social programs of the municipality and willing to participate in community affairs. The results with NDVI showed that the proposed approach separated urban areas from green and orchards land to some extent.

## Suggestions

Creating Institutions and centers of cultural, educational and health programs to increase awareness in the residents.

Developing public transportation.

Creating the sports halls.



**References:**

- Alberti M, Booth D, Hill K, et al: The impact of urban patterns on aquatic ecosystems: an empirical analysis in Puget lowland sub-basins. *Landscape and Urban Planning*, 80: 345-361, 2007.
- Baycan-Levent T, Vreeker R, Nijkamp P: A multi-criteria evaluation of green spaces in European cities. IAEES, 2009.
- Boonekamp, M. G. , & others: Healthy cities evaluation: the co-ordinators perspective. *Health promotion international*. P104, 1999.
- Chiesura A.: The role of urban parks for the sustainable city. *Landscape and Urban Planning*, 68(1) : 129-138, 2004.
- Edris, A. : promoting quality of life through participation in healthy cities programme. *pertanika J. Soc. Sci& hum* ,p 166, 2003.
- Feghi Farahmand, Nasser. : Healthy City management with a strategic approach to planning. *Second National Conference healthy city of Sabzevar* . P 2, 2010.
- Gadami, Mohammad., : Comparative indicators of a healthy city, national and global scale (sample urban areas of Iran and developed countries) *Muslim Geographers Conference*. Zahedan, Sistan and Baluchestan University: Pages, 11.5, 2010.
- Grimmond S. : Urbanization and global environmental change: local effects of urban warming. *The Geographical Journal*, 173: 83-88, 2007.
- Heritage, Z. , & Dooris, M. community participation and empowerment in healthy cities. *health promotion international*, 2009.
- Housing and Urban Development : Revised layout plan of the city of Urmia, architecture and urban design. *Journal of Consulting Engineers*, 2010.
- Innovative monitoring and evaluating the healthy cities initiative of Jin-Ju city-Korea. 2005.
- J. Lawrence, R., & Fudge, C. : Healthy cities in global and regional context. *health promotion international* .15, 2009.
- Lambin, E.F. and Geist, H. : Global land use and land cover change: what have we learned so far? *Global Change News Letter*. 46, pp. 27–30, 2001.
- Leeuw. E. : Evidence for Healthy Cities: reflections on practice, method and theory”. *Oxford Journals. Medicine*. Pp. I 19- I 36, 2009.
- Mahmoudi Nijad, Hadi : Agenda 21 implementation process of interaction and healthy city with strategies and recommendations presented in contemporary Iran. *Journal of Environmental Science and Technology*, 2009.
- Mary E. Northridge, Elliott D. Sclar, and Padmini Biswas : Sorting Out the Connections Between the Built Environment and Health: A Conceptual Framework for Navigating Pathways and Planning Healthy Cities”. *Journal of Urban Health: Bulletin of the New York Academy of Medicine*, 2003.
- Nikpay, Vahid. Hatami Nejad, Hossein : Indicators of sustainable cities (Healthy City) in the neighborhood Qasim Abad, Yazd, the National Conference of City Health, Sabzevar. P 2 , 2006.
- Northridge, M. , D. Sclar, E. , & Biswas, P. : sorting out the connections between the built environment and health: a conceptual framework for vavigating pathway and planning healthy cities. *Urban health*.p 556, 2003.
- Parnell, S., Simon, D. : National urbanisation and urban policies: necessary but absent policy instruments in africa. In: Pieterse, E. (Ed.), *Urbanization Imperatives for Africa: transcending Policy Inertia*. African Centre for Cities, Cape Town, 2010.
- Pag, cedric : Sustainable cities in developing countries. *Urban and Architectural Studies and Research Center*, 2004.
- Rabbani. Rasool, Nazari.Javad and et al. : Sociological explanation of the function of urban parks, case study: Esfahan city parks. *Jurnal Urban and Regional Studies and Research*, 2010.

- Roderick J. Lawrence, and Colin Fudge : Healthy Cities in a global and regional context. Oxford Journals, 2009.
- Services, department of health& human. p1, 2001.
- Shiyeh, Ismaeel : Introduction to urban planning. Tehran: Iran University of Science and Technology, 2009.
- Statistical Center of Iran : General Census of Population and Housing, Western Rbayjan province, 2006.
- Tabibian, M. : Sustainability indicators and the symbol of the Eco, Journal of Environmental Studies. Year 25, 1998.
- Taipei Healthy City Project. : Taipei Healthy City Project& profile, 26-63, 2005.
- Thompson, S. : Health planning forum, 2007.
- Worldwatch Institute. : State of the world 2007: Our urban future. Washington, USA. Yli, 2007.
- Pelkonen V, Niemel J. : Use of ecological information in urban planning: experiences from the, 2006.
- Yaghfory, Hussein. Rafieian, Sajjad and et al : Public spaces in order to increase social cohesion factor in a healthy city, the second Conference National City Sabzevar, 2006.
- Zarrabi, Asgar. Ghanbari, Mohammed : Healthy city. Geographic and Social Science Research Center, Sabzevar Teacher Training University. P 5, 2010.

# IMPACTS OF DIFFERENT SOCIAL SYSTEMS ON INCOME SITUATION OF HOUSEHOLDS

*Birčiaková Nad'a, Prof.*

*Stávková Jana*

*Antošová Veronika*

Mendel University in Brno, Czech Republic

---

## Abstract

Social policy affects the life of every individual in society. Its main aim is to eliminate social inequality. Success in fulfilling such a goal is influenced by the applied social system. Income inequality is the most frequently used expression of social inequality. Authors of the presented paper describe analysis of income and expenditure of households collated in various quintiles, taking into account the effect of social transfers on the total amount of income. Respecting fundamental social systems and monitoring their effectiveness, as the topic of interest income data from the Czech Republic, UK, Sweden and Germany was chosen. The data was taken from Eurostat, in the period of 2003-2013. Conclusions are compared with results of the income poverty analysis as the income poverty is the most common form of poverty in the EU countries.

---

**Keywords:** Income, poverty, social system

## Introduction

Changes in economic development in the European Union in the last ten years have had high social impact on selected population groups. It is a very difficult assignment to find the right concept of protecting vulnerable groups of population. Not only has it depended on the common frame of social policy in the European Union but also on the approach of every government.

Stávková et al (2013) state that social policy is a powerful instrument which can significantly reduce income problems of households. However, it is not only how much is spent on social protection, but also towards which social groups the social policy is oriented. If it is incorrectly focused, it generates economic inactivity and slows down economic growth, and thus reduces the standard of living. Kennett (2013) adds that social policy is not only about ameliorating the impact of inequality but it also contributes to social division in society.

Davide Ricardo argued that the primary aim of economy should be to precisely understand the factors which determine the income distribution between social classes. Nowadays, this term refers to the functional distribution of income, since that is made according to the factors in the production function. (Wolff, 2009).

For the purposes of this article 4 countries have been selected - the Czech Republic, Germany, the UK and Sweden. These are representatives of various approaches to social policy in the European Union. The aim of this paper is to evaluate the effectiveness of social policy in every monitored country.

## Methodology

Given the aim of this document, the basic source of data is the results of research conducted by the European Union Statistics on Income and Living Conditions (EU SILC) provided by EUROSTAT, the statistics authority of the European Commission. EU SILC contains both objective and subjective data on income, poverty, social transfers, material deprivation, and other aspects of living conditions. The statistical researches are obligatory for all the countries of the EU. The basic unit of the research is a household. The basic variable is a yearly disposable income of a household, and following countries – representing various social systems – were selected for fulfilling the aim of the assignment: Germany, UK, Sweden, and the Czech Republic. The minimum number of monitored households in the subject countries for an effective analysis of the income situation is given in the Table 1. The research was conducted in 2003–2013.

Table 1: The minimum number of monitored households by country (Eurostat, 2014)

Country	Number of households
Czech Republic	4,750
Germany	8,250
United Kingdom	7,500
Sweden	4,500

Social transfers refer to social help provided by central, state or local institutions. They are intended to reduce the financial burden following from a number of risks or needs. Social transfers include retirement pensions, widow's/widower's pension, other pensions, unemployment benefits, benefits for families, sickness and disability benefits, benefits for education and housing, social help etc.

The monitoring of expenses of households is based on the data providing information on expenses of households on individual items according to the COICOP (Classification of Individual Consumption by Purpose) in percentage per individual member countries of the EU. Thanks to this classification, the data obtained are mutually comparable. The individual items according to the COICOP are listed in the Table 2.

Table 2 : Individual items according to the COICOP (Eurostat, 2014)

FOOD AND NON-ALCOHOLIC BEVERAGES	bread and cereals, meat, fish, milk, cheese and eggs, fruit, potatoes, vegetables, sugar, jam, honey, chocolate and confectionery, food products, coffee, tea and cocoa for consumption at home, mineral waters, soft drinks, fruit and vegetable juices, non-alcoholic beverages
ALCOHOLIC BEVERAGES, TOBACCO AND NARCOTICS	spirits, wine, beer, alcoholic beverages for consumption at home, tobacco, narcotics
CLOTHING AND FOOTWEAR	clothing materials, garments, other articles of clothing and clothing accessories, cleaning, repair and hire of clothing, shoes and other footwear, repair and hire of footwear
HOUSING, WATER, ELECTRICITY, GAS AND OTHER FUELS	rentals for housing, maintenance and repair of the dwelling, water supply and miscellaneous services relating to the dwelling, electricity, gas and other fuels
FURNISHINGS, HOUSEHOLD EQUIPMENT AND ROUTINE MAINTENANCE OF THE HOUSE	furniture, furnishings, carpets and other floor coverings, household textiles, household appliances, glassware, tableware and household utensils, tools and equipment for house and garden, goods and services for routine household maintenance
HEALTH	medical products, appliances and equipment, out-patient services, hospital services, other treatments, health products and services, other health related incurred costs
TRANSPORT	purchase of vehicles, operation of personal transport equipment, transport services
COMMUNICATIONS	postal services, telephone and telefax equipment and services,
RECREATION AND CULTURE	audio-visual, photographic and information processing equipment, other major durables for recreation and culture, other recreational items and equipment; gardens and pets, recreational and cultural services,

	newspapers, books and stationery, holidays
EDUCATION	pre-primary and primary education, secondary education, post-secondary non-tertiary education, tertiary education, education not definable by level
RESTAURANTS AND HOTELS	catering services, accommodation services
MISCELLANEOUS GOODS AND SERVICES	personal care, prostitution, personal effects, social protection, insurance, financial services, other services

The curve of the income situation of households is expressed using the basic model of the linear regression analysis where the medium value of dependent Y variable is bound with one independent T variable in following relation:

$$E(Y) = a + bT + \varepsilon_t$$

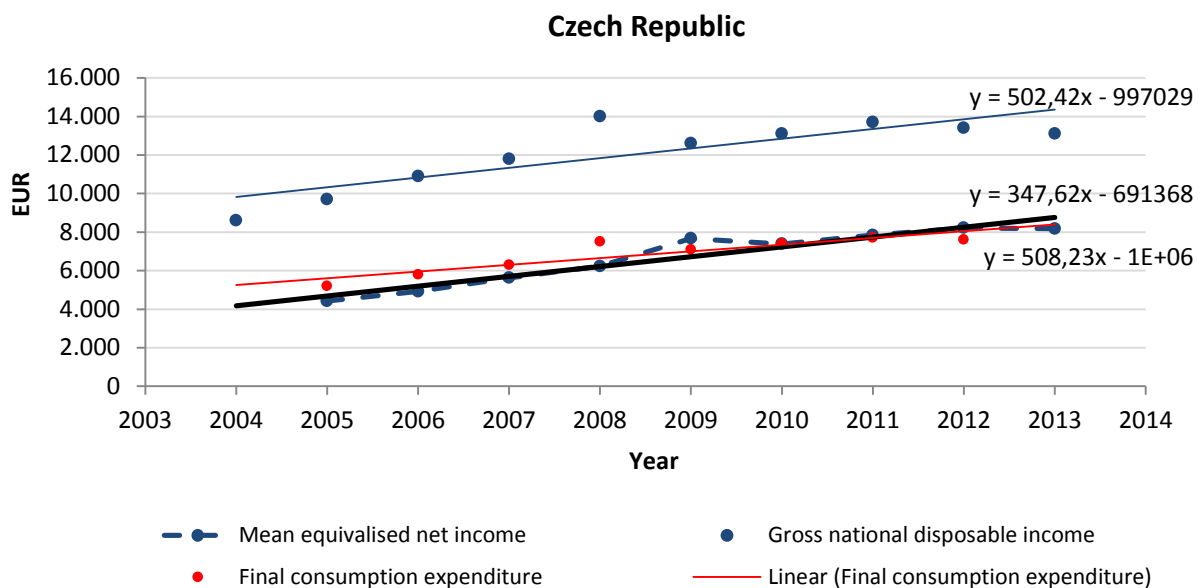
Where b stands for a direction of the straight line and  $\varepsilon_t$  stands for a residual element.

When selecting a suitable model of the trend function the structural parameters are estimated. The regression models are used also for expressing the income situation in individual quantiles 1–4, t-statistics to determine suitability of parameters of the regression function.

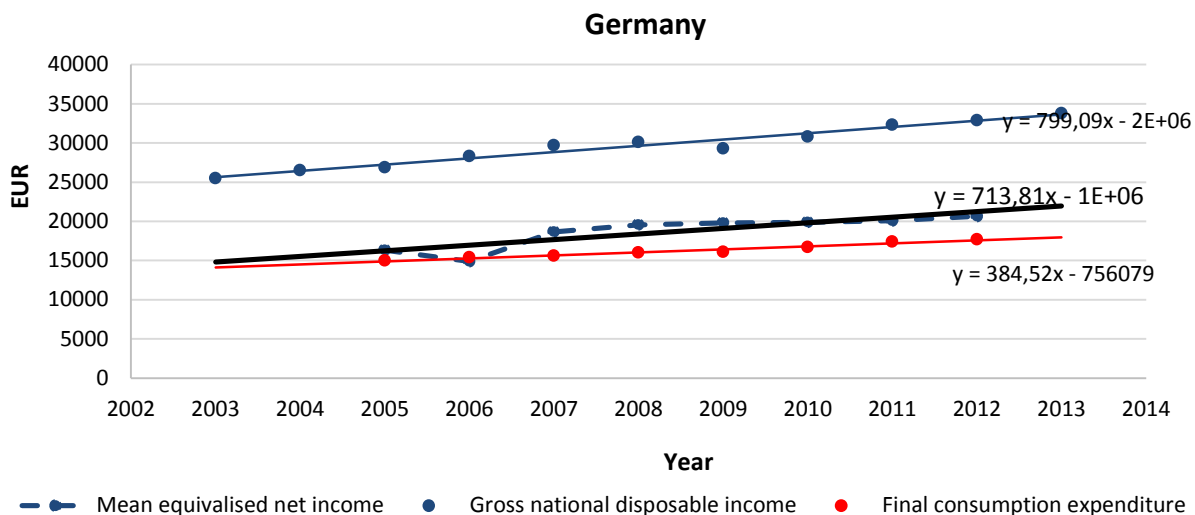
**Results**

The income situation of households is considered a decisive quantitative indicator of living conditions of households. This indicator can be used in various ways for evaluating the fiscal policy, social policy, and efficiency of social systems. This indicator may be put in various connections in order to create more interpretations of its meaning; these interpretations eventually enable various evaluations of living conditions not only in individual countries of the EU, but also in the given country. The authors would hereby like to contribute to a higher level of transparency and improvement of information value of indicators such as income level, poverty line, number of households endangered by poverty, sum of expenses, and mainly amount of social transfers.

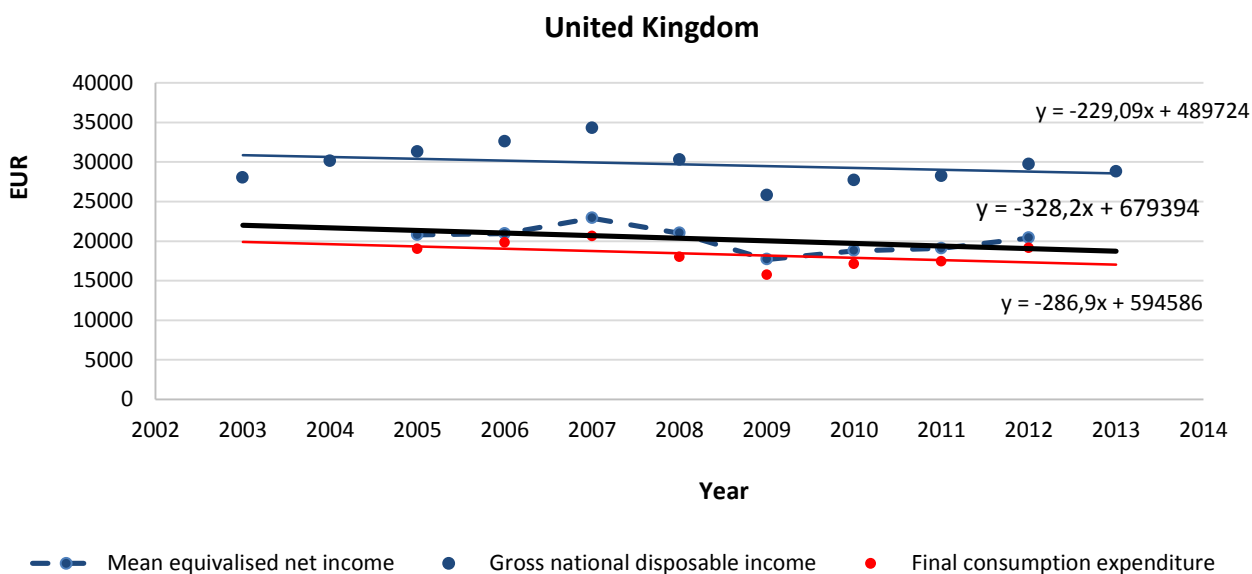
A significant role in making an opinion on the level of income of households is determined by the amount of social transfers as well as the amount of expenses on satisfying the needs of households. The yearly amount of income per household, yearly amount of income without social transfers, and yearly amount of expenses of households in the monitored countries in 2003–2013 are shown in graphs 1–4.



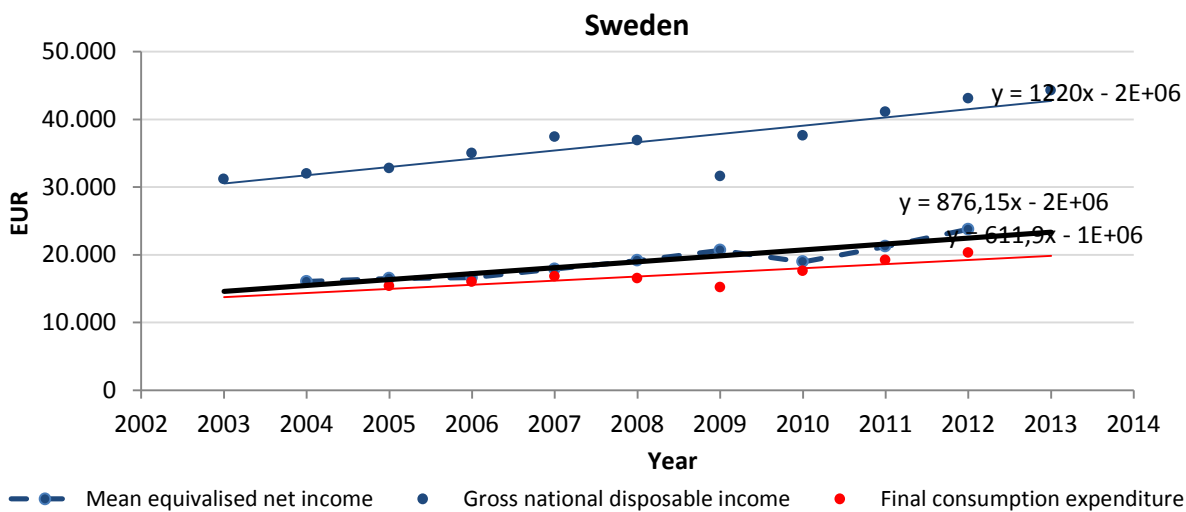
Graph 1: Income and expenses in the Czech Republic, period 2003-2013 (own work)



Graph 2: Income and expenses in Germany, period 2003-2013 (own work)



Graph 3: Income and expenses in the United Kingdom, period 2003-2013 (own work)



Graph 4: Income and expenses in Sweden, period 2003-2013 (own work)

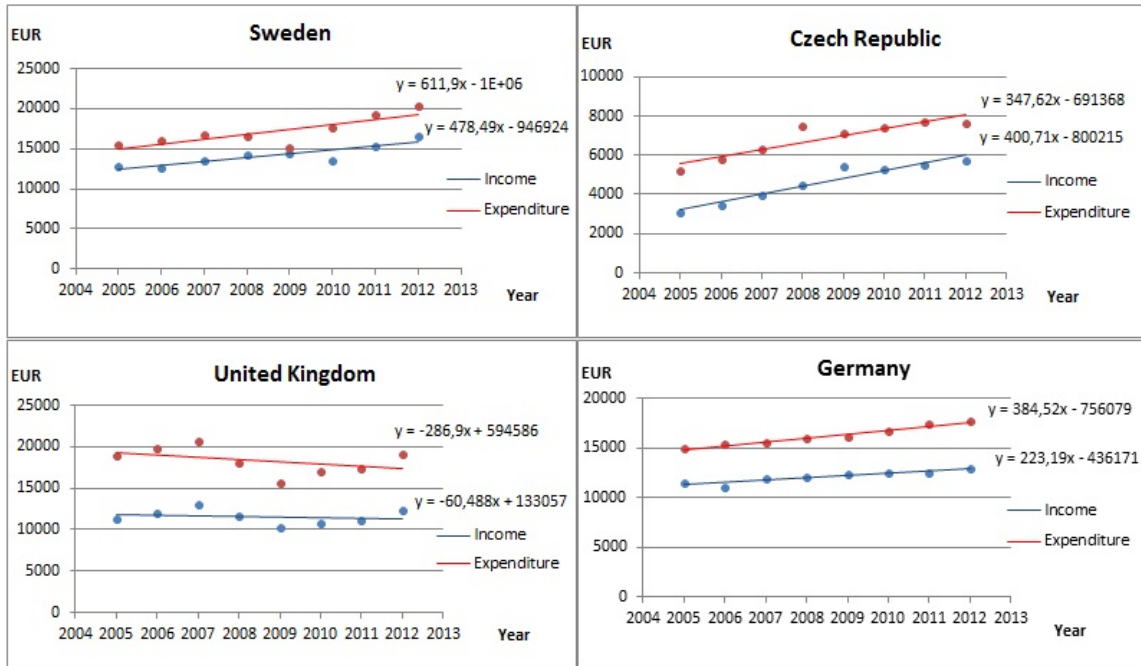
From these data it follows that the countries of what used to be EU-15 reached the range of 15–30 thousand euros in terms of the level of achieved average yearly income per household in 2003–2013. In the same period and concerning the same indicator, the Czech Republic reaches the level of 4–13 thousand euros. (This fact is not mentioned concerning the statement that the Czech Republic has one of the lowest percentages of households endangered by poverty; also, the method of calculation of the poverty line is not explained, and the substantial influence of frequencies of low-income households on the poverty line is not emphasized.) All these monitored countries show a positive trend of the development of the income situation in time, except for UK. From the regression function parameter, which expresses a unit yearly change, it follows that the biggest yearly growth of the average yearly income is reached by Swedish households, followed by households in Germany and in the Czech Republic. UK in the given 10-year period showed a drop in the average yearly income of households of around 230 euros.

The price level, purchasing power of inhabitants, and ability of households in individual countries to satisfy their needs is expressed by the indicator of average yearly expenses of households – graph 1–4. These data also show a positive trend of the development (expected), again except for the households in UK. The average yearly increase of expenses is the highest in Sweden, but it reaches less than one half of the increase of the level of income. The ratio between the income and expenses shows the best income situation in Sweden followed by Germany.

The influence of the state, its redistribution in form of social transfers can be deduced from the graph 1–4 which also shows the average yearly income of households without social transfers. From the values reached, recorded, and graphically shown it follows that the households in Sweden and Germany satisfy all their needs, i.e. also those whose income is influenced by the amount of social transfers. For the biggest part of the period of monitoring this situation was recorded also for the households in UK, and from 2008 also in the Czech Republic.

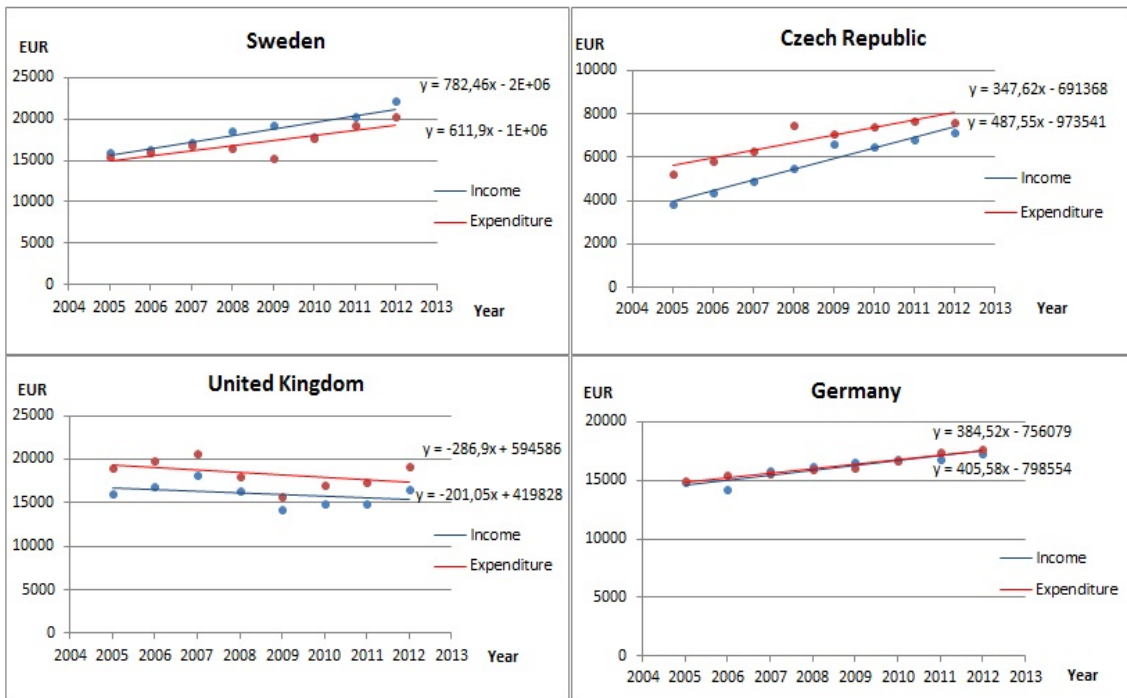
Given that all the data from the graph 1–4 show yearly averages of income of all the households in the researched set, it is necessary to deal with the distribution of income values in the whole set and differences between income and expense parts of households in individual quantiles of the set in order to find out about the efficiency of the social systems. The amount of income and the amount of expenses of households in individual years, countries, and quantiles is shown in the graphs 5–8.

### Income and expenditure of households in 1. quintil



Graph 5: Income and expenditures in the 1<sup>st</sup> quintil by country

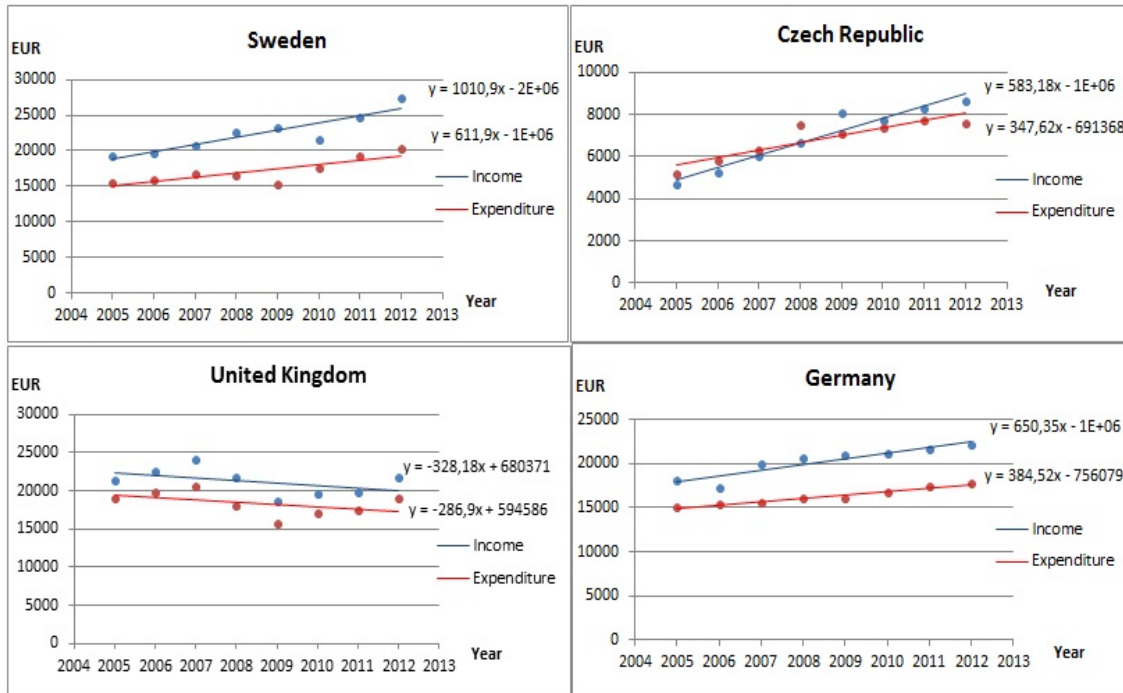
### Income and expenditure of households in 2. quintil



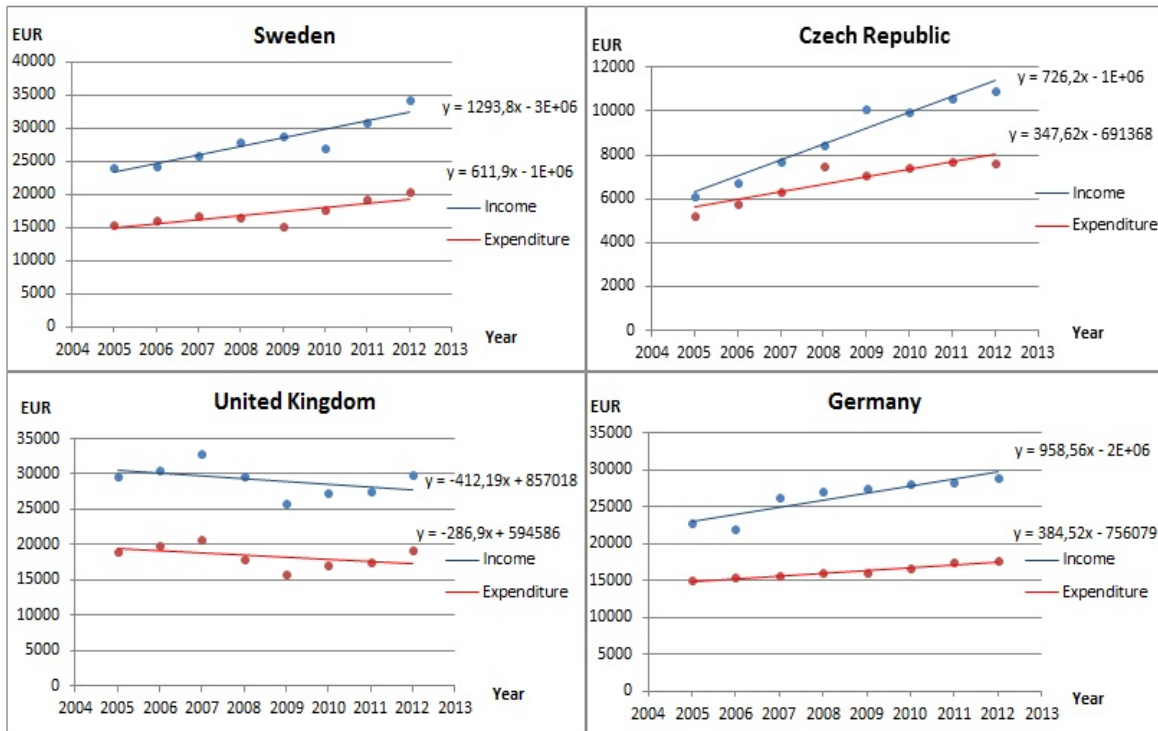
Graph 6: Income and expenditures in the 2<sup>nd</sup> quintil by country



**Income and expenditure of households in 3. quintil**



Graph 7: Income and expenditures in the 3<sup>rd</sup> quintil by country  
**Income and expenditure of households in 4. quintil**



Graph 8: Income and expenditures in the 4<sup>th</sup> quintil by country

From the graph 5, which contains the income and expense situations in individual countries in the 1<sup>st</sup> income quantile, i.e. first 20% of low-income households, it follows that in all the monitored countries the incomes of the households do not reach the average expenses. This difference between income and expenses is the smallest in case of the

households in Sweden, and we can assume that their expenses do not reach average expenses and that the households can satisfy their needs – given certain regulation – on the corresponding level. In Germany the situation is similar; on the other hand, the difference between the income and expenses of households classified by their amounts into the 1<sup>st</sup> quantile in UK and the Czech Republic reaches up to 30% of the total income. This also means that satisfying the basic needs from the achieved income will be problematic and that this group of households endangered in terms of income may get close to social exclusion. The situation in the 2<sup>nd</sup> quantile proves that the households living in Sweden and Germany and located in the 2<sup>nd</sup> quantile of the set based on the amount of their income from the number of arranged income values have already a sufficient income to satisfy all their expenses, and in Sweden the households may even save a part of the income. The households in UK and the Czech Republic located in the 2<sup>nd</sup> quantile based on their income do not cover the average expenses of the set yet, but they get closer to them. The monitored countries reach the income bigger than their expenses only in the 3<sup>rd</sup> and 4<sup>th</sup> quantile.

### **Conclusion**

Based on the results of the performed analyses we can say that Sweden, as an economically-advanced country, has its system set the best way from all the monitored countries. The absolute amount of income, amount of expenses necessary to satisfy their needs, the volume of social transfers provided for low-income households or households currently in problematic situation – all these factors place the households in Sweden among those with the best living conditions in the world. In the long term, they show the lowest percentage of households endangered in terms of income or material.

The situation of the households in Germany is similar to those in Sweden with a high yearly difference, except for the 1<sup>st</sup> quantile. The households in this quantile reach a bigger difference between the income and average expenses; with its share of households endangered by poverty Germany takes the medium position in the arranged line of countries, and this shows that the German social system motivates people to be active and work.

Based on the results of the research performed according to the same methodology, the households in UK may be marked as the households with the highest income from all the monitored countries, only with a negative trend of development of the income situation from the first year of monitoring, with a bigger number of low-income households that belong to the 2<sup>nd</sup> quantile and reach low income than the average expenses. This shows a lower efficiency of the social system or its absence. The negative trend with a very low value of the parameter of the regression function shows that it may be caused by the achieved value of the average yearly income of households in 2009 when there was a steep decline; this decline, however, did not continue in following years, but the amount of the yearly increase in income has not changed this trend yet.

With its average yearly income of households, the Czech Republic reaches around one third of the income of the other monitored countries. The income in the monitored period shows a positive trend with the fastest yearly change; unfortunately, in the last three years with a negative direction of the curve. The negative trend is not recorded for low-income households, as in terms of distribution of income of households the Czech Republic reaches one of the lowest values of income inequality, and among the countries placed according to the percentage of households endangered by poverty the Czech Republic is on front positions with the lowest number of the households endangered by poverty.

The data of the selected EU countries, performed comparison of the absolute level of yearly income of households, its distribution in the set of households of the given country, volume of social transfers provided in individual countries, difference between income and expenses, and the level of poverty – all these aspects show that the comparison of living

conditions of households living in various countries while using these indicators does not correspond to the given situation and it can be easily misused for the purposes of evaluation of social policy. The incompleteness of the indicators, absence of connections with the economic development of the given countries, redistribution through taxes, and direct redistribution through financial transfers etc. do not enable us to sufficiently quantify the living conditions of households and require an interpretation of any partial indicator using a method based on deep knowledge of the given problem.

**References:**

Eurostat. Statistics. 2014. Retrieved from

<http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/themes>

Hennett, P. A Handbook of comparative Social Policy. Cheltenham: Edward Elgar Publishing Limited, 2013.

Stávková, J., Antošová, V., Birčiaková, N. Income situation and living conditions of inhabitants in the Czech Republic. Brno: Folia Universitatis Agriculturae et Silviculturae Mendelianae Brunensis, 2013.

Wolff, E.N. Poverty and Income Distribution. Chichester: John Wiley & Sons Ltd, 2009.

# **A FRAMEWORK FOR ORGANIZATIONAL ARCHITECTURE OF ELECTRONIC CITY AND ELECTRONIC MUNICIPALITY**

*Ali Zeynali Azim, PhD Student Urban Planning*

Young Researchers and Elite Club, Tabriz Branch, Islamic Azad University, Tabriz, Iran

*Mostafa Basiri, PhD Student Urban Planning*

Department of Architecture, College Architecture Ilkhichi Branch,  
Islamic Azad University, Ilkhichi, Iran

*Mina Farokhi Someh, PhD Student Urban Planning*

Young Researchers and Elite Club, Ilkhichi Branch, Islamic Azad University, Ilkhichi, Iran

---

## **Abstract**

This study provides a framework for enterprise architecture in electronic city is electronic municipality. Nowadays, information technology as an emerging phenomenon has a special place in the world. Development of information and communication technology causes many changes in various fields, including emerging e-cities, municipalities and citizens. However, e-city and e-municipality need essential enterprise architecture. In order to develop enterprise architecture of e-city and e-municipality, enterprise architecture maturity method should be applied. Therefore, one of the most important needs of organizations is to choose important activities according to limitations. The studies show that there is a close relationship between IT, enterprise architecture, e-city and e-municipality. This study aimed to clarify the concept of IT, enterprise architecture, electronic city and e-municipality and how they are related to each other. Is the existence of each of IT, enterprise architecture, electronic and electronic municipal requires each other?

---

**Keywords:** Enterprise architecture, e-city, e-municipality, e-government, e-citizen, service-oriented architecture

## **Introduction**

Today, information technology is created no doubt a lot of changes in all aspects of social and economic of human living and its impact on communities is somewhat that the world are changing with tremendous speed from an traditional and industrial societies to an information society. It seems that soon different IT applications impact on all routines community affairs directly or indirectly. This speed of effective and expanding of the phenomenon is very much so that it is expected to occur fundamental changes in cultural, economic, social and political structures as well as in the traditional bases of community governance and introduce a new system of management. Due to the longitudinal and latitudinal development in the community and with regard to its effect on forming culture character, information technology is very convenient and efficient tool for cultural growth of the society [1]. Global approach in recent years has taken steps towards e-communities. Today, society is more advanced that in terms of information has more speed and capability in production and information exchange [2] In this regard, one of the concepts has been studied extensively in very advanced societies in recent decades and has been implemented successfully in some countries is the concept of e-city and e-municipality. In an e-city, all services the residents require provided by information networks. Thus, there is no need any

more for physical movement of citizens to access government services and private institutions. In an e-city, physical offices replaced by digital agency offices and organizations and devices such as municipalities, public transportation, regional water agency and etc. provide most of their services to their subscribers and customers virtually or using facilities that ICT provides for them. This type of projects for implementation requires a comprehensive plan and also architecture and design of its different frameworks. The information architecture that architecture of electronic cities is developed based on it can be defined using Clinger-Cohen's law. The law that is the most important law about necessity of information architecture planning in U.S. government agencies is defined the information architecture as follows: "Information architecture is an integrated framework for the promotion or maintenance of new information technologies in order to achieve the strategic goals of the organization and management of its resources." [3].

### **Electronic City**

The term "electronic city" was proposed in 1994 and in a conference about Digital city. This program administered in 1996 in some European cities like Helsinki and Amsterdam. Electronic city that developed along with the development of IT during the recent decades, entered the social and economical arena that is: the use of IT and communication for the purpose of providing onetime and direct services for citizens; 24 hours a day. Electronic city provides the required facilities in order to have access to information and services; providing further opportunities for people to participate in some activities. There have been different definitions for Electronic city. In other words, in electronic cities all requirements of citizens are provided through computer networks. Therefore, electronic city is somehow a relative term; the more services provided by computers, the more the meaning of electronic city will be clarified [2]. Odendaal defines electronic city as a city in which the city plans to invest on opportunities created by IT and communication and for the purpose of increasing success and impression [4].

Electronic city is such a city has telecommunication and has controlled by ICT department to exchange information. In an electronic city not only citizens use virtual city, ministries and electronic organizations but also they do their routines such as daily purchases through network. It should be noticed that the electronic city is a real city has various citizens, offices, organizations and etc. In an electronic city that just certain communications and social interactions and provide a major part of their daily needs is done through the Internet. Most features of this informing network can be searched in the urban transport network and informing about disaster. When disaster occurs resorting to this system can manage occurred disaster as soon as possible [1].

### **The development of e-city**

A historical development mantra was: "Every job is a good job, all we can get is fine. This is no longer true. Perhaps the most important fact to recognize, respect is due to the development in e-Cities that today the development is much more than just recruiting a company in your community or in the new cables and wires. Development is a process pipeline, if you do not see it this way as a continuous Movement forward toward improvement, then you are bound to repeat the past. [5].

Since 1990, developing World Wide Web technology. Since 1993 is possible the free use and personal use of this technology and digital network or Internet. This new technology allows the communication between people anywhere in the world. As we all know, the number of Internet users has been a large increase in the world and provides exceptional dissemination of knowledge [6].

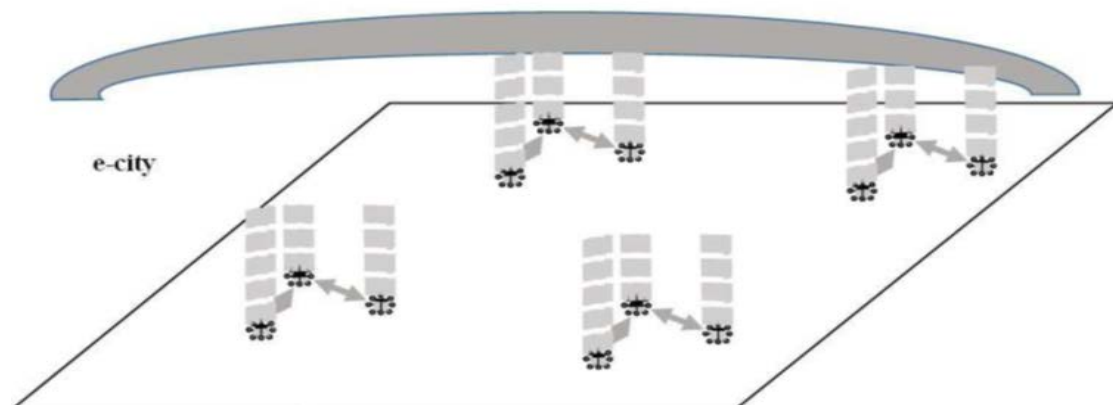


Figure1: E-City

Yet, in fact, is the spread of an international Internet community. For example, in this conference, people have direct reference traveled people here and people that enrolled of Internet application. After the conference, probably, several groups of people keep in touch, even though Internet applications. Therefore, the e-community is formed. The common interest, systems and similar costumes bravery in e-relationships creates the e-community. In the same way that membership in the local community creates a sense of identity, including members of the e-community creates a sense of identity. More and more people have a sense in addition to local and national identity for global identity. In this situation, the limit of time. Actually, our community is in simultaneous direct relations, transport links and e-relationships. , The Day, but have only 24 hours. So, for every human being is not possible to receive regular contacts with all communities. Finally, I remember that some human activities can be realized by digital applications. However, you have made digital applications, a complete system of creation, customer service and maintenance. The applications are in constant change. Governments or private companies can provide all kinds of applications to create. [7]

### Electronic municipality

In fact, municipality is a set of mechanisms related to city and citizens whose goal is to provide spiritual and material needs [8]. One of the important tools that enable municipalities to provide services to the citizens of community is to access to new information technologies. This new technology enables municipalities to provide information and services effectively to their communities, and to increase participation in local organizations. Also, municipalities are able to support local organizations more widely in order to achieve better business. To achieve this goal, municipalities need to make collective decisions to choose a strategic direction. To do this, the best strategy is electronic municipality (local government) [9]. It was first introduced in England in 2000 [10]. Thus, the electronic municipality is an offers its services in the areas of municipal tasks to citizens using information technology quickly, available and securely [11]. In such a system, citizens receive all services they need the best possible way and securely. Municipal also will control its and citizens' activities using information technology and focusing on services and information and will be ensured to quality and availability of services offered by them [12]. E-municipality is one of the main plans for developed countries and some of the developing ones in recent years. International studies has brought up the insight of government people to the e-municipality as the winning card in their rule, in a way that a part of the annual budget in many of these countries related to the feasibility study of e-municipality project in different cities, or development of infrastructures in order to improve the current system in organizations and through the society. [13]

## Enterprise Architecture

In the middle of 1980, John Zachman, the Consultant business plan, developed in the Zachman Framework, which is designed to serve as a blueprint, or architecture, to facilitate the integration of IT systems. The "enterprise," for which architecture is created, refers to "The one area and the mission of the organization or rather than transcends organizational boundary (e.g. financial management, homeland security)" represents the architecture of the "big picture" view of how the enterprise operates and offers his services. Enterprise architecture (EA) serves as the blueprint of the business operations of the organization, and knowledge and technology necessary to carry these operations, both currently and prospectively. Back to you Why not be published tool. It is to comprehend it to be scalable and to the nature of the increase of the future needs. EA represents the business of design-driven approach to management that emphasizes interoperability and data sharing [14]. So enterprise architecture (EA) is a full expression of the company, a Master Plan "acts as a cooperative force" between aspects of planning activities, such as goals, visions, strategies and governance principles, aspects of the business such as business terms, the organizational structures, tasks, activities and information aspects of automation such as information systems and databases, and the technological infrastructure of the business such as computers, operating systems and systems networks. In a large modern enterprise, a rigorously defined EA framework may require vision capable of acquiring "whole company" in all its dimensions and complexity. Enterprise Architecture (EA) program supported by a framework and approach that is able to coordinate many facets that make up the fundamental essence of a business in a holistic approach [15] Architecture is usually divided into different types of architecture or enterprise or ownership. For Aerts et al. (2004) identify three domains of architecture, in which she replied: [16]

- Business architecture defines the nature of its business environment.
- The information system architecture (IT Architecture) details the information system components and business interaction.
- Your platform architecture (or architecture) architecture is the kind of resource that was being done to lay a platform for the construction and operation of systems in the enterprise. [17]

Enterprise architecture definition has changed and evolved in recent years. America electronic government law in 2002 explained the following meaning for enterprise architecture:

- A database of strategic information that will determine the mission
- Information that is necessary to accomplish the mission
- Technologies that are needed to accomplish the mission
- Transitional processes for implementing new technologies in response to changing needs and include three key parts:
  - a) Current architecture
  - b) Optimal architecture
  - c) A transitional program [18]

Two parts of enterprise architecture are management and description method.

- a) Management plan is in line with the following:
  - To converge resources include two subjects (resources planning and standards certainty)
  - Standardization policies include resource integration at the state level
  - support of decision making include financial control and configuration management
  - Avoid of making resources useless include getting help of life cycle for development and Management
- b) The description method is in line with following:

- Enterprise Architecture approach includes an framework of models and methodology of applying architecture
- The current architecture includes a look at the status quo, strategy, processes and resources
- The optimal architecture includes a look at the status quo, strategy, processes and resources
- Architecture management program, including a plan for transition from the current situation to the desired situation [19]

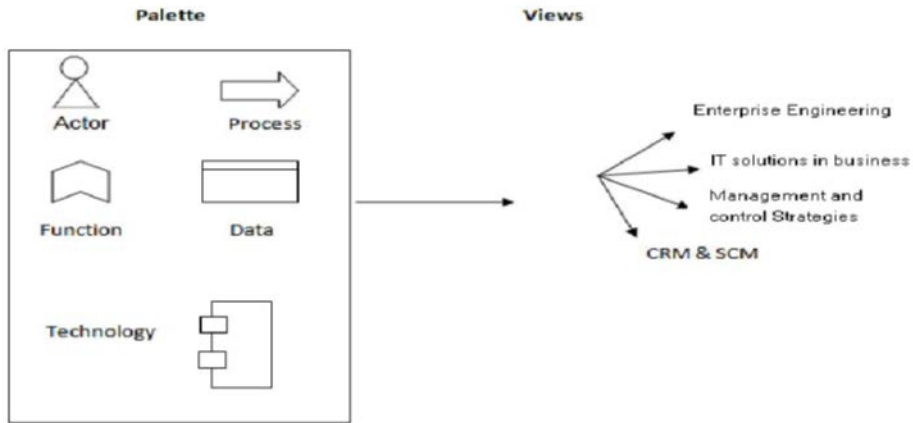


Figure 2: Enterprise Architecture

**Enterprise Architecture Maturity Model**

While the task of implementing and maintaining a comprehensive enterprise architecture program can be daunting at times may seem, the results speak for themselves. The Enterprise Architecture Maturity Model, shown below, and the following section reflect the phases to see an organization such as its architecture Program matures.

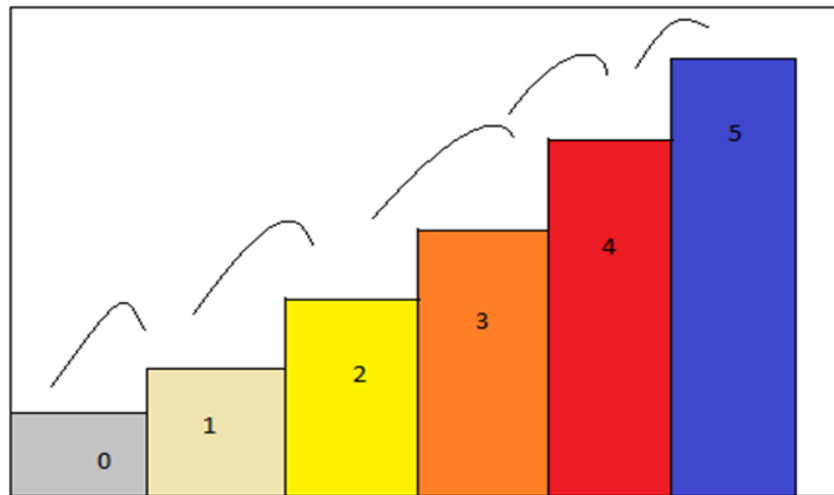


Figure3: Enterprise Architecture Maturity Model

The model follows the path of an organization as its enterprise architecture program matures, and sets standards to measure the performance and the path, which is a natural progression in the development of enterprise architecture. The Nascio tool kit provides guidance for the development process.

In the following sections, each of the defined levels of Nascio Enterprise Architecture Maturity Model. Each level contains statements that are indicative of an EA program at this level. These statements are organized into the following categories Enterprise Architecture:



- Administration - Governance Roles and Responsibilities
- Planning - EA program road map and implementation plan
- Framework - processes and templates for Enterprise Architecture used
- Blueprint - collection of the latest standards and specifications
- Communication education and distribution of EA and Blueprint detail
- Compliance - compliance with the published standards, processes and other EA elements and processes to document, follow these norms and deviations
- Integration - contact points of management processes to the EA
- Commitment - support the EA program throughout the organization. [20]

The important and valid frameworks of enterprise architecture maturity are [21] (2002) EAMMF, EAMM (2003) [22], E2AMM (2004) [23], OMB (2005) [24], GARTNER (2005) [25], Oregon State of (2007) [26]. Each of these frameworks using certain indicators measures the maturity level of enterprise architecture. [28]

Table 1: Characteristics of Assessment Framework of Enterprise Architecture Maturity Model

Framework name	Provided by	indicators
EAMMF (Enterprise Architecture of Maturity Model Framework)	GAO Five levels	1- Showing commitment to perform activities and tasks 2- Opportunity to accomplish activities 3- Confirming activities and tasks by products and following results 4- Survey of successful and satisfactory completion of activities by measuring quantity and quality
EAMM (Enterprise Architecture of Maturity Model)	NASCIO Six levels	1- Rules and Regulations 2 - Planning 3 - Framework 4- Business Plan 5-Communications 6-implementation 7 - Integration 8 - cooperation (synergy)
E2AMM (extended enterprise architecture maturity assessment)	IFEAD Six levels	1- Mutual influences business strategy and information technology strategy 2- Extensive Organizational participation 3- Executive management participation 4- Commercial units participation 5- A department for extensive enterprise architecture planning 6- Development (implementation ) of extensive enterprise architecture 7- Results of extensive enterprise architecture  8- Strategic monitoring 9- Organization program management 10- extended enterprise architecture 11- budgeting and purchase strategy of organization
Maturity assessment model of Enterprise Architecture to governance management and budgeting (OMB)	OMB Six levels	1- change (oriented architecture strategy - strategic orientation) 2- integration (ability to work together - data -business logic- interface) 3- Convergence (components - technical platform - Performance - Security) 4- Convergence of business (strategic goals - and business goals)
Maturity assessment enterprise architecture framework GARTNER	GARTNER	1- Scope and Capability of Enterprise Architecture 2- Support and participate in board 3- The process of defining enterprise architecture 4- Business concepts 5- Enterprise Architecture Concepts 6- Defining desired situation 7- Enterprise Architecture team 8- Effects of enterprise Architecture
State Enterprise Architecture Maturity Assessment Model Oregon	State of Oregon Five levels	Gartner indicators have been used and several sub-indexes are considered for each one.

**Service Oriented Architecture E-City and E- Municipality**

SOA is lightness of design, which focuses on all aspects of implementation and using business services during their life cycle. It also is a way to prepare the required infrastructure for the exchange of information among different applications on any OS and programming language they’ve been created [28, 29]. SOA is a standard framework and its goal is increase of IT agility to rapidly respond to business changes and create an integrated interface for city users [30, 31]. Using this architecture can decrease the cost of developing new elements as well as the existing elements development and also speed, reliability and security will be increased and will improve the integrated management of city network [32]. The main goal of the provide a SOA is to cope with challenges such as the lack of integration and interaction of

information systems in organizations and lack of the IT’s ability to adapt the business’s changes speed according to the organizations constant need to changing of processes and services, difference among experts of IT and experts of business in views [28, 33].

Table 2: The Most Important Goals of Offering a SOA

Upgrade IT coordinated with business
Improvement of the interaction between organizations
Flexibility of IT to respond to on-going changes in business
Standardization and integration of platforms and IT substructures
Flexibility of software components and improvement of the level of reuse

**Built Infrastructure E-City and E- Municipality**

Availability and quality of ICT infrastructure is important for e- cities and e-municipality [34]. Indeed, smart grids, object, play a key role in the creation of e- cities and e-municipality of reality [35]. ICT infrastructure includes infrastructure wireless network (Fibre Channel Wi-Fi, Wi-Fi, kiosks) [36-37], systems-oriented services [38, 39]. Implementation of the ICT infrastructure fundamental importance for the development of low town and depends on many factors relating to the availability and performance. It's small, it focuses on the literature ICT infrastructure obstacles smart cities initiatives. How is the administrative and organizational unity, we will refer to the technological barriers of e-government because the e- cities and e-municipality initiative "is similar to the e-Government initiatives in the use of ICT [8]. Introduced a number of factors related to the implementation of ICT. Table 3 presents a series of challenges, grouped in three dimensions, IT Infrastructure, Security and Privacy, and operational.

Table3. Factors of built infrastructure E-City and E- Municipality

Dimension	Challenges
IT infrastructure	<ul style="list-style-type: none"> <li>- Lack of integration across government systems</li> <li>- Existing internal systems have restrictions regarding their integrating capabilities</li> <li>- Lack of knowledge regarding Interoperability</li> <li>- Availability and compatibility of software, systems and applications</li> </ul>
Security and privacy	<ul style="list-style-type: none"> <li>- Threats from hackers and intruders</li> <li>- Threats from viruses, worms and Trojans</li> <li>- Privacy of personal data</li> <li>- High cost of security applications and Solutions</li> <li>- Accessibility</li> </ul>
Operational cost	<ul style="list-style-type: none"> <li>- High cost of IT professionals and consultancies</li> <li>- High cost of IT</li> <li>- Cost of installation, operation and maintenance of information systems</li> <li>- Cost of training</li> </ul>

**An integrated framework E-City and E- Municipality**

Based on the literature on the concept of e-cities and e-municipality and the factors described above, we have developed a comprehensive framework to explain the relationship and influence between these factors and intelligent urban initiatives. Each of these factors is important to be considered in assessing the extent of e-cities and e-municipality and when dealing with smart cities initiative. The factors are the basis for the comparison of how cities are providing their smart initiatives, implementation of shared services and related challenges. This set of factors is presented as a tool to promote understanding of the relative success of the various initiatives Smart City implemented in different situations and for different purposes. Similarly, this framework can help solve real impact on the types of variables (organizational, technical, context) the success of the initiative intelligent.

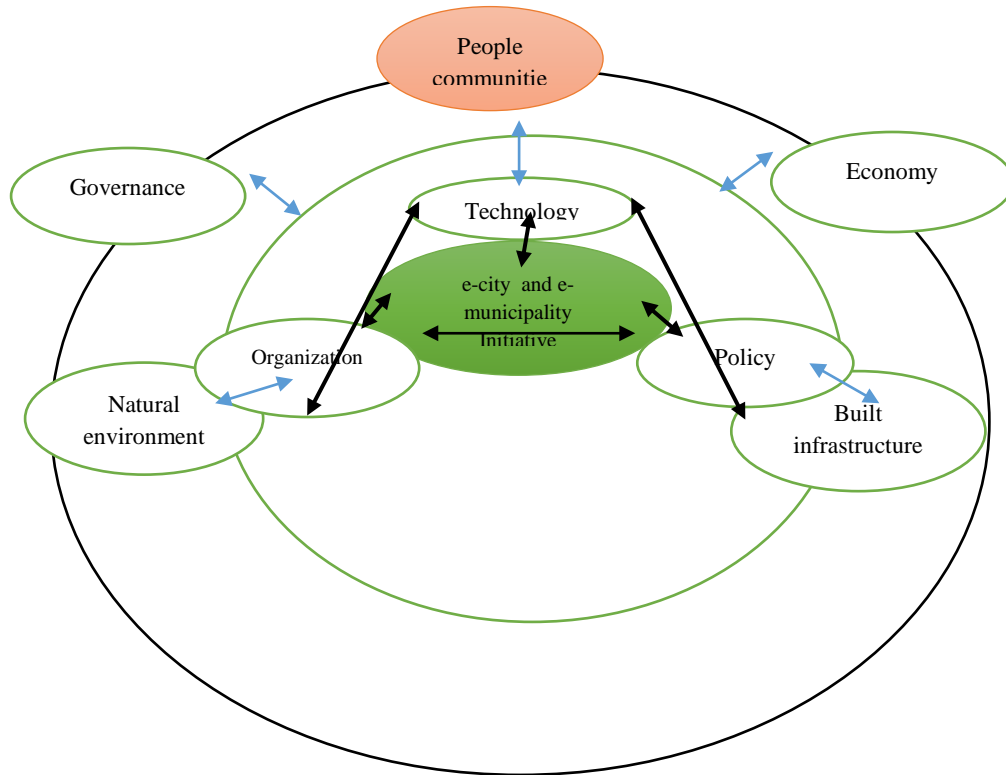


Figure 4: integrated framework E-City and E- Municipality

It is expected that while all the influence factors are bidirectional smart urban initiatives (each can be influenced, and has an impact on other factors), at different times and in different contexts, some are more influential than others. In order to take account of different levels of impact factors in our proposed framework are represented in two different levels of impact. External factors (management, people and communities, the environment, infrastructure and the economy) are somehow filtered or influence over influential internal factors (technology, management and policy) before affecting the success of e-cities and e-municipality initiative. It counts both direct and indirect effects of external factors. The technology can be regarded as an intelligent agent meta urban initiative, because it can significantly affect any of the other seven factors. Due to the fact that many municipal initiative smart intensively through technology, can be seen as. The factor that in some way affects all other factors of success in this regard. [40].

**Electronic City and Municipality Architecture**

Electronics City and municipality as a structure for electronic services to citizens can be divided into four main layers (figure 5). These layers include stakeholders, service channels, electronic services, systems and servers (platforms). Electronics City and municipality stakeholders can include all citizens, urban organizations, merchants and traders, factories, industries, and finally the government and government agencies.[41] Different browsers, kiosks, electronic-telecommunications systems and tools can be considered among of service providing channels. Electronic city services include wide range services such as electronic banking, electronic insurance, electronic transportation, electronic health, electronic education and etc. Systems and platforms that provide electronic city services are in last layer. On one hand, these systems are distributed in different organizations and places and each one is designed according to special technologies and on the other hand, has interaction and cooperation ability to work with other systems.

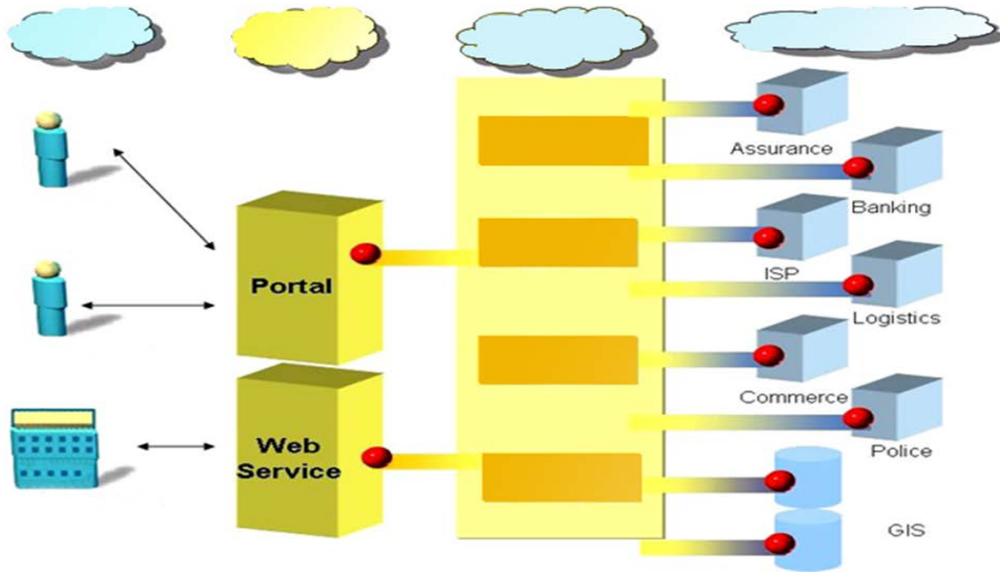


Figure 5: Layers of electronic city architecture

## Conclusion

Today, the city is too vast and urban and social relations have been too complex. Also, we live in an age which is known as the information age. The most important indicator of information age is information technology, that along with it phenomena such as electronic government, electronic city and electronic municipal have emerged. Information technology requires and important and accurate architecture in order to provide its services to the government and electronic city and municipality and that enterprise architecture element is presented by Zachman in 1980s. In this regard, electronic cities like physical cities are need architecture and planning. Enterprise architecture is also used for electronic city architecture. We have used enterprise architecture layers that include stakeholders, service providing channels, electronic services, systems and servers (platforms) to clarify exact meaning of electronic city and municipality. In order to electronic city architecture done correctly, citizens and government personnel and administrative bodies should train to use information technology to meet their own needs and be skillful to provide services to others. Service channels also need to be carefully designed in order to have a trouble-free servicing. A small problem in each layer will be impaired all the system. So, we should use an architecture called enterprise architecture. Finally, based on our own research and others research we concluded that there is a closely relation between information technology, enterprise architecture and electronics city and each one of these elements needs other elements. For this reason, the architecture that we have proposed in a discrete layer we elements, such as the independence of services during a call by various stakeholders, re-use of municipal services and composition, transparency of inputs and outputs for easy identification of service options, stakeholders emphasis on quality control instead of process control, hide the inherent complexity of stakeholder cooperation the city's other information systems to increase the participation and satisfaction of users of the system.

## References:

- Bagherzadeh Kasiri S & Zeynali Azim A," The role of information technology in urban management and stable development" *Life Science Journal* 2012; 9(3): 1250-1254.
- Zeynali Azim A & et al, "Electronic city: A City of Today and Tomorrow", *J. Basic. Appl. Sci. Res.*, 2(7), 6615-6621, (2012).
- Clinger Cohen. (2003), *Updating the Clinger-Cohen Competencies for Enterprise Architecture*, IFEAD, 2003.

- Odendaal, N, 2003. "Information and Communication Technology and Local Governance: Understanding the Difference between Cities in Developed and Emerging economies", *Computers, Environment and Urban Systems*, 27/6: 585-607.
- Kimel Kris, (1999), *e-Cities: Twenty-First Century Thinking for Small Town Living*, Kentucky Science and Technology Council, Contractor Paper 99-4
- Townsend, Anthony M.: *Smart cities: big data, civic hackers and the quest for a new utopia*. W.W. Norton & Company Inc. New York and London, 2013.
- Josep Lluís Miralles i Garcia,(2014), *The E-City or the City on the Cloud*, Proceedings REAL CORP 2014 Tagungsband 21-23 May 2014, Vienna, Austria. <http://www.corp.at>
- Ebrahim Z and Irani Z, (2005), *E-government Adoption: Architecture and Barriers*, *Business Process Management, Journal*, Vol. 11 No. 5, pp. 589-611, 2005
- Strategic Plan for E-Local Government*, Local Government New Zealand, 2003, 1-23.
- Centre for Urban and Regional Development Studies university of Newcastle Upon Tyne, 2003, *Local E-Government Process Evaluation of the Implementation of Electronic Local Government in England*, Office of the Deputy Prime Minister: London, 1-56.
- Layne, K., & Lee, J. (2001), *Developing fully functional e-government: A fourstage model*. *Government Information Quarterly*, 18(2), 122– 136.
- Akman Ibrahim & at el, 2005, *E-government: Aglobal view and an empirical evaluation of some attributes of citizens*, *Government Information Quaterly*, Vol.130.
- Isaac Shahnnavazi Mohammad,et al..(2012), *E-Municipality; New Step in Providing Electronic Services in Iran*, *International Journal of Business and Social Science* Vol. 3 No. 15; pp. 141-154
- Zeynali ali & Behnoud Elnaz, (2012) ,*The phenomenon of Information Technology and Enterprise Architecture of Electronics City*. *Life Sci J* 2012; 9(4):4228-4234]. (ISSN: 1097-8135). <http://www.lifesciencesite.com>. 631
- Schekkerman J, "Enterprise Architecture Validation Achieving Business-Aligned and Validated Enterprise Architectures", *Institute For Enterprise Architecture Developments*, 2003, 1-25
- Aerts, A.T.M., Goossenaerts, J.B.M, Hammer, D.K. and Wortmann, J.C. (2004) *Architectures in context: on the evolution of business, application software, and ICT platform architectures*. *Information & Management*, 41, 781-794
- Pessi K, et al, "Enterprise Architecture Principles and their impact on the Management of IT Investments", *Electronic Journal Information Systems Evaluation* Volume 14 Issue 1, 2011, 53-62.
- Chief Information Officers Council, *Federal Enterprise Architecture Framework (FEAF) Version 1.1*, CIO, 1999.
- Bernard S, *An Introduction to Enterprise Architecture*, Author house, 2004.
- NASCIO,(2003), *Enterprise Architecture Maturity Model*, National Association of State Chief Information Officers (NASCIO), December 2003.
- United States General Accounting Office (2003). "A Framework for Assessing and Improving Enterprise Architecture Management", Version 1.1, p. 8([www.GAO.gov](http://www.GAO.gov)).
- National Association of State Chief Information Officers, (NASCIO- 2003). "Enterprise Architecture Maturity Model", Version 1.3. p.19. ([www.NASCIO.org](http://www.NASCIO.org)).
- Institute for Enterprise Architecture Development (IFEAD-2004). "Extended Enterprise Architecture Maturity Model (E2AMM)", Version 2.0, p. 18. ([www.Enterprise-Architecture.info](http://www.Enterprise-Architecture.info))
- Greta, A., J., Brian, B. (2005). "Understand the Maturity of Your Enterprise Architecture" Gartner Research, Program Publication Date: 17 November, ID Number: G00136105, p. 4. ([www.gartner.com](http://www.gartner.com))

- Greta, A., J., Brian, B. (2005). "Understand the Maturity of Your Enterprise Architecture" Gartner Research, Program Publication Date: 17 November, ID Number: G00136105, p. 4. ([www.gartner.com](http://www.gartner.com))
- Amo, C.; Avilla, T.; Doyle, J.; Marecic, J.; Riordan, S.; Wells, D. (2007). "State of Oregon Enterprise Architecture Maturity Assessment Iteration- 1, Building the Foundation", Version 0.5, 1/8/2007. P. 4.
- Mahmoodi J, "A framework for enterprise architecture maturity assessment", *Journal of Information Technology Management*, term 1, No. 3, Fall and winter 1388, pp. 107-120.
- S. Hashemi, I.Maleki, S.R.Khaze, Gharehchopogh, "A new Service Oriented based Architecture for increasing Security in Electronics City", Fourth Conference Electronic Government Softwares, Geshm Smart Island, Iran 2013.
- Newcomer, E., Lomow, G., "Understanding SOA with Web Service", Pearson Education, 2005.
- Thomas Erl, "Service-Oriented Architecture (SOA): Concepts, Technology, And Design", Prentice Hall Ptr, 760 p., 2005.
- Arsanjani, A., "Service Oriented Modeling and Architecture", In: IBM Business Consulting Services, pp. 1-4, 2004.
- Evgen Duravkin, E., "Using SOA for development of information system (Smart city)", *Modern Problems of Radio Engineering, Telecommunications and Computer Science (TCSET)*, pp. 258 –258, 12 April 2010.
- S. Hashemi, S. Y. Hashemi, "A Novel Service Oriented Architecture for Integration of Information Systems in Electronic City", *international journal of scientific & technology research* volume 1, issue 11, pp.6-9, 2012.
- Giffinger, R., Fertner, C., Kramar, H., Kalasek, R., Pichler-Milanović, N., & Meijers, E. (2007). *Smart Cities: Ranking of European Medium-Sized Cities*. Vienna, Austria: Centre of Regional Science (SRF), Vienna University of Technology. Available from [http://www.smartcities.eu/download/smart\\_cities\\_final\\_report.pdf](http://www.smartcities.eu/download/smart_cities_final_report.pdf).
- Vasseur, J. (2010). *Smart cities and urban networks*. In Vasseur, J. & Dunkels, A. (Eds.), *Interconnecting Smart Objects with IP: The Next Internet* (pp. 360-377). Burlington, MA: Morgan Kaufmann.
- Al-Hader, M., & Rodzi, A. (2009). The smart city infrastructure development & monitoring. *Theoretical and Empirical Researches in Urban Management*, 4(2), 87-94.
- Al-Hader, M., Rodzi, A., Sharif, A.R., & Ahmad, N. (2009). SOA of smart city geospatial management. In *Proceedings of the 3rd UK Sim European Symposium on Computer Modeling and Simulation*, Athens, Greece, November 25-27.
- Anthopoulos, L., & Fitsilis, P. (2010). From digital to ubiquitous cities: Defining a common architecture for urban development. In *Proceedings of the 6th International Conference on Intelligent Environments*, Kuala Lumpur, Malaysia, July 19-21.
- Anthopoulos, L., & Fitsilis, P. (2010). From online to ubiquitous cities: The technical transformation of virtual communities. In Sideridis, A. B., & Patrikakis, C. Z. (Eds.), *Next Generation Society: Technological and Legal Issues* (Vol. 26, pp. 360-372). *Proceedings of the Third International Conference, e-Democracy 2009* (Athens, Greece, September 23-25), Berlin, Germany: Springer. Available from <http://www.springerlink.com/content/g644776482968k36/fulltext.pdf>.
- Chourabi Hafedh & al, (2012) *Understanding Smart Cities: An Integrative Framework*, 2012 45th Hawaii International Conference on System Sciences. pp: 2289-2297.
- Mahjoorian A, Shams F, "Service-oriented architecture usage in layers of electronic city architecture", Technical Committee of Information Architecture of Iran, Secretariat of council information, 2008.

## THE NEED FOR CULTURAL CHANGE: A CASE STUDY DISCUSSION

*Karen Cacciattolo*

D.Soc.Sci. (Leic.), M.Sc. (Trng & HRM) (Leic.)  
University of Malta, Malta

---

### Abstract

This paper discusses the significance of the organisational culture and the research carried out within the University of Malta to test whether a cultural change is required in the organisation. The research examined the views and comments of the stakeholders of the organisation on the present organisational culture namely, students, administrative staff and academic staff from various departments. A twofold research methodology was chosen. Initially, a quantitative stage involving questionnaires was sent to all participants. This was followed by a qualitative stage involving twelve participants taking part in the in-depth structured interviews. Secondary data was also used for the study, which guided the researcher in understanding better the present organisational culture.

---

**Keywords:** Organisational Culture, Organisational Behaviour, Cultural Change

### Introduction

The notion of organisational culture has its ancestry in anthropology, where anthropologists define culture as the *'patterned ways of thinking, feeling and reacting, acquired and transmitted mainly by symbols'* (Key 1999:217). Culture in general is also referred to as the system of shared beliefs, values, behaviours, and artefacts that individuals apply to get along with one another, and that are spread from generation to another through learning.

Many researchers and theorists offered other numerous definitions of culture. Hofstede (1982) defines culture as the *'collective programming of the mind'* (1982:21), which distinguishes a group of individuals from another and it determines the identity of a group of people (Hampden-Turner 1990:12). According to Trompenaars & Hampden-Turner (2003), culture is *'a shared system of meanings'* and it states what individuals pay attention to, what are people's actions and what they value (2003:13).

Culture concerning organisations is defined as the manner and learned ways that rule and form the organisations' employee relationships (Williams *et al* 1993:17). Every organisation has its own distinctive culture which is formed unconsciously (Williams *et al* 1993:18), based on the values of the top management who lead and direct that organisation. Similarly, Edgar Schein (1985) defines organisational culture as *'a learned product of group experience'*. On the other hand, Deal & Kennedy (1984) offer the *'the way things get done around here'* definition of organisational culture (1984:4).

Organisational culture operates at all levels from subconscious to visible and it directs the manner in which an organisation deals with information, its employee relationships, and its values (Hampden-Turner 1990:1). Handy (1993) argues that a culture cannot be specifically defined since it is something that is perceived and sensed (1993:191), and it is established and erected over the years by leading groups in an organisation (Handy

1993:183). Organisations grow from the initial ideas, strategies and structures made by their founders, and thus culture is historically based (Williamson *et al* 1993:20).

Williams *et al* (1993) postulate that once an organisation has made a strategic decision, reflecting its setting at that time, the amounts of autonomy for succeeding generations are restricted (1993:21). This is because the original structures and procedures may be present in many generations after the organisation's creation and thus, the original culture influences successive generations. This is also due to the fact that, decisions that affect the future of an organisation, are made within the framework of the existing culture (Williamson *et al* 1993:21).

Finally, beliefs, attitudes and values of individuals, are all acquired from an individual's environment, and hence the organisational culture is acquired from the environment common to its affiliates (Williams *et al* 1993:17). The internal and external environment both influence the culture of an organisation. The internal environment includes the organisation's technological and societal structures, such as rules, regulations and information technology systems. Therefore, part of the culture is an artefact of these '*socio-technical systems*' (Williams *et al* 1993:17). The socio-technical systems may also include the decision-making, planning and control procedures of the organisation, the procedures for recruitment and human resources development, and the behaviour of other associates, particularly the behaviour of executives and work groups (Williams *et al* 1993:17).

On the other hand, the external environment consists of the social, political, legislative, economic and technological systems that set a range of demands on the organisation and form differing learning environments (Williams *et al* 1993:17). This is because the external environment consists of organisations that operate in diverse sectors with different markets, and which have different skills and resource requirements (Williams *et al* 1993:17).

### **The Significance of Culture**

The culture of an organisation is a complex phenomenon, since it comprises the attitudes, beliefs and values of people in an organisation (Armstrong 1994:61). These factors are deep rooted and derived from primarily held beliefs in the organisation and its history. When an organisation is formed, its culture becomes the basis on which the organisation will continue to exist. Work groups in an organisation have their own behavioural habits and relations, which to some degree, may affect the entire system.

However, employees' actions may be mostly subject to the shared practices of the specific culture of the organisation to which they belong. Of course, an organisation may have more than a single existing culture. Moreover, complex organisations may contain sub-cultures that overlap (Williamson *et al* 1993:23). These sub-cultures conflict with each other since they are made up of what is imported by the employees into the organisation. The imports may include the national culture, the class and social group background of individuals (Hofstede 1981:15).

It would be beneficial for people who are responsible for the strategic development, productivity and learning of an organisation, to understand the organisational or corporate culture they work in, to be successful in the business (Deal & Kennedy 1984:18, Hampden-Turner 1990:1). Top management individuals in organisations often attempt to establish or change a corporate culture. This includes enforcing corporate values and behavioural patterns that replicate the objectives of the organisation. Corporate culture is a key factor in the accomplishment of an organisation's goals and organisational effectiveness (Hampden-Turner 1990:1). Moreover, corporate culture enhances the management of change (Armstrong 1994:63).



Armstrong (1994) argues that cultural management is also an important factor, which facilitates change (1994:61). This may be useful where a culture is dysfunctional. The aims of cultural management often include developing principles to guide top management to plan and implement organisational strategies and policies, generating and retaining a positive climate and, encouraging dedication to the values of the organisation (Armstrong 1994:62).

However, even though culture may be managed, Deal and Kennedy (2000) argue that if the culture was required to be changed, it would be a very difficult task, since culture changes solely when it is ready to change (2000:35). This is because changing individual and group behaviour is an extremely difficult and time consuming process (Sims 2000:66). Moreover, Sims (2000) postulates that it is an individual's trend to want to preserve the existing culture, and this is often referred to as '*cultural persistence*' (2000:66).

Uttal (1983), (cited in Sims 2000), argues that culture has an '*addictive quality*' due to the individuals' awareness that culture mechanisms cannot be changed without affecting traditions and values (Sims 2000:66). For example, an organisation culture that adopts unethical behaviour tends to nourish itself unethically, since unethical managers are likely to employ individuals like themselves, in order to maintain the culture that exists (Trevino & Nelson 1995 cited in Sims 2000:66). Ethical climate is another element that influences the shaping of the organisational culture (Bourne & Snead 1999:288, Grubisic & Goic 1998:163).

Culture is also the key factor in influencing whether or not a company is successful, and thus, it needs to be on the top of the management priorities list (Deal & Kennedy 2000:40). To this respect, people who are responsible for the strategic development, productivity and learning of an organisation, may encounter problems if they ignore the cultural ways and practices of their organisation (Deal & Kennedy 2000:40).

### **The University of Malta**

The researcher considered two main approaches to study the organisational culture of the University of Malta, namely the 'typological approach' and the 'trait approach' (Liu *et al*:2006). The trait approach was finally chosen for the study, and hence the researcher assumed that the culture is an attribute of an organisation that can be changed. There is *prima facie* evidence of an effective culture that consists of generally pleasant and collegial relations, and camaraderie between colleagues and various staff members. However, there is high bureaucracy and complexity and, because of this, the University's system of communications does not permit easy routinisation, especially where it concerns employees and students. Moreover, as an organisation that fulfils multiple objectives, namely lecturing and producing knowledge through research, there may sometimes be conflicts (Schein 1970:117).

It seems that due to the high bureaucracy, hierarchy-based communication barriers exist between the University's employees. This may result in an attitude of neglect from the higher authorities, which would then inflict a negative attitude in the organisation's employees. It is also common practice for the University of Malta to encounter conflicts between management and the academic body, mostly where power and decision-making are concerned. Lockwood and Fielden (1973), (cited in Shattock 1999), argue that decision-making and budgetary matters should be the responsibility of the faculties or departments, to reduce the work load from the central administration of the universities (1999:274).

Moreover, Shattock (1999) postulates that since 1966, the debates whether power should be concentrated in the centre of the university or spread around the university and away from the centre, has taken enormous steps (1999:274). To this respect, there are several universities that have developed a strong organisational culture, in which managerial and academic structures work hand in hand in order to provide efficient decision-making

mechanisms (Shattock 1999:281), and this is the way the University of Malta should be. The above-mentioned issues advocate the appropriateness to analyse the present organisational culture of the University of Malta.

### **The Study and Its Findings**

The research examined the views and comments of the stakeholders of the organisation on the present organisational culture, and it pursued both the inductive and deductive approaches. The research also tried to bind the results of both for evidence, contradictions and verification of the findings.

A deductive approach has been used to collect relevant quantitative data concerning views on the current organisational culture. Hypotheses based on the researcher's past and current experiences, and literature on organisational culture questionnaires, were used as sources for the setting up of a questionnaire. This method involved two hundred and thirty three individuals, including students, administrative staff and academic staff from various departments and sections.

An inductive approach was then used to find out what is actually going on in the field. Top management, subordinates and students' views and perspectives was first obtained through interviews, and then analysed for coded content. It is only in this way that new developments in the views and perspectives can be illuminated and brought into the academic domain. The data acquired from the interviews was then weighed against the quantitative data gathered from the questionnaire surveys. The research at both stages focused on six very important aspects of the organisational culture; the mission and values, power and conflict, information and communication, ethics and, creativity and innovation.

Secondary data was collected to increase the validity of the research in question. These included the issued strategic plan for years 2002-2006, which was published in 2003, and the collective agreements of the employees. The strategic plan, which was collected from a dean's office, included a mission statement and, a list of goals and objectives. The goals and objectives included information on quality of education, excellence in research, quality of life, the world of work, increase in student numbers, streamlined administration, the physical environment, fund generating and quality assurance. The collective agreements of the employees, which were collected from the human resources department, included the benefits, salary scales and other information on the working conditions.

The findings illustrate both positive and negative issues in which problems need to be dealt with. The positive ones indicate that in the organisation, there are reasonably good working conditions and freedom of expression, and work and service are both conducted in an ethical way. Moreover, the degree courses offered are thorough and of high educational standards. In addition, the University of Malta adopts acceptance and open-mindedness towards diversity and multi-culturalism.

The negative findings indicate that there is a general lack of communication concerning the objectives and values of the organisation, conflicts and abuse of power, lack of training and development for employees, problems with the present management and communication style, and the present organisation structure is highly bureaucratic with imbalanced distribution of staff, and lack of professional HR people.

### **Implementing a Cultural Change**

Undoubtedly, the findings illustrate that there is sufficient scope for the University of Malta to implement a number of changes to improve or change the present organisational culture. A number of recommendations need to be considered. These include the implementation of an official mission statement, training and developing staff, redistribution the present members of staff, recruiting new management staff and professional human

resources people, applying efficient systems for communication and distribution of information, and implementing rewards and incentives.

Presently, at the University of Malta, there seem to be no clear indications of what the objectives and values of the organisation are and the majority of employees and students do not feel they belong to the organisation. Many individuals are not aware of the strategic plan of the organisation, and the general organisational policies and procedures are not revised as required from time to time. This result suggests that there is a great resistance to change, especially from people at the top of the hierarchy.

Of course, the above recommendations can alter attitudes and values, and along with changes in systems and structures, bring about the required changes in behaviour, and thus the culture may be modified. Undoubtedly, cultural change is an extremely difficult and long-term process. In order for change to be possible, top management is initially required to have a clear strategic vision and then be able to communicate it to all stakeholders of the organisation.

Moreover, in order for the University to develop a strong organisational culture, both managerial and academic structures need to work hand-in-hand in order to provide efficient decision-making mechanisms.

### References:

- Armstrong, M. (1994) *Improving Organizational Effectiveness*, London-UK: Kogan Page Limited.
- Bourne, S. & Snead, J. D. (1999) Environmental Determinants of Organizational Ethical Climate: A Community Perspective. *Journal of Business Ethics*, 21 (4), pp. 283-290.
- Deal, T. E. & Kennedy, A. A. (1984) *Corporate Cultures: The Rites and Rituals of Corporate Life*, USA, Addison-Wesley Publishing Company.
- Deal, T. E. & Kennedy, A. A. (2000) *The New Corporate Cultures: Revitalizing the workplace after downsizing, mergers and reengineering*, London-UK, TEXERE Publishing Limited.
- Grubisic, D. & Goic, S. (1998) Attitudes Towards Some Aspects of Business Ethics Among Students From Countries in Transition: An Empirical Research. *Business Ethics. A European Review*, 7 (3), pp.163-177.
- Hampden-Turner, C. (1990) *Creating Corporate Culture: From Discord to Harmony*, Massachusetts-USA, Addison-Wesley Publishing Company.
- Handy, C. (1993) *Understanding Organizations*, London-UK, Penguin Books Ltd, 4<sup>th</sup> Edition.
- Hofstede, G. (1981) 'Culture and Organizations'. In CLMS *Msc in Training and Human Resource Management*. (Version 7.1), Reading 842.
- Hofstede, G. (1982) *Culture's Consequences: International Differences in Work-Related Values*, USA, Sage Publications, Abridged Edition.
- Key, S. (1999) Organizational Ethical Culture: Real or Imagined? *Journal of Business Ethics*, 20 (3), pp. 217-225.
- Liu, A. M. M. *et al* (2006) A framework for assessing organisational culture of Chinese construction enterprises. *Engineering, Construction and Architectural Management*, 13 (4), pp. 327-342.
- Schein, E. H. (1970) *Organisational Psychology*, New Jersey-USA, Prentice-Hall Inc, 2<sup>nd</sup> Edition.
- Schein, E. H. (1985) *Organisational Culture and Leadership*, the University of California-USA, Jossey-Bass Pub.
- Shattock, M. (1999) Governance and management in universities: the way we live now. *Journal of Educational Policy*, 14 (3), pp. 371-282.

- Sims, R. R. (2000) Changing an Organization's Culture Under New Leadership. *Journal of Business Ethics*, 25 (1), pp. 65-78.
- Trompenaars, F. & Hampden-Turner, C. (2003) *Riding The Waves of Culture: Understanding Cultural Diversity in Business*, London-UK, Nicholas Brealey Publishing, 2<sup>nd</sup> Edition.
- Williamson, A. *et al* (1993) *Changing Culture: New organisational approaches*, London-UK, Institute of Personnel Management, 2<sup>nd</sup> Edition.

# DOMESTIC TOURISM IN GEORGIA: QUANTITATIVE ANALYSIS

*Nino Jerenashvili, PhD Student*  
Grigol Robakidze University, Tbilisi, Georgia

---

## Abstract

Domestic tourism is an interesting direction. On the one hand, domestic tourism is the important part of the country economy, because, as it is known, domestic tourists spend money in their own country, as a result there is flow of money. On the other hand, domestic tourism plays an important role in the development of the regions of the country which does not have manufacturing resources and facilities. Therefore, for developing the domestic tourism and not only, also for growing the international tourists flow, it is very important to grow the awareness of the country as in the local population, also on international markets. In most cases, domestic tourists have demand on the same products that demand international ones. Domestic tourists use the infrastructure and objects which are designated for local population. The proper development of the domestic tourism will assist promotion and position strengthening of Georgian tourist product on the country's target touristic markets.

---

**Keywords:** Domestic tourism in Georgia, GDP, economic

## Introduction

It is common knowledge that in many countries domestic tourism is dominant with respect to international flows in terms of both size and economic contribution. In spite of that, only recently researchers have started to concentrate on this phenomenon and its economic impact, as well as on its potential for reducing disparities in less developed world areas. It follows that study on the determinants of tourists choices within national borders are still rare and mainly concentrate on the impact of economic variables. There are, however, some recent contributions that have started to stress the potential role of non-economic factors for the domestic demand of a specific destination area, in the steps of the international tourism literature. Such factors may concern both the quality of local endowment of natural and cultural resources, and the capability of a destination to manage and organize its resources according to competitive strategies.

This paper aims to give a contribution in this line of research. It builds on a regional data and economic and social overview of Georgian economy. At this scope a large panel of explanatory variables is considered. It includes traditional economic demand-driven variables, such as price, income, export and in particular, the role of accommodation units, number of beds and characteristics of domestic tourism is explicitly investigated. This paper is organized as follows.

There are many countries where domestic tourism is dominant relative to international flows both in terms of size and economic contribution. Examples are: Domestic trips in the EU have been estimated at 510 million per year (Peeters *et al.* 2007). The US domestic market is much larger at 1.2 billion domestic trips (WTO 2005). Australia adds 72 million overnight tourists in 2005 (Australian Bureau of Statistics 2005). China counted some 1.21 billion domestic tourists in 2005 (National Bureau of Statistics of China 2007). India counted 309 million domestic tourist arrivals in 2003 (Ministry of Tourism 2004). 80 % of the tourists

visiting the popular tourism spot of Goa (Sawkar *et al.* 2005). Indonesia was reported to account for 108 million domestic tourist trips in 2004, at least 110 million by 2005 (Ministry of Culture and Tourism 2005). Thailand saw 80 million domestic tourist trips in 2005 (Tourism Authority 2006). In Latin American countries like Peru the number of domestic tourists exceeds that of international arrivals by an order of magnitude, comprising 10 million domestic trips (Prom Peru 2004a, Prom Peru 2004b).

Montfort, V. *et al.*, (2010) use different statistical techniques to highlight the importance of domestic demand for tourism services and to analyze inter-regional tourist flows in Spain in the period of 2005-2009. They use a "Gravity Model" for domestic travel flows between the various Spanish regions. The authors conclude that the annual volume of travel flows between each pair of regions depends on a set of specific variables, including the regions size, transportation costs, relative prices indicators, and a variable reflecting the importance of second homes in the destination region.

Athanasopoulos, G. *et al.*, propose an alternative tourism price variable based on purchasing power parity (PPP) to analyze the substitutability between domestic and outbound Australian tourism demand within the Almost Ideal Demand System (AIDS) framework. The authors conclude that domestic tourism is regarded as a necessity by Australians and their demand for domestic tourism is less price elastic than that for outbound tourism.

This view is also supported by Yap, G., (2010) and the main aim of this research is to achieve sustainability of domestic tourism businesses in Australia. This study reveals several distinct findings. First, the income elasticity for domestic visitors of friends and relatives and interstate trips is negative, implying that Australian households will not choose to travel domestically when there is an increase in household income. Second, an increase in the current prices of domestic travel can cause the demand for domestic trips to fall in the next one or two quarters ahead. Third, the coefficients for lagged dependent variables are negative, indicating perhaps, that trips are made on a periodic basis. The study concludes that dynamic panel data models are employed by adding lagged dependent variables to take account of tourist's habit persistency.

Bui, H.T and Joliff, E., 2011, approach domestic tourism in Vietnam from a perspective of domestic travel motivations. They view Vietnamese domestic tourism within the context of the transition from a centrally planned to a market-driven economy. The authors conclude that domestic tourism in Vietnam is rapidly expanding. The domestic travelers are 'pushed' towards tourism by disposable income, a sense of family togetherness, and are motivated by the prospect for relaxation facilitated by their employer's sponsorship.

According to Demunter, C and Dimitrakopoulou, C (2011) in Europe, total tourist expenditure on domestic trips exceeds that of outbound trips Europeans spend 77% of their holiday trips in their own countries and more than half of their holiday's budget on domestic trips. The highest domestic expenditure was recorded in France 77 billion EUR. French and Austrian tourists were the biggest spenders with 400 and 362 EUR per trip respectively; they focus that the emphasis on domestic tourism as a major driver of tourism growth is focused in the national tourism policy and also in the policy of the state of Goa. Goa is the only state after Kerala where beaches are the focal points of the tourism industry. It is the reason that Goa is known as the beach country of India. In Ukraine tourism is one of the leading economic sectors of the economy and domestic tourism is a strong competitor in the market. (Gustul, D., 2011).

Euromonitor International (2011), points that domestic trips in Croatia registered a negative (compound annual growth rate) CAGR. Schänzel, H., (2010) mentions, that in New Zealand, 56 % of all tourism earnings come from domestic tourism. However, domestic tourism gets little credit, largely, because family holidays are perceived as less economically valuable than international tourists in New Zealand.

There are relatively few studies on domestic tourism in general and even fewer on Georgia in particular and, therefore, the literature on domestic tourism is quite scant and moves along the lines suggested by international tourism flow studies. GNTA (2011), analyzes Domestic tourist's statistic in Georgia, IESEC (2007) subscribes to GNTA and describes domestic tourism in Georgia and uses further statistical methods: Regression analysis, Multinomial logistic, Binary logistic, Cross tabulations, Factor analysis – Varimax method. Official sites are: [www.gnta.ge](http://www.gnta.ge), [www.georgia.travel](http://www.georgia.travel), [www.geostat.ge](http://www.geostat.ge), where you can find statistical data, information about accommodation, food service, embassy, museums, theatre, transportation and others.

Turkish resorts compete Georgian beach resorts with their lower prices and higher level of service. The prices on Georgian seashore resorts are high, so they go abroad for rest. Georgians are particularly attracted to Turkey and Egypt. The main reasons for it are visa-free system and a high level of service where price and quality are compatible with each other; also the nature of resorts helps it, because in the mentioned countries practically does not rain for 6-7 month.

Therefore, scant of researches and information about domestic tourism in Georgia needs proper scientific study. Hence, our goal is to study Domestic tourism in Georgia: a quantitative analysis.

Georgia is located at the crossroads of Western Asia and Eastern Europe. Georgia is bounded to the west by the Black Sea, to the north by Russia, to the south by Turkey and Armenia, to the southeast by Azerbaijan.

Georgia is divided into 10 regions and 1 autonomy republic, which are: Mtskheta-Mtaianeti, Kakheti, Adjara AR, Guria, Imereti, Samegrelo-Zemo Svaneti, Kvemo Kartli, Shida Kartli, Racha-Lechkumi and Kvemo Svaneti, Samtskhe-Javakheti and capital – Tbilisi.

Below to give a description of Georgia and the Georgian regions focusing, in particular, on economic and social description of regions, population, per capita GDP, consumption PC, consumer price index, foreign direct investments, export and the main focus will be on domestic tourism in Georgia.

Table 1. Economic of Georgia by Years (USD) and (thousands)

Year	Population	Per Capita GDP	Consumption PC	Consumer Price Index	Foreign Direct Investments	Export
2005	4321.5	1763.5	57.4		254.1	
2006	4401.3	2314.6	64.2		672.5	
2007	4394.7	2921.1	70.0		1138.3	1232
2008	4382.1	2455.2	84.9	61.9	883.6	1495
2009	4385.4	2623.0	85.1	62.1	371.9	1134
2010	4436.4	3230.7	96.0	57.4	460.1	1677
2011	4469.2	3523.4	107.5	60.5	631.1	2189
2012	4497.6	3596.6	119.8	61.2	515.0	2377
2013	4438.8			55.9	516.6	2909
2014				56.2		224

Source: National Statistics office of Georgia

Table 2. Economic of Georgia by Years (USD) and (thousands)

Year	Employment	Employed persons in hotels and restaurants	Average monthly nominal salary	Salary in the tourism sector
2005	1745	11437	115.3	56.4
2006	1747.3	11993	157.0	111.1
2007	1704.3	11554	207.9	134.7
2008	1601.9	11184	302.2	188.5
2009	1656.1	13540	314.5	206.1
2010	1628.1	16106	337.6	213.5
2011	1664.2	24003	359.3	193.5
2012	1724.0	27821	402.5	224.4
2013		23630		260.9

*Source: National Statistics office of Georgia*

Table 3. Regions of Georgia (USD) and (thousands)

	Number of beds	Accommodation units	Average monthly income per capita	Hotel average price	Gross value added	Number of visitors in hotels	Average monthly remuneration of employed person's
Year			2012		2011	2013 (10m)	2013
Tbilisi	5 326	126	105.0	62.1	5601.2	4 766 705	536.1
Adjara AR	10266	263	97.6	58.1	916.32	2 289 398	370.9
Guria	2 797	56	128.3	42.3	319.4	583 966	222.5
Racha-Lelchkumi and Kvemo Svaneti	767	31	115.1	30.8	1.441.75	314 588	306.5
Samegrelo-Zemo Svaneti	1 956	111	115.1	44.6	852.8	1 463 552	322.0
Imereti	2 746	85	-	33.3	-	3 096 692	319.1
Kakheti	2 006	132	1137.7	42.3	649.5	1 540 575	247.6
Mtskheta-Mtianeti	2574	85	131.5	84.1	754.0	1 354 849	489.0
Samtskhe-Javakheti	5723	151	86.4	76.2	375.7	896 165	280.0
Kvemo Kartli	410	16	111.0	-	-	1 319 937	412.4
Shida Kartli	180	13		59.3	1.001.6	1 196 554	247.7

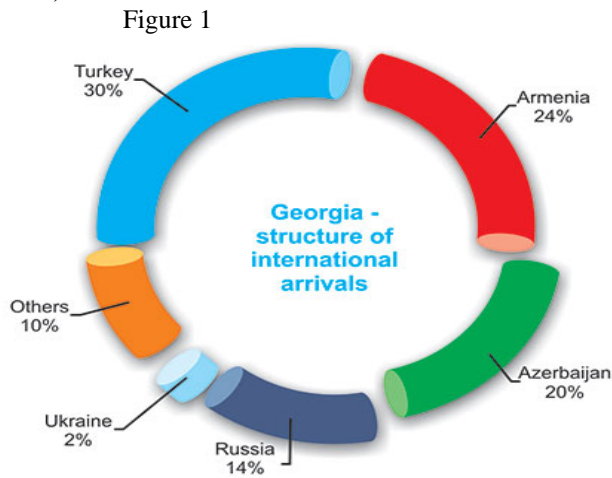
*Source: National Statistics office of Georgia*

Table 1, Table 2 and Table 3 report economic variables of the capital of Georgia - Tbilisi, Adjara AR and the nine regions. Foreign direct investment (FDI) is very important source and vital for the long-term economic growth of Georgia (Table 1). Fortunately, the role of foreign direct investment in the country's economy development is recognized and the government has expressed its readiness to assist them with implementation of protection measures to attract investments and a stable and predictable business environment. The gross value added (GVA) of Shida Kartli and Mtskheta-Mtianeti totalled 1755, 6 million USD in 2011, reflecting an increase of 18, 6% over the previous year and accounting only for 5, 5% of the country's GDP. It is comparatively low indicator for the population and territory of these two regions reflecting not only the relatively weak economic situation but also constraints to the economic growth due to the war with Russia and the economic crisis. In 2011, the industrial sector accounted for the largest share of the region's GVA – 22% of the total value. Salary in tourism sector from 2005 to 2013 was increased by 204.5 USD. The level of salaries in Kakheti is below average (in 2013, the average salary in Kakheti was 247, 6 USD while the average level in Georgia was 351, 9 USD). The leader is Tbilisi – 536, 1 USD. Kakheti ranks second just ahead of Shida Kartli in terms of incomes per household and per capita and it is also the second last in its expenditure levels. In turn, it means a low level



of consumption which slows down the economy (trade). The average monthly amount of remuneration attracted only Racha-Lechkhumi - Kvemo Svaneti and behind it are significantly ahead of other regions. In 2006-2011, the value added produced in the region of approximately 1.4-fold. Negative rate was observed in 2008 and 2009 what caused the results of the August 2008 war and the global economic crisis.

From the statistical point of view, the performance of the tourism industry in Georgia in 2013 can be characterized as a period of further growth. As for the international tourists, in 2013 the number of international arrivals grew by 22% over stepping the five million mark for the first time. The majority of all arrivals to Georgia in 2013, 88% (4,732,529), were from neighboring countries: Armenia, Azerbaijan, Russia and Turkey and only 12% arrived from other countries. In 2012, those countries' share was higher, 91%, suggesting a decreasing trend in this number. Turkey is the annual leader in terms of the number of international arrivals to Georgia. Although the number of arrivals from Armenia was greater in December with a total of 121,732 (27%), annual data showed Turkey to be in first place with 1,597,438 arrivals (an increase of 4%). (Figure 1)



Source: The Ministry of Internal Affairs of Georgia

The high growth rate in tourism was also highlighted by international organizations. According to the World Tourism Organization's report, "UNWTO World Tourism Barometer" (December, 2013), the increase in the number of international arrivals in Georgia was rated as the highest in Europe. The expenditures of foreign guests in Georgia have a significant effect on the balance of payments. Approximately 58% of Georgia's service export revenue comes from tourism. Revenues consisting of international tourism receipts demonstrated an increasing trend reaching USD 1, 72 billion in 2013. Although the share of tourism in gross domestic product (GDP) decreased in 2008 as a result of the global financial crisis, since then it has shown significant growth, accounting for almost 6, 5% of GDP in 2013 (Table 5).

Table 4 Purpose of Visit (2013)

	%
Visiting friends/Relatives	45%
Holiday, Leisure, Recreation	15%
Shopping	14%
Health and Medical Care	9%
Visit to Second Home	4%
Business or Professional	3%
Other	13%

Source: National Statistics office of Georgia

As for the domestic tourism in Georgia, in 2013 the most domestic trips were made by inhabitants of villages and mainly vacations were spent in the central cities of Georgia. While women and men make about the same number of domestic trips, a comparison between different age groups shows differences in travel behavior. Whereas people aged 18 to 24 were the most frequent travelers, taking 2.95 trips per year, people aged 55-64 took an average of 1.7 trips. Visitors' average overnight trip length was 3 nights and varied by place of residence. Visitors from Tbilisi tend to stay for longer periods (4 nights on average) while other visitors spent 2 nights on average away from their usual environment. Domestic visitors most often travel for visiting friends or relatives (VFR) (45%), followed by 15% of trips for holiday, leisure and recreation. Only 3% traveled for business or professional purposes. Other frequently observed visiting purposes include shopping (12%), health and medical care (9%) and visits to the second home (4%) (Table 4). The most common destination was Tbilisi;

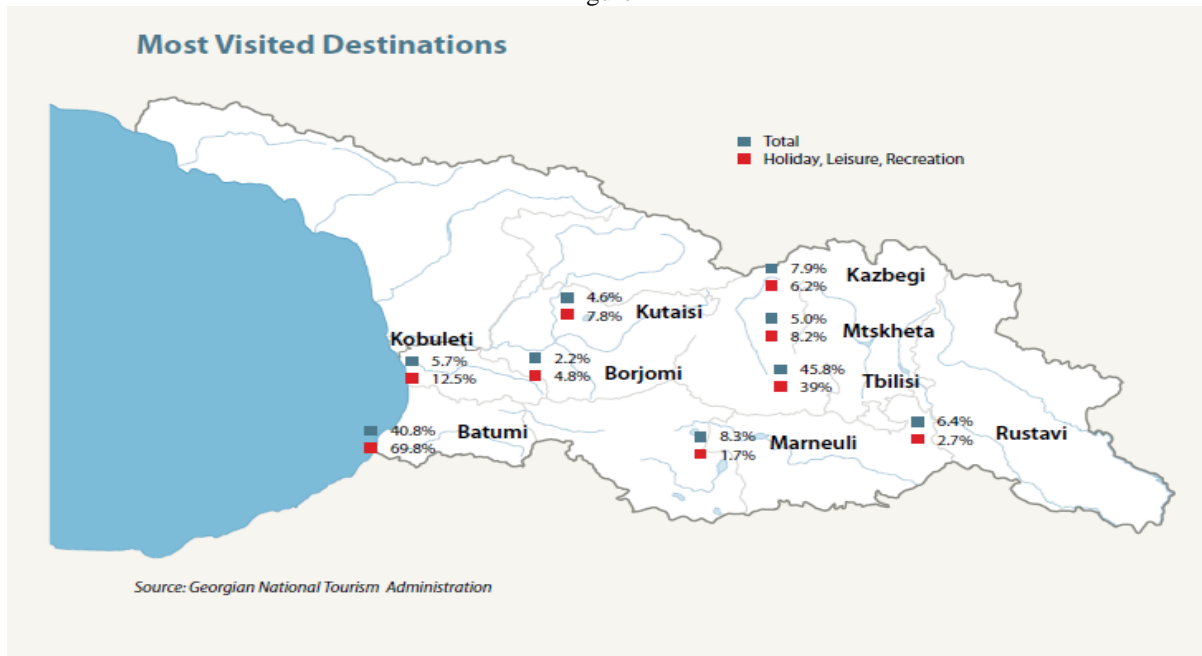
Table 5 Share of Tourism in GDP

Year	%
2007	6.9%
2008	6.2%
2009	5.8%
2010	6.1%
2011	6.0%
2012	6.1%
2013	6.5%

Source: National Statistics office of Georgia

25% of domestic trips were to the capital city of Georgia, followed by 8% of trips to Batumi and Kutaisi. Among other visited destinations were: Mtskheta (4%), Telavi (2%), Zugdidi (2%), Gori (2%) and Rustavi (2%). Between regions most popular places were Imereti, Ajara AR and Kakheti with 17%, 12% and 8% respectively. (Figure 2)

Figure2



63% of domestic travelers stayed in a private home of their relative or friend. This is partially due to the influence of the VFR segment. Considerably large number (14%) of Georgians stayed in their own houses, while 8% stopped in their second summer houses. In the fourth quarter of 2013, the total number of persons employed in tourism amounted to

168.8 thousand. The largest share is employed in the transport sector which accounts for 57% of all tourism employment. Other significant contributors are hotels and restaurants with 20% of tourism employment. Employment in hotels and restaurants has increased by 17%, while in transport by 6%. The decrease compared to the same period last year is 6%, due to decrease in employment in other tourism sectors. In 2012, the total contribution of tourism to employment was 10%. Between 2012 and 2013, the total value added in the tourism sector increased by 10% and reached 480, 35 million USD due to the increased demand. As a result, tourism's gross value added as a proportion of GDP increased from 6.1% to 6.5%. The additional value added in the tourism industry in 2013 was mainly driven by accommodation (+13%) and passenger traffic (air transport +28%, other transport +3%). According to the given figures, Adjara AR and Samtskhe-Javakheti dominate in terms of accommodation capacities. In March of 2014 there are 1075 facilities throughout the country with total capacity of 37 772 beds. The largest numbers of bed-places are in Adjara AR – 28%. As for Samtskhe-Javakheti region, it ensures the strong position of the region in the ranking and it is number two in the rankings – (6237), Tbilisi, the capital of Georgia holds the third position – (5 230). In the last 5 years, the number of hotels and other lodging facilities in the region has grown by 40% and the number of visitors to the region has also increased (approximately 40-45%). Currently there are 151 hotels registered in the region.

Adjara AR has the longest coastline in the country and in many cases for the local communities' tourism is the only source of income. In summer season they rent their apartments. On the other hand, supportive policies, solid public and private investments enabled the coastal city of Batumi, which was very seasonal couple of years ago, to operate as MICE and gambling destination as well as to host many local and international cultural events throughout the year. As for the average rates, according to the Table 1, the highest average rate is in Kakheti – 86 USD. Kakheti is the fourth largest area after Imereti, Kvemo Kartli and Samegrelo-Zemo Svaneti. Around 132 number of accommodation, including hotels “Ambassador”, “Lopota” and “Kvarlis Tba” - operate in Kakheti. Therefore, there is the highest average price, because these hotels are expensive (202 USD). There are several international brand hotels in Tbilisi: Tbilisi Marriott, Courtyard by Marriott, Tbilisi Sheraton Metekhi Palace, Radisson Blue Iveria, Holiday Inn and Citadines. Other international chains are expanding in the city as well. Recently, Sheraton and Radisson Blue hotels were opened in Batumi. Major hotel projects under construction are the following: Kempinski, Hilton, Holiday Inn, Ritz-Carlton and Marriott. The majority of construction (88%) takes place in Tbilisi and Ajara AR, Samtskhe-Javakheti, Imereti and Kakheti regions. The estimated number of additional rooms being constructed is 4,000 with more than 7,000 beds. The average salary in tourism has increased steadily over the last three years. Maximum rate was fixed in Tbilisi – 548 USD and in Mtskheta-Mtianeti – 500 USD. The average monthly salary was 460 USD in Georgia in 2013 (second quarter). This data is compared to the same period in 2012 and was increased by 72.7 USD. In the second quarter of 2012, the average monthly salary is determined by 723.9 USD. To change the dynamics of wages give no reason in terms of the solution of poverty problem to talk about substantial positive changes. It is the truth by official data, the poverty level in 2004-2008 decreased from 24.6% - to 21%, but according to World Bank experts, in 2008, the poverty of the population exceeded to 54%. Volunteer family members, who represent the majority of self-employed people, are not actually employed. This part of self-employed people is forced to perform non-qualified work without any reimburse. This applies to residents of Georgia regions which are mainly employed in agriculture.

## Conclusion

Summing up, to the best of our knowledge, research on the Georgian domestic tourism lacks studies aimed to understanding and comparing the role of alternative explanatory variables, both economic and non-economic. However, some interesting information arises from the existing literature. In particular, it seems that other factors such as distance, tourist services and infrastructure can strongly influence domestic tourist's choice, besides income and living costs. Natural and cultural recourses strongly matter as well, even though they only seem to give a comparative advantage to specific regions or areas. Georgian tourists seem to be particularly sensitive to differences in relative prices between their region and the possible destinations. The per capita GDP in the sending regions plays a significant role as well.

As the rates in Georgian costal destinations are quite high compared to the Mediterranean destinations and service quality is quite low. A number of citizens of Georgia prefer to spend holidays at Turkish beaches as well as in Egypt and in different European destinations where they experience best all inclusive services. They prefer to spend a little more money and relax in an environment of consistent with the price than spend money in Batumi and have less enjoyment.

Therefore, Georgian outbound tourists tend to travel to Turkey, Egypt and Spain. Out of the primary source outbound markets, Turkey is number one in terms of receiving Georgian holiday/vacation makers for sun and beach. The competitive advantages of the Turkish coastal destinations compared to the Georgians ones is mainly high service quality, seasonality and category of services. For instance, almost all accommodations in Adjara AR provide with only breakfast to the guest that is included in the room rate while Turkish suppliers provide all inclusive service.

## References:

- Athanasopoulos G., Deng M., Li G., Song H. (2013). "Domestic and outbound tourism demand in Australia: A System-of-Equations Approach", 1440-771X, 06/13.
- Liping A. Cai, Bo Hu, F. Ruomei. (2002). "Domestic tourism demand in China's urban centres: Empirical analyses and marketing implications", *Vacation Marketing*, 8:64.
- Massidda C. Etzo, I (2012). "The Determinants of Italian domestic tourism: A panel data analysis" *Tourism Management*, 33, 603-610.
- M. Monfort, V. Guardia, T. Muro Romero. J, M<sup>a</sup> E. Sedano, „Analyzing domestic tourism demand in Spain: Origin and destination matrix”, 10th international forum on tourism statistics.
- [www.gnta.ge](http://www.gnta.ge)
- [www.georgia.travel](http://www.georgia.travel)
- [www.geostat.ge](http://www.geostat.ge)

# HOUSEHOLD STRUCTURE AND STUDENTS' ACADEMIC PERFORMANCE: A COMPARATIVE ANALYSIS OF CHILDREN RAISED BY GRANDPARENTS AND SINGLE PARENTAGE

*OyetaKin Sylvia Olayemi*

School of Arts and Social Sciences

Topmost College of Education, Ipaja, Lagos State, Nigeria

---

## Abstract

The dissertation examined house hold structure and students academic performance with a major focus on the comparative analysis of children raised by grandparents and single parentage in Lagos State senior Secondary schools. The general awareness of the importance of the home environment on student's academic performance necessitate an investigation into the family structure as it affects the students' academic outcome.

The research design was a fusion of questionnaire technique with field observation and oral interview. The population for this study consisted of all the students, and teachers in the senior secondary schools in addition to market women in selected markets in Ojo local Government area of Lagos State. Based on this, ten (10) senior secondary schools were purposefully sampled comprising of ten 10 students from separate single parents home and ten (10) students raised by their grandparents, a total of two hundred students. Also, fifty (50) teachers and ten 10 market women were sampled. Three research questions and three hypotheses were advanced and tested in the study. Three types of questionnaires were used, titled questionnaire on parenthood for students (QPS), questionnaire on parenthood for teachers (QPT), and questionnaire for market women (QPMW). These instruments were validated and found reliable at  $r=0.88$ . The study revealed that no significant difference existed between the academic performance of students from single parents and those from two parent families ( $t_{cal.276} < t_{tab} 1.96$  at  $p > 0.05$ ). However, significant difference existed in the means of the academic performance of male students from single parent and male students from two parent family ( $df=(3,28)$ ,  $83.74$ ,  $p < 0.05$ ) and female students from single parent and female students from two parent families. Also, there is difference between the academic performance students raised by grandparents and students from single parent families ( $df=(3,28)$ ,  $31.54$ ,  $p < .05$ ).

From the findings and conclusion of this study, sufficient evidence were provided such as government initiating educative and enlightenment programme on how to improve and sustain intact parenthood through the mass media and that fund to the assistance of victims of single parenthood.

---

**Keywords:** Suitable learning, broken family, Household Structure, Parenting Styles, Stigmatization, social equilibrium

## Introduction

Over the years, investigations of the factors that influence academic performance of students have attracted the interest and concern of many teachers, counselors, researchers and also many school administrators in Nigeria. This is simply because of the complain of members of the public concerning the low standard of education in the country. The declining

quality of education in the country and the breeding of graduates with little or no experiences, and little technical knowhow has resulted in serious setbacks to the industrial development of the nation Nigeria. (Uwaifo, 2008). Previous studies have been concentrated on the area of socio-economic status of parents. Other aspects of parental environment such as the structure of the family have been grossly neglected. Also parents' constant disagreement affects children emotionally and this could lead to poor academic performance in school.

Aside from the constant disagreement between parents, some other factors contribute to low academic performance of students in schools. These factors include – A broken family which could be caused by death of a parent or both parents, divorce, separation, dissolution and illegitimacy, single parent families and sibling structure. Recent evidence from researches suggests that family social status or cultural background does not need to be used to determine a child's academic achievement or performance at school. Also, researches have shown that for academic success to be determined, it is what parents do in the home, and not children's family background that is significant.

Similarly, Agunlana (1991) indicated that in relation to academic outcomes, the potential limitations associated with poor economic circumstances can be over-come by parents who provide stimulating supportive and language-rich experiences for their children. Children who are raised through single parentage have low academic performance and they are more prone to peer pressures by engaging in some deviant behaviors. They have higher dropout rates from primary or secondary school levels and also have greater social and psychological problems. Economic hardship in single-parent families is most likely to require the adolescents to work long hours and to take greater responsibility for younger brothers and or sisters. As a result of this, the time-consuming activities are likely to be related to low academic performance.

It is gathered that the absence of a parent is probably associated with a decrease in total parental involvement, which in turn is related to poor school or academic performance. In African setting, it is believed and clearly seen that the absence of fathers has a particular negative socialization influences which may be detrimental or dangerous especially for male children. A daily sketch publication "Causes and Cures of Poor Performance at West African School Certificate Examination (WASCE)" in 2006 identified and categorized problems responsible for students' poor performance to problems of teachers, problems of inadequate facilities in the schools, problem traceable to students, problems caused by parents and society at large and problems of government policies and low funding of the education sectors. (Ajila & Olutola, 2007).

### **Concept of Family Structure and Learning**

The home has a great influence on the students' psychological, emotional, social and economic state. In the view of Ajila and Olutola (2007), the state of the home affects the individual since the parents are the first socializing agents in an individual's life. This is because the household background and context of a child affect his reaction to life situation and his level of performance. Although, the school is responsible for the experiences that make up the individual's life during school periods, yet parents and the individuals experience at home play tremendous roles in building the personality of the child and making the child what he is.

Trebolo, E. (2012), reports that as early as age three, children's ability to adapt to classroom routine appears to be influenced by their parents' marital status. For instance, three and four year old children growing up with their own married parents are three times less likely than those in any other family structure to experience emotional or behavioural problems such as attention deficit disorder. Baumirind (2005) also stated that children living with their own married parents are more likely to be more involved in literacy activities than

children from single-parent homes. Not growing up with their own married parents appears particularly damaging for young children because the cognitive and social behaviour developed early on present throughout childhood affecting the course of effective learning or good academic performance.

It has been critically observed that the environment in which the child comes from can greatly influence his academic performance at school. Although, the home environment or the family has been recognized as having a lot of influence on the academic performance of students, socio-economic status and educational attainment of parents too needs to be critically looked into.

### **Effects of Single Parenthood on Students' Academic Performance**

Several situations can account for a husband and wife calling a quit to their relationship. In relationship between husband and wife, love for one another is a function of contribution because no one eats love like food, though there is a general knowledge that love satisfies our emotional and psychological needs. In the light of this, the following situations are few examples of what may bring about a breakdown in any relationship.

1. Quarrel about income: spending money issue, poverty or greed.
2. Level of trust and communication issue.
3. Cheating or infidelity.
4. Issue of child care
5. In laws and mismanagement of funds
6. Political issue: opposed social and political interest.
7. Issue of political or extended family
8. The issue of physical attraction, sex and love making.
9. Religious views, inclination and association.
10. Fear of death, intercultural conflicts, and home culture.
11. Life in diaspora (distant relationship).

The values and attitudes, customs and tradition of the society are taught to young children in the family. Also, social behaviour is learnt in the family. Haralambos & Holborn (2008), maintained that Nigerian family like others in the world perform those functions which are immediately and ultimately necessary in ensuring society's preservation, perpetuation and progress. It is in the family that the children first learn his social roles and when single family cannot do all these, the child learns from his social group. Hickman, Bartholme and McKenny (2000) argued that human dignity begins in the home and the family is the breeding ground of all inter personal relationship and also the basic sociological unit where personal character is first moulded and self-identity is first formed.

Conclusively, conflict appears to be an important influence in a number of adverse outcomes including behaviour problems. Reduced parental attention is usually associated with separation. The prevailing anti-social behaviour such as telling lies, cheating during examination, exaggeration of facts, stealing, lack of respect for common property, sexual abuse, drug abuse and truancy which are very rampant among the secondary school students could be traced to parental separation.

### **Statement of the Problem**

The problem of this research is to find out how children raised by grandparents and single parentage have affected household structure and students academic performance. According to Programme International Student Assessment (2000:12) it was stressed that "it is evident that the quality of parents and the structure of the home of a child go a long way to predict the quality and regularity of the satisfaction and provision of a child's functional survival and academic needs" Families could benefit in this research because couples would

be exposed to the need for them to guard their marriage jealously from all forms of separation so that proper values, norms, attitudes, customs and traditions of the society could be imbibed by the adolescents within the family and the society as a whole.

It is observed that there is a link between household structure and students' academic performance. This has brought about a comparison between students raised by grandparents and students raised by single parents and has attracted attention of experts from different fields.

### **Purpose of the Study**

The general background and the purpose of this study is to investigate the possible contributions of household structures to the academic performance of students especially students raised by grandparents and single parentage.

### **Research Questions**

- i. Is there any difference in the academic performance of students from single parent families and those from two parent families?
- ii. Is there any difference in the academic performance of male students from single-parent families and male students from two parent families?
- iii. Does any difference exist in the academic performance of female students from single-parent families and female students from two parent families?
- iv. Is there any difference in the academic performance of students raised by grandparents and students raised by single parent families?

### **Research Hypotheses**

In pursuit of the research problems and to realize the objectives of this research or study the following hypothesis were raised and tested as a guide to the study.

- i. There no significant difference in the academic performance of students from single parent families and those from two parent families.
- ii. There is no significant difference in the academic performance of male students from single-parent families and male students from two parent families.
- iii. There is no significant difference in the academic performance of female students from single-parent families and female students from two parent families.
- iv. There is no significant difference in the academic performance of students raised by grandparents and students from single parent families.

### **Research Design**

As a result of variation in people's notion about household structure, single parentage and grand parenthood, the research design that was adopted for the collection of the needed information for this study was the fusion of questionnaire technique with field observation and oral interview.

### **Population Covered**

The population that was used for this study consisted of the students and teachers in the senior secondary schools, market women in selected markets in Ojo Local Government Area of Lagos State, Nigeria. Because of age brackets of students which falls between the children and adolescent age, Boys and Girls in senior secondary schools in Ojo Local Government were used.

Teachers were included in the population because they are also parents and are involved in the day to day upbringing of children while market women were also involved in



order to give public opinion on the various influences and effects of grandparents on the students academic performance.

### **Sampling and Sampling Techniques**

The sampling technique adopted for this study is the list of Senior Secondary Schools in Ojo Local Government Area of Lagos State. The first stage of the research involved the arrangement of all the names of senior secondary schools in the local government area in Ojo Local Government in Lagos state. Based on this, the first secondary school which appears on the list was purposely sampled. This sampling method was also used in sampling ten (10) students from separate single parent homes and ten (10) students who were raised by their grandparents, a total of twenty (20) students in each of the sampled senior secondary schools.

Moreover, teachers' attendance register were used based on the list of teachers that were physically present in each of the sampled schools on the day of the administration of the questionnaires which were designed for this study. Five teachers were used in each of the sampled senior secondary schools. In addition accidental method of sampling was used using ten market women in each of the sampled markets.

### **Instrumentation**

The data used in this study were obtained from two main sources and these are primary and secondary data sources. The primary data was sourced from the respondents' responses through the use of questionnaires. The three types of questionnaires were respectively titled. Questionnaire on parenthood for students (QPS) and questionnaire on parenthood for teachers (QPT), also questionnaire on parenthood for market women (QPMW).

Each type of questionnaire comprises of two sections. Section deals with the personal data (Bio data) of the respondents and is made up of 7 questions. Section B are questions centred on how household structure and students academic performance affects children raised by grandparents and single parentage.

In an attempt to ensure that the instruments measure what it is purported to measure, the researcher subjected it to test re-test method on subjects different from the sample. These two responses from the test re-test method on subject different from the sample. These two responses from the test re-test were subjected to Pearson Product Moment Correlation Coefficient with a result of  $r=0.88$  which revealed that the instrument are adequately sufficient to measure what it was meant to do.

### **Results**

From the analyses of the information gathered an attempt was made to show the characteristics of responses in the instruments. Thus, the differences and varying degrees of responses as well as the results are revealed.

### **Analysis of Research Questions**

#### **Question One**

Is there any difference in the academic performance of students from single parent families and those from two parent families in senior secondary schools in Lagos State? In answering this question, items 1,3,4,5,6,7,9,11,13,and 14 of the teachers instrument were pooled and average is presented in table 1.

Table 1

<i>Frequency of Responses Teachers' on Parenthood and Students' Academics in Secondary Schools</i>						
<b>Items</b>	<b>%SA</b>	<b>%A</b>	<b>% U</b>	<b>% D</b>	<b>% SD</b>	<b>% Total</b>
1	13	29	23	15	20	100
3	12	23	33	21	11	100
4	15	20	12	32	21	100
6	2	12	8	31	47	100
7	4	10	5	36	45	100
9	29	35	10	13	13	100
11	10	12	6	34	38	100
13	23	12	5	27	33	100
14	7	11	9	30	43	100
<b>Ave.</b>	<b>12.8</b>	<b>18.2</b>	<b>12.3</b>	<b>26.6</b>	<b>30.1</b>	<b>100</b>

Source: field work, 2013

From table 1, participants' response to the level of students' parenthood and school work in senior secondary schools was scored on average of 12.8% (SA) and 18.2% (A) and 12.3% (U). But 26.6% respondents Disagree and 30.1% Strongly Disagree that single parents are found wanting in their obligations to their children academics in senior secondary schools.

### Question Two

Is there any difference in the academic performance of male students from single parent families and male students from two parent families in senior secondary schools in Lagos State?

In responding to this question, the academic records of sampled students of two hundred (200) students in all the ten secondary schools were taken along with their responses to the students' questionnaire to arrive at table 2.

Percentage of Academic Performance of Male students from -Single Parent Families and Male students from -Two Parent Families in Senior Secondary Schools in Lagos State

Table 2

<b>Subject</b>	<b>Male- Single Parent Families</b>				<b>Male- Two Parent Families</b>			
	<b>Distinction</b>	<b>Credit</b>	<b>Pass</b>	<b>Fail</b>	<b>Distinction</b>	<b>Credit</b>	<b>Pass</b>	<b>Fail</b>
Eng.	5.88	40.11	38.10	15.91	4.19	39.06	41.00	15.75
Maths	9.03	37.56	40.17	13.24	9.01	35.11	39.99	15.89
Bio.	15.11	36.13	39.01	9.75	12.11	47.00	31.00	9.89
Econs.	16.23	50.11	30.17	3.49	15.33	46.12	28.55	10.00
<b>Ave.</b>	<b>11.56</b>	<b>40.98</b>	<b>36.86</b>	<b>10.60</b>	<b>10.16</b>	<b>41.82</b>	<b>35.14</b>	<b>12.88</b>

Source: field work, 2013

From table 2, the disparities in results of both male-single parent families and male-two parent families were minimal. In English an average of 5.88 candidates had distinction in male-single parent families whereas an average of 4.19 candidates made distinctions in male-two parent families. A cumulative average of 40.98 and 36.86 had credits and passes in male-single parent families while in the male-two parent families, a cumulative average of 41.82 and 35.14 had credits and passes.

But, average failure was higher in male-two parent families (12.88) than in male-single parent families (10.60). See figure 1.

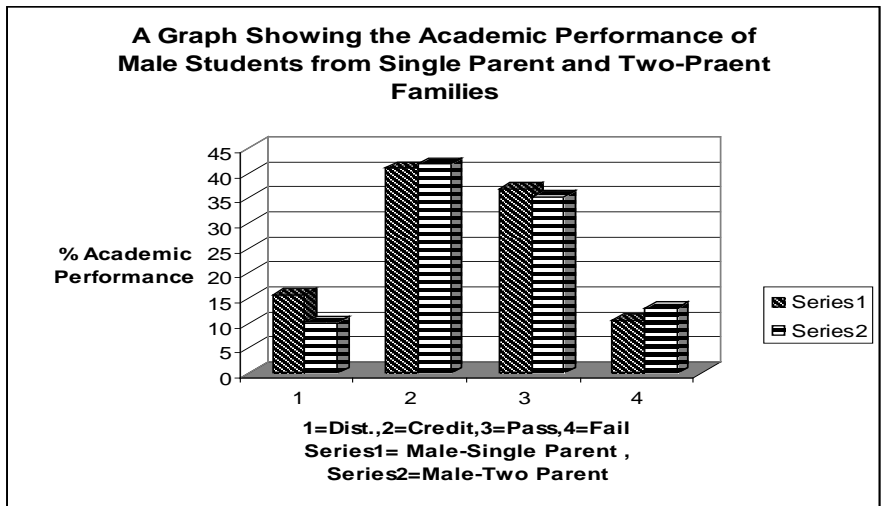


Figure 1: Derived from table 2.

**Hypotheses Testing**

In testing the hypotheses advanced for this study, the performance of students in English, Mathematics, Biology and Economics in conjunction with responses from the teachers, students and market women questionnaires were used in finding out the significant differences with the variables identified in each hypothesis.

**Hypothesis One**

There is no significant difference in the academic performance of students from single parent families and those from two parent families. In testing this hypothesis t-test analysis was used.

Table 3

**Summary of t-test on the Academic Performance of Students from Single Parent Families and those from two Parent Families in Senior Secondary Schools.**

Source	N	Mean	Std. Deviation	SEM	df	t-cal	t-tab	Sig.
Single-Parent	100	25.1025	19.07951	4.27	199	.276	1.96	P>.05
Two-Parent	100	23.4635	18.41829	4.12				

NS = Not Significant

The t-test result presented in table 3 was used in establishing whether or not significant difference existed between the means. The data on the table shows that the t-cal. = .276 is less than the t-table value of 1.96 at P>.05 and at df = 199. The implication of this is that the differences observed in the results between the students of single-parent families and two-parent families in senior secondary schools are not significant.

**Hypothesis Two**

There is no significant difference in the academic performance of male students from single parent families and male students from two parent families. In analyzing this hypothesis, a one-way ANOVA was performed.

Table 4

**Summary of One-way ANOVA of the Academic Performance of Students from Single Families and those from two Parent Families in Senior Secondary Schools.**

Source of Variations	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	6116.840	3	2038.947	83.742	.000
Within Groups	681.741	28	24.348		
<b>Total</b>	<b>6798.581</b>	<b>31</b>			

\* Significant

The result of the one-way ANOVA performed revealed that significant difference among the mean exists.  $Df=(3,28)$ ,  $F\text{-cal}= 83.742 > F\text{-val} = .000$ ,  $P < .05$ . This implies that the hypothesis is rejected. Thus, there is a significant difference in the academic performance of male students from single parent families and male students from two parent families in senior secondary schools.

### Hypothesis Three

There is no significant difference in the academic performance of female students from single parent families and female students from two parent families.

Table 5

*Summary of Mean Difference in the Academic Performance of Female Students from Single Parent Families and Female Students from two Parent Families in Senior Secondary Schools.*

Source	N	Mean	SD	SEM	df	t-cal	t-val	Sig.
Single- parent	50	24.86	20.10	10.05	99	.715	.005	P<.05
Two-parent	50	24.92	16.95	8.48				

\* Significant

Table 5 shows the t-test analysis of academic performance of female students from single parent families and female students from two parent families in secondary schools in Lagos State ( $t(99) = .715$ ;  $p > .05$ )

Thus, the hypothesis is rejected. This implies that there is a significant difference in the academic performance of female students from single parent families and female students from two parent families.

### Hypothesis Four

There is no significant difference in the academic performance of students raised by grandparents and students from single- parent families.

Table 6

*Summary of One-way ANOVA of the Academic Performance of Students Raised by Grandparents and those from Single- Parent Families.*

Source of Variation	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	8332.310	3	2777.437	31.544	.000
Within Groups	2465.410	28	88.050		
<b>Total</b>	<b>10797.720</b>	<b>31</b>			

\* Significant

From table 6, the one-way ANOVA performed revealed that significant difference among the mean exists.  $Df=(3,28)$ ,  $F\text{-cal}= 31.54 > F\text{-val} = .000$ ,  $P < .05$ . This implies that the hypothesis is rejected. Thus, there is a no significant difference in the academic performance of students raised by grandparents and students from single- parent families.

### Discussion of Results

The percentage of academic performance of male students from single families and male students from two-parent families shows that in English language an average of 5.88 candidates had distinction in male students from single parent families whereas an average of 4.19 candidates made distinctions in male students from two parent families. A cumulative average of 40.98 and 36.86 had credits and passes in male students from single parent families, while a cumulative average of 41.82 and 35.14 had credits and passes in male

students from two-parent families (table 19). Therefore, average failure was higher in male students from two parent families (12.88) than in male students from single parent families (10.60).

In the light of the above findings, it is vivid that the result of the findings did not corroborate the opinion of Haralambos and Holborn (2008), that being a single parent is stressful because the responsibility of the children the home and the bills resting on the shoulders of a single parent can be overwhelming, therefore a single parent may not be able to face the educational challenges of the child.

The above result shows that children from single parent can still be serious and attain a high academic level depending on the capability of such a single parent. The researchers' view is supported by Scepter and Prensky (2009), which said that the extent to which the child's intellectual potentialities for success in educative processes can be realized depend initially on how the parents who transmitted these potentialities can provide and sustain them.

Credence to this result Modo (2001), observed that children from single home tend to perform less well in school and gain fewer educational qualifications. The website adds that children from single parent families are three times likely to drop out of school than children who live with both parents, even when they have the same intelligence levels and academic capabilities. According to Giddens (2009), students who live in homes led by only one of their parents attend school less and drop out more. The adoption com website indicates that children from single-parent households often have more difficulty performing in school and may achieve at lower levels than their counterparts from two parents households.

It has also been observed that the academic performance of children raised by grandparents is nothing to write home about, this could be ascribed to the weakness of the grandparents are found to over pampered and are less disciplined due to the fact that the grandparents have become weak and are no more agile, they are no longer strict and can no longer enforce disciplinary actions because of their ages. Moreso, in most villages, grandchildren are seen leaving with their grandparents as helpers who go about on errands, hawking and doing all other house chores. As a result of this they become over laboured and have little or no time for their academic activities.

### **Contribution to the Study of Knowledge**

The study has contributed significantly to knowledge in several ways:

Firstly, an individual who has not become a victim of single parent would likely guard against becoming one if he/she comes across this work.

Secondly, families could benefit in this research in the sense that couples would be exposed to the need for them to guard their marriage jealously from all forms of separation, so that proper values, norms, attitudes customs and traditions of the society could be imbibed by the adolescents within the family and the society as a whole.

Thirdly, it is also believed that the outcome of this study would help to impart positively on the society by opening the eyes of every member of the Nigerian society especially the lowly placed members like the illiterates e.g. the market women, among whom the incidence or case of child neglect is rampant when it comes to the issue of separation or divorce.

Lastly, the research could reduce divorce rate in the society, and could be of immense benefit to stakeholders in research on children education government establishment on children welfare and also it could be an invariable benefit to marriage counselors.

### **Conclusion**

It has been noted that children are generally well-behaved in the community and school not only bring a good name the family but also a source of joy to the parents.

Therefore, parents should guide against becoming victims of single parenthood so as to improve the children's welfare and academic performance and also lessen the anxiety of teachers, school authorities, counselors, ministry of education, government and the society at large.

### Recommendations

From the findings and conclusion of this study, the following recommendations are hereby suggested to aid and improve the environmental quality in the study area.

1. The government should initiate educative and enlightenment programme on how to improve and sustain intact parenthood through the radio, television and other mass media.
2. Government should commit more funds to take care of victims of single parenthood.
3. Policy makers should always take the subjective views of their wards into consideration in order to avert the problem of single parenthood in the society.

### References:

- Ajila, A. Olutola, A. (2007) impact of parents' socio-economic state of university student's academic performance *Ife journal of educational studies*. 7 (1): 31:39.
- Agbo, J.O. (1997). Effect of delinquent environment on academic achievement of pupils in army children's school. *The Nigerian Teacher Today (TNNT) A Journal of Teacher Education*. 5 (1 & 21) 96-105.
- Agunlana, G.G. (1991). Family structure and prevalence of behavioural problems among Nigerian adolescents. *The counselor*, 17 (1): 154-154.
- Baunrind, D (1996) parenting styles, London: Oxford press.
- Haralambos, M and Holborn, M (2008) *Sociology Themes and Perspectives*, 7<sup>th</sup> edition, London: Harpercollins Publishers Limited.
- Hickman, G. Bartholme S. and McKenny, P(2000) influence of parenting styles on the adjustment and academic achievement of traditional college freshmen, *Journal of College Student Development* (41), 41-52.
- Giddens, A. (2009). *Sociology*, 6<sup>th</sup> edition, Cambridge UK : polity press,.
- Modo I.V.O. (2001) "migrant culture and changing face of family structure, *Journal of Comparative Family Studies*, 32, (3), 443-52.
- Programmes International Students Assessment (2000). Influences of academic and educational success of students and school work. *Contemporary Education* 12 (6).
- Scepter, M and Prensky, L. (2009). Impact of home and school on children's learning, London: Ildn. Publishing house.
- Trebolo, E. (2012): What your Adolescent needs from you, concluding thoughts on adolescent needs from Wikipedia, the free encyclopedia .
- Uwaifo, V.O. (2008) Effect of family structure and parenthood on the academic performance of Nigerian university students, [www. Republishes.com /02-journals](http://www.Republishes.com/02-journals) 121-124, kamla-Ray 2008.

## MANAGEMENT OF ECOTOURISM IN GEORGIA

*Maia Meladze, Associate Prof.*  
Grigol Robakidze University, Tbilisi, Georgia

---

### Abstract

For many developing countries tourism is one of the main sources of income, creating and generating much needed employment opportunities for socio-economic development. Within tourism is the new trend known as ecotourism whose main aim is to minimize the negative aspects of tourism on the host country. Ecotourism is sustainable tourism segment which includes relatively quiet natural landscapes of inspection including the protected areas. In the international tourism market typical tour operators are searching for new products, new countries in order to diversify their tourism packages. This is a strategy to keep clients on board as well as to attract new ones. According to ecotourism statistics, it was seen from the eighties a marked shift from mass tourism to ecotourism and more and more tourists were seeking environmentally relevant holiday destinations. The ecotourism statistics further shows that nature tourism has generated, it is believed, as much as seven percent of all international travel expenditure and they further reveal that this rate is increasing by about ten to thirty percent each year. Significant attention must be paid to current problems connected with deterioration of global environmental conditions, such as: climate change, violation of the ozone layer, demographic explosions, ecosystem changes and threat to biodiversity, weak energy condition, pollution, water scarcity, and loss and destruction of protected natural areas and changes in the natural processes in the biosphere. The solutions to these challenges lie in the management of ecotourism to fight this exploitation through protection, conservation and utilization of valuable resources.

---

**Keywords:** Tourism, Ecotourism, Sustainable Tourism, Management

### Introduction

The term tourism is an economic and social phenomenon. Over the decades, tourism has become one of the world's largest and fastest growing industries. Accounting for more than 30% of the world's exports of commercial services and more than 6% of overall exports of goods and services, tourism has a major and increasing impact on both people and ecosystem services. For many developing countries it is one of the main sources of income, creating and generating much needed employment opportunities for socio-economic development.

The development of tourism, despite the current downturn in the world, shows a steady increase in tourism demand: The growth in international tourism in 2013 was equals to the growth in income generated by over one billion tourists who travelled for business, leisure, visiting friends and relatives or other purposes. Such results confirm the increasingly important role of the tourism sector in stimulating economic growth and contributing to international trade.

The continued growth of the tourism industry and its associated tendency to overcrowd a destination progresses in tandem with strong environmental sentiments from consumers who increasingly demand cleaner, more sustainable and more environmentally friendly tourism destinations. These qualitative and quantitative trends necessitate the

development and management of sustainable and biodiversity based tourism products, linking tourism with the sustainable use of natural resources and conservation management.

Total export earnings generated by international tourism in 2013 reached US\$ 1.4 trillion. Receipts earned by destinations from international visitors grew by 5% to reach US\$ 1159 billion, while an additional US\$ 218 billion was earned by international passenger transport. Tourism has a changed face, as after the First World War, it has changed from domestic travel to international travel that has seen it grow exponentially even in developing countries.

Within tourism is the new trend known as ecotourism whose main aim is to minimize the negative aspects of tourism on the host country. Ecotourism is mainly intended for small groups of tourists and the local organization, by small specialized enterprises. The categories of tourists interested in this kind of tourism are clearly aware of environmental responsibility.

Ecotourism is sustainable tourism segment which includes relatively quiet natural landscapes of inspection including the protected areas. This type of tourism is popular among tourists of the categories which are eager to get more information on the local ecosystem, eco culture and concerned about environmental problems. The typical eco-tourist is aged between thirty-five and fifty-four years of age and of these, it is believed that as many as eighty-two percent have graduated from college, and are more than ready to pay more than what average tourists pay, which is about twelve hundred dollars for a trip. This type of investing does not require a lot of tourism, but it is necessary to have qualified guides, because the places where tourists travel the strict conservation measures are needed.

Ecotourism is: "Responsible travel to natural areas that conserves the environment and improves the well-being of local people." Ecological tourism is nature-oriented tourism; therefore, diversity of eco-tourism could represent the two main types:

- Ecotourism in protected areas, traditional or eco-tourism destination, which are ecological tours in the narrow sense of the term, and the so-called "Australian" (or "North American");
- Ecotourism not only within the protected areas. This type of eco-tourism is the so-called "German" (or Western - European) model and faces a wide range of eco trips.

Ecotourism is generally created by the natural environment and cultural diversity. Ecotourism promotes the natural and socio-cultural environment. It creates jobs and income to local residents. On the other hand, where the eco-tourism acts, the environment needs to provide additional control and security measures.

Ecotourism has four main cornerstones: the development of sustainability, economic benefits for local communities, cultural and educational integration of components. It is also necessary to take into account the fact that tourism in the state as well as private sector has common interests. Very often, short-term benefits and long-term interests are sacrificed. This is a particularly obvious example of the least developed countries where the population is forced to put up with long-term, ecocide "in order to survive in the short term".

In recent years the requirements for ecotourism strategies have widened to include the search for tools that guarantee more benefits for the local community and indigenous populations, particularly in rural areas. These rural areas are mostly characterized by rich biological diversity, the central asset for tourism. It would be desirable to have more opportunities for the youth that they realize need and importance of nature for human development- survival from the very beginning.

In the international tourism market typical tour operators are searching for new products, new countries in order to diversify their tourism packages. This is a strategy to keep clients on board as well as to attract new ones. According to ecotourism statistics, it was seen from the eighties a marked shift from mass tourism to ecotourism and more and more tourists were seeking environmentally relevant holiday destinations. These ecotourism statistics



further shows that nature tourism has generated, it is believed, as much as seven percent of all international travel expenditure and they further reveal that this rate is increasing by about ten to thirty percent each year.

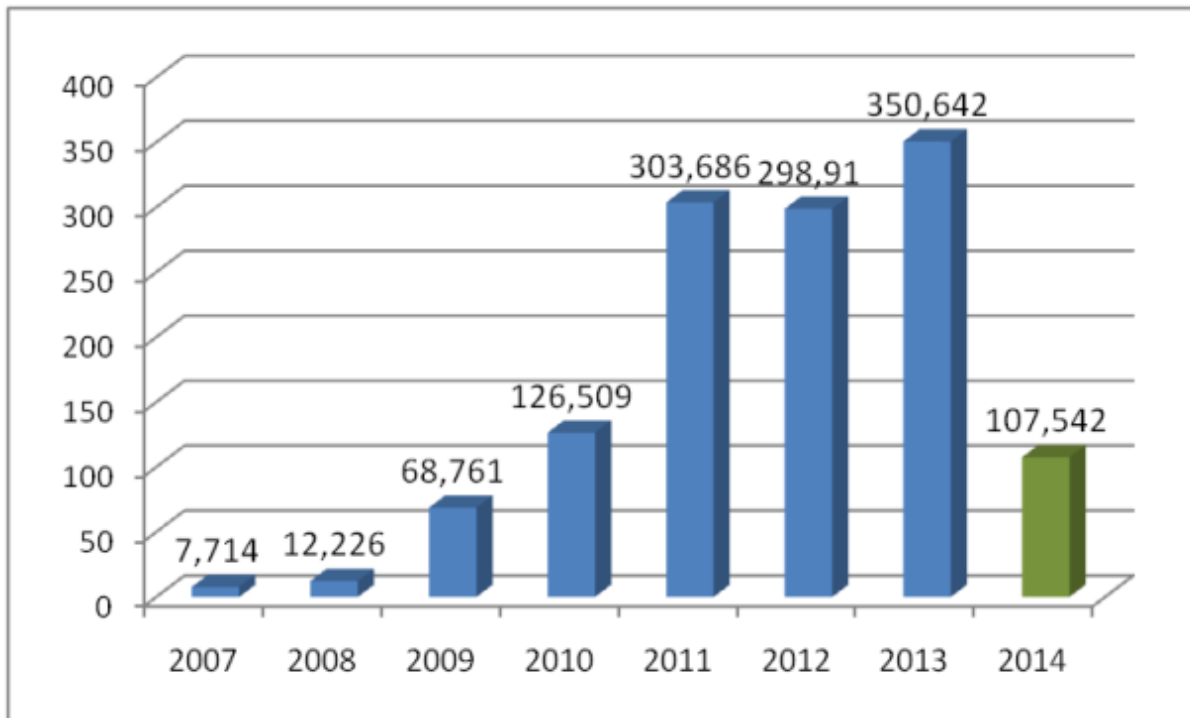
Table 1. Visitors Visited Georgian Protected Areas

Year	2007	2008	2009	2010	2011	2012	2013
Visitors	7,714	12,226	68,761	126,509	303,686	298,91	350,642

Source: www.apa.gov.ge Agency of Protected Areas

Each year several million visitors visit large national parks. The National Parks visitor number is growing every year. If we consider the visitor statistics, we see that in 2005 the Georgian protected areas were visited by 5 669 people, and in 2013 this number increased to 350 642 (See table 1 and graph 1).

Graph 1. Georgian Protected Areas Visitor Statistics by Years



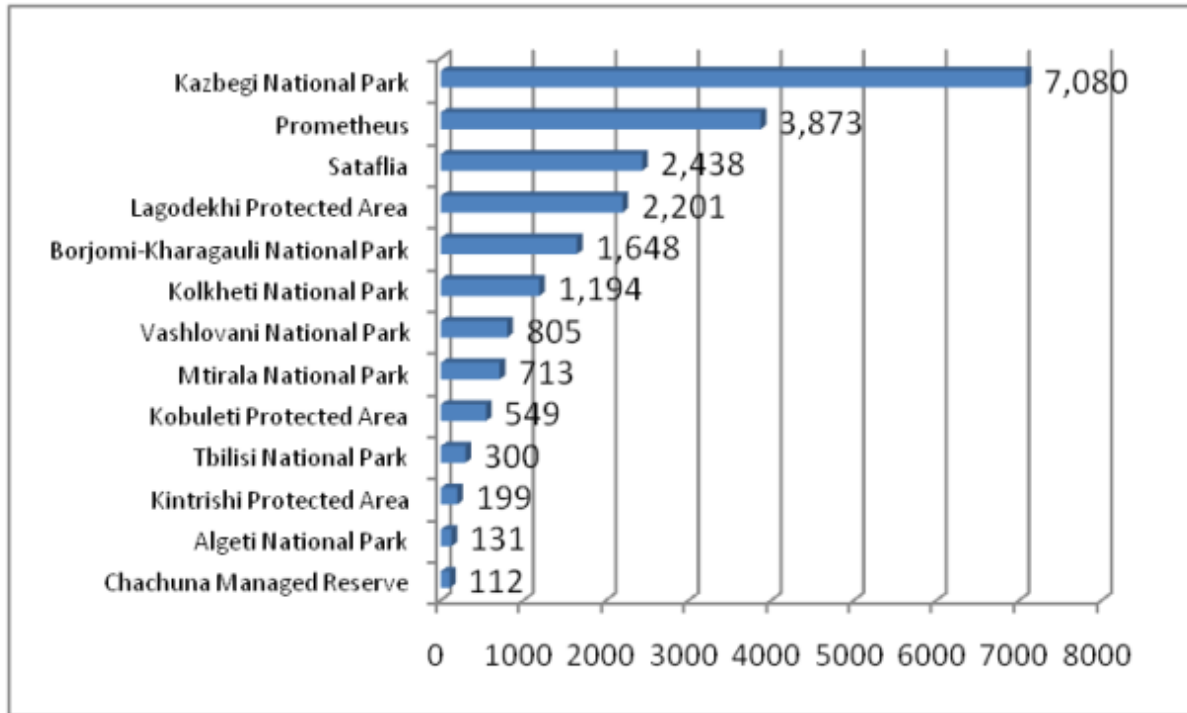
Source: www.apa.gov.ge Agency of Protected Areas

As for each protected areas in 2014, Kazbegi National Park is the first popular with 7080 visitors, Prometheus Cave is the second with 3873 visitors and Sataflia is the third with 2438 visitors (see graph 2).

The effort to introduce the environmental protection planning system in Georgia dates back to the 1990s. On April 21, 1994, the Georgian Parliament ratified the Convention “About biological diversity”. Georgia’s affiliation with the mentioned document was extremely important in respect of protection of environment and biodiversity.

The fact of the major principles of sustainable development being given in the Constitution of Georgia with its Article 35 entitling every citizen to live in the healthy environment, use natural and cultural environment, receive thorough, objective and timely information about his jobsite and residential environment can be regarded as an important step made towards the adaptation of the national-level measures oriented on the sustainable development.

Graph 2. Visitor Statistics by Georgian Protected Areas (2014)



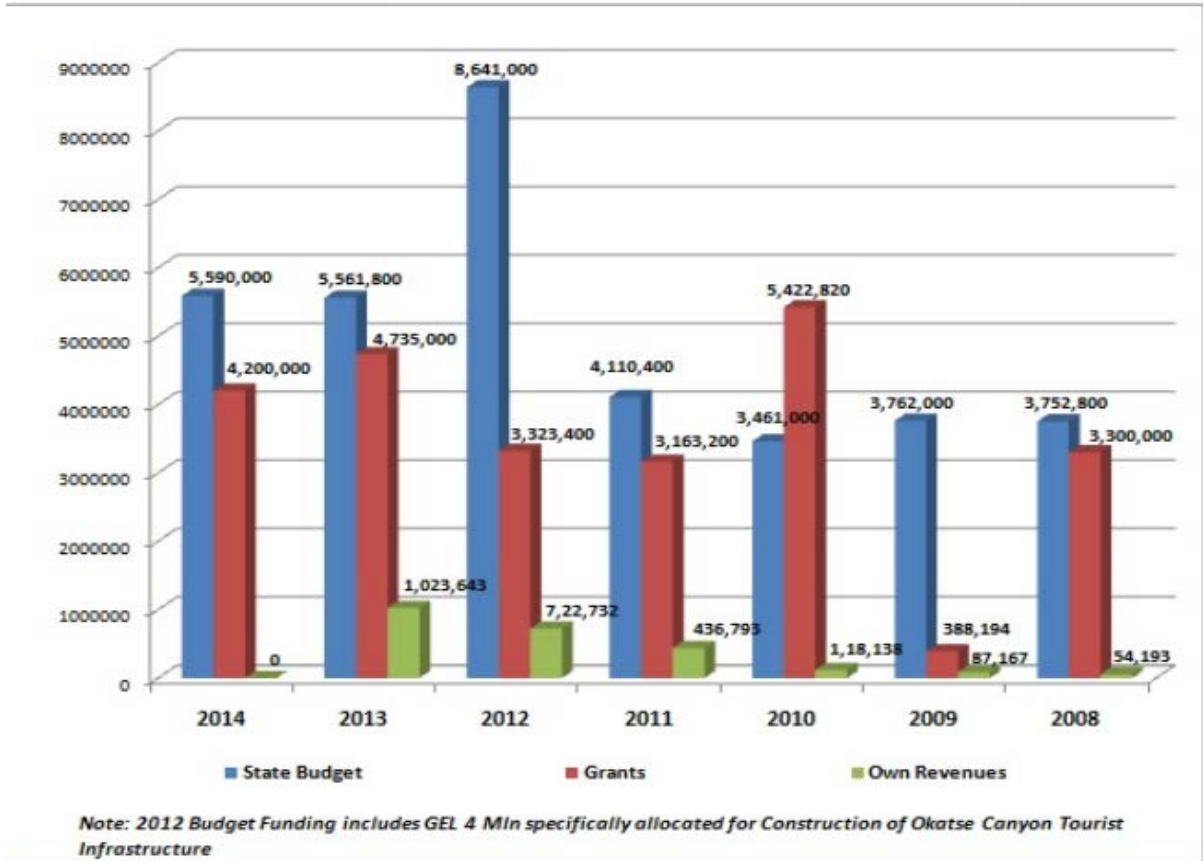
Source: [www.apa.gov.ge](http://www.apa.gov.ge) Agency of Protected Areas

In 1996, a frame law “On Environmental Protection” regulating legal relations between the state authorities and physical and legal entities (regardless the type of ownership or legal status) in the field of environmental protection and nature management all over Georgia, including its territorial waters, air space, continental shelf and special economic zone, was adopted. In June of 2003, the Georgian Parliament adopted the law “On the Red List” and “Red Book” of Georgia. The law gives legal definitions (having recommendatory and methodic significance) of the Red List and Red Book of Georgia of the endangered wild animal and wild vegetation species. The law also defines the structure of the Red List and procedures to develop the list of species to be Red-Listed, and develop, adopt and renew (review) the draft List. The mentioned law also regulates the issues related to planning and financing the measures to include the endangered species in the Red Book, to protect, obtain, rehabilitate and preserve them.

Under the Decree of the Georgian Government of 2006, all ministries are obliged to develop and annually review an average-term action plan (strategy) defining the priorities in the country, measures and financial calculations for different sectors; efficient use of natural resources and forests, improvement of the environmental protection system and promotion of ecotourism.

In Georgia, it is the Ministry of Environmental Protection developing the state policy in the field of biodiversity and being responsible for its realization. The Ministry is also responsible for the development and coordination of the state monitoring system for biodiversity. The Ministry sets the admissible limits (quotas and limits) of using natural resources, specifies the places of use, conditions and rules.

Graph 3. Funding of Agency of Protected Areas by Years



Source: www.apa.gov.ge Agency of Protected Areas

We can see Funding trends of Protected Areas on graph 3. International and national NGOs contribute much to the environmental protection and conservation of biodiversity of Georgia. The major donor organizations in the field of environmental protection of Georgia are: Agency for International Development (USAID), the World Bank, United Nations Development Program (UNDP) and United Nations Environment Program (UNEP), Swedish International Development Authority (SIDA), Canadian International Development Agency (CIDA), Organization for Security and Cooperation in Europe (OSCE), Eurasian Fund and others.

By 2011, Georgia was a party to approximately 50 international multilateral and bilateral agreements, thus bearing high responsibility for the environmental protection. In Georgia, work for the development of system of national parks has begun since 90s of the past century and the first object has been Borjomi-Kharagauli national park. Afterwards, it was followed by Kolkheti and other national parks. Besides, range of services and values given by the natural territories causes the difference among management strategies. International Union for Conservation of Nature (IUCN) has developed the integrated system of determination of categories of natural protected territories.

National parks serve for protection of state’s natural heritage, but they also offer opportunities for enjoyment and research of nature. National parks contribute to the development of tourism which, in turn, causes the progress in economically undeveloped regions. Modern national parks have special linkage to the country’s regions because of their functional characteristics and help protection of environment and social-economic development.

The Agency of Protected Areas of the Ministry of Environment and Natural Resources Protection has finished the project called “Strengthening the Management of

Protected Areas of Georgia”. The project was carried out with the support of the World Tourism Organization (UNWTO) together with the German Government and aimed at the introduction of nine new eco-tourist products at 5 different protected areas.

Within the framework of the Project “Strengthening the Management of Protected Areas of Georgia” several new eco-tourist products have been developed, such as: cycling routes at Tbilisi NP, Educational Trails at Lagodekhi PA, Zipline and Canyoning at Mtirala NP, Geological trails at Vashlovani PA and paddling at Kolkheti National Park. With the beginning of new 2014 tourist season the services will be available for all visitors of the mentioned Protected Areas.

An agreement between the Agency of Protected Areas of the Ministry of Environment and Natural Resources Protection of Georgia and the German Consulting Group (GFA) was signed. The German Development Bank (KfW) in cooperation with the Agency of Protected Areas of the Ministry of Environment and Natural Resources Protection will be contributing 8.2 million Euros towards the development of 4 Protected Areas in Georgia. This grant will be spent during the next 5 years. According to the agreement, the development of infrastructure in Algeti, Kazbegi and Kintrishi Protected Areas, as well as strengthening the Administrations of the above-mentioned PAs is considered. Furthermore, establishing of Pshav-Khevsureti Protected Areas is planned. The project aims at elaboration of high standard management plans, development of eco-tourist trails, construction of shelters and picnic areas, as well as construction and equipment of administrative buildings, demarcation of boundaries of PAs, establishing of bio-monitoring system and capacity building of the employees of the PA administrations.

Vashlovani Protected Areas were nominated to be granted with the European Diploma at the European Council on March 24, 2014. The European Diploma of Protected Areas is a prestigious international award granted since 1965 by the Committee of Ministers of the Council of Europe to natural and semi-natural areas and landscapes of exceptional European importance for the preservation of biological, geological and landscape diversity and managed in an exemplary way. The next stage is a visit of Experts from European Diploma granting committee to Vashlovani Protected Areas and further estimation of its value. Within a year the decision will be made whether the application to receive this prestigious Diploma for Vashlovani Protected Areas has been satisfied.

## **Conclusion**

International travelers are looking for new directions, and in spite of the numerous events, awareness of Georgia, as a tourist country, is still low. But consider this issue on the other side - bandwidth of tourist resources. Large crowds of tourists were collected on a limited area of operation of the park and create the danger of disturbance of natural ecosystems. If you look at the visitors’ statistics to protected areas, yet - so far there is no danger, but it is advisable to be thoroughly studied the National Parks throughout.

World Heritage Convention defines natural or cultural - historical types of objects that meet the specific criteria to be included in the World Heritage List. Several particular places of protected areas to be granted with the status of the World Heritage Sites in the future have been identified.

As the main action in the sphere of improvement of structure of ecotourism is:

- Creation of system of the information and tourist centers in the territory of areas as an example Polesye. The most important elements of investment process are promotion of the investment project, adequate representation to his potential investors.

- The ethno-ecological routes should include elements of the environment nature and changed by the person, settlements or separate dwelling of indigenous people, sacred place, cultural and historical monuments.

- Development of administrative decisions in the tourist organizations has a certain specifics.

- Requirements to professional competence of guides in the field of tourism assume: possession of technology of sales of a tourist product, skills of communication and knowledge of psychology of clients, knowledge of bases of regional geography and main directions of tourism, knowledge of legal bases of tourist activity, free possession of Internet technologies, use of positive models of behavior.

Income generated by ecotourism not only aims to conserve protected areas, but to satisfy socio-economic needs of local communities. Social effect from programs will provide education and recreation opportunities for people.

**References:**

Ecotourism Handbook I. - A Simple User's Guide to Certification for Sustainable Tourism and Ecotourism.

Fact\_Sheet\_-\_Global Ecotourism, 2010.

Practical Guide for the Development of Biodiversity-based Tourism products, 2010.

[www.ecotourism.org](http://www.ecotourism.org)

UNWTO - Tourism Highlights. 2014.

UNWTO World Tourism Barometer, volume 02, April 2014.

WTTC – The Economic Contribution of Travel & Tourism. 2011.

## THE ROLE OF GREEN ROOFS IN URBAN SUSTAINABILITY

***Mina Farokhi Someh, PhD Student Urban Planning***

Young Researchers and Elite Club, Ilkhichi Branch, Islamic Azad University, Ilkhichi, Iran

***Mostafa Basiri, PhD Student Urban Planning***

Department of Architecture, College Architecture, Ilkhichi Branch,  
Islamic Azad University, Ilkhichi, Iran

***Ali Zeynali Azim, PhD Student Urban Planning***

Young Researchers and Elite Club, Tabriz Branch, Islamic Azad University, Tabriz, Iran

---

### Abstract

Dynamic urban processes and constant evolutions in the types of living as well as technological advances have changed and manipulated living environments for human beings. The increasing growth in the population of urban regions and the escalation of socio-economic problems have forced human beings to live in matchbox apartments during the last a few decades. Modern human beings have to encounter different daily activities to make living; hence, having a shelter which can bring peace and relief has become a dream for him. Recent urban views and sights have been changed into apartments and tall towers in the residential areas which have made human habitats gloomy and bleak and have created several problems for modern citizens. It can be argued that, regardless of the internal peace of houses, urban citizens need beautiful and green natural views and sceneries far from the tensions of work environments so as to comfort their minds and imaginations. Projects for modernizing, optimizing and creating new urban spaces are realized in different areas for many years. The present study is intended to examine the concept and idea of *green garden* which has been proposed by developed countries. The concept of *green garden* was proposed as an attempt to fulfill tranquility, peace and a desirable habitat. The present study investigated and evaluated this proposition based on the following criteria: compatibility, desirability, efficiency, comfort, safety and health.

---

**Keywords:** City, house, urban views and sceneries, green roof

### Introduction

The urbanization process and the number of existing cities have had an increasing growth in recent years. That is, while there were 201 cities in Iran in 1956, the number of cities in Iran in 2011 grew to 1331 cities (Iranian statistic Center, 2011). This indicates that the number of cities has significantly increased and many villages have been merged with cities. According to the census report in 2011, 71.4% of the population lives reside in cities; however, the related figure for the year 1956 was 29% (Iranian statistic Center, 2011). In other words, during the last five decades, the urban population in Iran has become more than doubled. Many researchers speculate that the urban population of the world will reach 70% in 2050 (Pecarevic, Danoff-Burg, & Dunn, 2010). Such an increase in the number of urban population will call for certain arrangements so that the needs of urban citizens can be met. A critical issue which has been caused by the growth of cities and citizens is that urban living environments should reach sustainable development in cities. Fast developments in civil technologies and IT have evolved cities significantly. These evolutions have inevitably

changed the urban lifestyles. The plethora of apartments and the small spaces and areas of apartments do not allow citizens to make efficient use of outdoor spaces; hence, children and old people whose number is increasing are deprived of green urban spaces. Green roof can be considered as a solution for doing away with ugly brick and concrete views of city buildings.

Green roof is a roof with a herbaceous covering; this technique can be applied in line with the purpose of preserving the natural environment in urban areas (Kosareo & Ries, 2007, p. 2606). The results of applying this method in cities indicate that green roofs as a novel and modern method can help reduce the undesirable heat in cities, improve the quality of natural environments and the weather in cities.

- Statement of the Research Problem

It has been argued that the population level of the developed countries will rise to 83 percent until the year 2030 (Mentens et al., 2006). According to the published statistics by the World Bank (UN, 2012), in the year 2012, 53% of the whole population resided in cities and this amount increases constantly at every moment. Urban citizens are merging a lot of rural lands and villages into cities so that they can construct houses and settle in cities; in doing so, they damage and destroy many gardens and farmlands. Thus, numerous proper gardens and farmlands are destroyed to construct houses, streets and transportation channels. Non-sustainable and inefficient use of the urban systems has caused several problems. One significant problem which is attributed to increased urban population is the excessive and unreasonable growth of the constructions and buildings in urban environments which destroy beautiful urban sceneries and views. Consequently, citizens have to begin their mornings and days by looking at tall buildings and small matchbox houses and sky scrapers for commercial centers. In general, these areas inspire colors, symbols and feelings which are meaningless. One can no longer observe beautiful natural views and prospects in modern cities. In the majority of urban areas, only construction standards are met to create dismal parks which are devoid of enough and desirable grass coverings and trees; these environmental problems can cause psychological and spiritual problems for urban citizens.

The excessive utilization of the surface of the earth for different purposes leads to their destruction. Many researchers argue that having green surfaces in cities is essential for avoiding disturbing and perilous heat. Green covering of the surfaces around building can help reduce the limitations of the urban spaces (Kumar, 2005, p. 1505). Therefore, green roofs can be regarded as an achievable plan and scenario for metropolitan areas. Flat roofs lack aesthetic architectural considerations; hence, they have no role in the aesthetic and architectural value of a building. Flat building surfaces give a tough and rough impression and appearance to the outlook of urban building and cities and also they need a system for disposing rainwater (Razavian, 2010, p. 1). The creation of artificial green surfaces on the roofs of urban buildings can make up for the shortage of green spaces in cities and can be regarded as an appropriate alternative. Green surfaces can also enhance the sustainability of the cities. The sustainability process can be regarded as a multi-dimensional phenomenon; that is to say, it can prevent the destructive biological, ecological and social effects and abnormalities as well as improving public welfare, economic status and maintaining social justice in urban areas. Since the proposed plan (green roof) is intended to preserve and improve the natural environment, it not only meets the needs of the present generation but also creates the background and facilities for meeting the needs of the future generations (Habib, 2007, p. 111).

### **Theoretical Concepts and Principles**

- Green Roof

Green roof is, indeed, a kind of roof which grows on the surface of plants (Razavian et al., 2010, p. 139). Green roofs can be created in two ways: extended and condensed. On

average, the extended green roof grows from 50 to 150 millimeters which is intended to protect plant life. The size of the plant should be limited so that it can grow on the roof and it should significantly increase weight of the roof. In general, much traffic and walking on the green roof is not allowed since its shallow and fragile root system can be damaged. This kind of roof is often installed on buildings which have an integrated and unified operating system. The condensed green roof, on average, grows from 150 to 1200 mms which can support larger vegetal surfaces. Larger bushes and even trees can grow on this variety of green plant. This green roof is of higher significance for aesthetic aspect of the buildings and is resistant against much walking. However, condensed roof imposes much weight on the roof which requires the application of further structures in the construction. Also, it requires deep layers and regular maintenance and repair (Kosareo & Ries, 2007; Mlineux et al., 2009).

Green roof or roof garden, indeed, refers to a designed green space which is established on unused and idle spaces of buildings, i.e. roof and terraces. These roofs are established based on modern technologies. Aesthetic, social and cultural values rationalize the installation of these roofs and they are intended to revive the lost green spaces in the modern urban areas, sustain the environment and improve the physical, psychological and mental health of the citizens. In other words, they are aimed to enhance the standards and qualities of modern urban life. In fact, bringing plants to buildings is tantamount to the creation of green, beautiful and semi-public spaces for the residents of those buildings. Thus, the quality of life (in terms of satisfaction with the environment) will be enhanced ([www.chekadeno.com](http://www.chekadeno.com)).

#### - The Background of Green Roof

The construction of green has an ancient background and dates back to the seventh and eighth centuries BC. The Asian civilizations which developed at the bank of Tigris and Euphrates were the first peoples who created this art. The most famous green roofs were the hanging gardens of the ancient Babylon. Afterwards, the green roofs were scattered in different areas of the world such as Scandinavia, Turkey, Iraq and Iran. The combination of mud and soil were used as traditional materials for building roof in the above-mentioned regions. These materials included grass seeds and self-growing plants which began to grow and create a green and favorable bed ([www.30vil.net](http://www.30vil.net)). Modern green roof which are made of a system of prefabricated layers are considered as a novel phenomenon. These roofs were originally created in Germany in the 1960s and then were used in other European countries. According to the recent estimates, about 10% of the roofs in Germany are green. The United States of America also has considerable green roofs but the number of green roofs in the USA is less than those of European countries ([www. pejvaksokhan.com](http://www.pejvaksokhan.com)). In Iran, the available spaces in roofs are often regarded as unused spaces which are not regularly used for specific functions. These spaces are always exposed to sunlight. In case plants are grown in these spaces, one can have access to them at any moment. Thus, green roofs not only lead to the development of architecturally aesthetic environments but also they help realize the standards of green spaces. Every square meter of green space which is added to residential environments can reduce a significant amount of weather pollution from the urban areas. In addition to primary needs such as shelter and housing, human beings need to have other things such as clean air, sunlight and mental and physical health. However, with respect to the present circumstances in modern cities, achieving the above-mentioned requirements seems almost impossible. Nevertheless, growing plants on the roofs does not occupy significant amounts of useful grounds; rather, they can create a relaxing space for the residents of houses. There is a lack of enough green spaces since the area of green spaces is low and these green areas are not fairly distributed in downtowns; hence, they cannot respond to the spiritual and physical needs of the citizens and the link and association between the



nature and human beings is gradually neglected. This problem has attracted the attention of many great theoreticians and researchers.

- Plans for Utilizing Urban Lands and Develop Green Urban Roofs

Making plans for using the urban lands and roofs are regarded as a series of purposeful projects which organize and improve the artificial and human-made spaces; they are intended to accommodate the needs of urban communities with regard to using lands and earth surfaces (Pourmahamadi, 2008). Related urban planning is concerned with how to create green environments and how to distribute, protect and organize them. It also evaluates urban operations and activities. In fact, green urban spaces are regarded as applications and uses of the urban land on which humans conduct some operations to develop vegetal areas. These green environments are designed to have social efficiency but not residential and civil efficiency. According to the viewpoint of urbanization, green environments constitute a significant part of the appearance of cities which are made of a variety of plants and vegetations. They are considered as an alive and critical environmental parameter which are located and integrated with the lifeless body of a city and determine the form and structure of the city (Nadermezhad et al., 2009). At the outset of the new millennium, the loss of the association between human beings and nature is regarded as one significant factor which has deteriorated the living conditions in urban regions and has led to a crisis in these regions; the isolation between nature and humans has made the appearance of cities ugly and disorganized; hence, citizens have become soulless, bored and resented. This gradual loss of humans' interest and passion for natural environments has been ignored. Researchers contend that one of the major methods of managing urban crises is to strengthen the relationship of urban residents with nature and enhance their interest in natural environments (Zangiabadi, 2009). Cities which have desirable and beautiful sights and locations are able to extend aesthetic intelligence and experiences of the citizens and can improve their visual imaginations and impressions about the society. Such cities can increase the citizens' civil pride. The created green and natural environments can promote the reputation of the cities at the national and international scopes and enhance their competitive capacity for attracting investment and talented human forces (Golkar, 2008).

Inasmuch as the population and pollution in urban regions is remarkably increasing, the important contribution of green environments in dealing with these problems should be clearly highlighted. Green spaces play the role of a natural cleaning filter which eliminates some of the urban pollutions such as smoke and noise. It relatively guarantees individual and social health of the citizens and provides tranquility and peace for urban environments. The per capita area dedicated to green spaces in European cities is as follows: Paris 5.25 square meters, London 9, Berlin 13 and Vienna 25 square meters for each person. The standards for determining the per capita of green environments in developing countries are less than those of Europe and USA. The proposed standard for developing countries is 16 square meters. Nevertheless, the per capita green environment in Kolkata, for instance, is 1.2 square meters and 1.4 square meters in Bagdad. In the country of Iran, the proposed standard, on average, is 2 square meters in local parks, 1.5 square meters in regional parks and 4 meters for city parks (Pormohamadi, 2008). It should be noted that the global standard for green spaces is about 20 to 25 square meters for each citizen. Some informal statistics indicate that 8-9 square meters have been proposed as the per capita green space in Iran (Ibrahimzadeh, 2008).

Since some importance is currently given to protecting green environments and the problems of urban areas are increasingly escalating, hence, developing cleaner and healthier cities is considered as a priority. The problems arising from the increasing growth of urban population has eliminated the balance in terms of the existing green lands in urban areas and hence has damaged the ecological system. Therefore, the environments within cities have low ecological values; the pollutions of air, soil and water have isolated humans from natural

environments. Plants and natural animal habitats in the vicinity of cities have been destroyed. Even in recent years, climatic changes have been observed in some urban regions. The urban growth has had a significant negative impact on green environments; however, if green environments are properly distributed in urban areas, they can fulfill remarkable ecological effects. Sustainability is considered to be a critical goal and concern in urban issues and protecting natural environments and preserving ecology is deemed to be one of the important ways for achieving sustainability. Currently, the concept of *sustainability* is extensively used to explain a world in which human and natural systems are associated with each other and have mutual relationships with each other. This interaction between humans and nature is essential (Singary, 2008). The adequate existence of green roofs and green structural components within urban areas is regarded as critical which can be justified in various aspects and dimensions. For example, green environments can produce oxygen and reduce urban pollutions and change the lifeless body of cities into organic and alive bodies. The green roofs play the role of respiratory lungs for the polluted cities. In case urban regulations and principles are taken into consideration and moisture-proof insulations are used on the roofs of houses, the plants and green surfaces on the roofs will be able to make cities more and more sustainable. In Tehran which is regarded as an extremely polluted city, the pollutions of air, water and soil inflict 270 billion-Toman loss and damage every day.

- Criteria for Evaluating Green Roofs

Reliable and consistent criteria should be used to evaluate green urban roofs. The following criteria and standards can be used in evaluating and judging the values of green urban roofs:

1. Consistency: this criterion guides the positioning and establishment of green surfaces on the roofs of city houses so that green spaces are compatible and consistent with the surrounding areas. According to this criterion, they should not cause any disorder and interference in the function of the buildings and residential units which have green roofs should be distributed properly in the polluted areas; that is, all green roofs should not be placed near each other.
2. Comfort: the citizens' comfort and relief is defined according to their accessibility; the time and distance required for having access to the urban services and facilities. The construction of green surfaces on the roofs of houses creates the opportunity for its residents to have access to it at any time they wish.
3. Efficiency: in case the areas on roof are used for creating vegetal and green surfaces, there will be no concern for the efficiency and use of urban lands and areas. That is, if green roofs meet the need for green environments, other urban areas can be efficiently used for other useful functions. In the past a few years, one of the challenges in major cities of Iran has been that farmlands and gardens have to be changed into commercial and residential locations. It is argued that green roofs can result in more efficiency in using lands and prevent the change of functions in farmlands and gardens.
4. Desirability: the creation of green environments which are readily accessible for its residents can achieve the desirability and favorability criterion and satisfy the residents.
5. Health: in addition to the aesthetic function which these roofs are intended to achieve, they should improve the citizens' health, and enhance their relief and mental relaxation and health.
6. Safety: According to this criterion, green roofs should contribute to the safety of the residents of houses and urban areas. That is, in addition to improving and optimizing urban views and prospects, these roofs should protect the citizens against UV rays and preserve water resources and weather conditions. In brief, green roofs should contribute to the safety of the citizens.

## Conclusion

It is obvious that the population of cities rises every year and this will result in more application and use of urban lands for residential functions. As discussed above, the disappointing fact is that the per capita area which is dedicated to green spaces is far less than the actual needs of human beings for green environments. This is partly due to the prevalence of apartment life in urban areas. Urban residents are used to living in small apartments. In Iran, the per capita area dedicated to green urban environments is supposedly 8-9 square meters. Nevertheless, due to the inflation in housing price, residential buildings become increasingly smaller and cramped. Thus, the cities become more dismal and chaotic places for living. That is, in terms of architectural considerations and city appearance, different and contrasting colors and materials are combined and used which reduce the aesthetic values of cities. Furthermore, green spaces are not evenly distributed in urban areas which threatens the physical, mental and psychological health of the residents. With respect to the primary needs of human beings, people not only need to have a shelter but also they need comfort, peace and ease in their shelters. The policy and strategy proposed in the present study is to utilize building roofs which are known as *green roof* or *roof garden* in architecture. They include layers and surfaces of plants and vegetal coverings which grow as a function of climatic conditions. In this paper, the researchers suggested six criteria for evaluating and gauging green roofs, i.e. consistency, comfort, efficiency, desirability, safety and health. These criteria are of high significance in urban planning and operations which are extensively used to measure the value and quality of the projects. If green roofs assume consistency and provide comfort and health, they will be able to produce favorable and pleasant breathing space for the residents of houses in urban areas.

## References:

- Athari, K. Urban Economy and the Economy of City in Iran. *The Journal of the Economy of City*, 7, 56-65, **2008**.
- Golkar, K. The Visual Environment of Cities; Evolution Procedures from Decorative method to Sustainable Method. *Environmental Sciences*. 5th year, No 4. 95-114, **2008**.
- Habib, F. The Approach for Achieving Sustainability in Urbanization and Environmental Sciences and Technologies, 111-120, **2007**.
- Ibrahimzadeh, A., Ebadijou Kandan, A. Analyzing the Spatial Functions of Green Environments in the Third Zone of Zahedan, *The Journal of Geography and Development*, 11, 39-58, **2008**.
- IRAN'S Statistics Center, *The Results of Public Census of People and Housing*, 2011.
- Kosareo, L. Ries, R. Comparative environmental life cycle assessment of green roofs, *Building and Environment* 42, 2606-2613, **2007**.
- Kumar R, Kaushik S.C. Performance evaluation of green roof and shading for thermal protection of buildings. *Building and Environment* 40, 1505-1511, **2005**.
- Mentens J, Raes D, Hermy M. Green roofs as a tool for solving the rainwater runoff problem in the urbanized 21 st century?. *Landscape and Urban Planning* 77, 217-226, **2006**.
- Molineux, Ch.J. Fentiman, Ch.H. Gange, A.C. Characterising alternative recycled waste materials for use as green roof growing media in the U.K, *Ecological Engineering* 35, 1507-1513, **2009**.
- Nadernezhad, M & Zayerzadeh, A. & Mazari, M. & Amini Tusi, W. Proposing the Legitimate Limitations for the Green Environment in Urban Sidewalks. *The Ninth Conference of Engineering the Transportation and Traffic of Iran*, 2009.
- Pecarevic, M., Danoff-Burg, J., & Dunn, R. R. Biodiversity on Broadway—Enigmatic diversity of the societies of ants (Formicidae) on the streets of New York City. *PLoS ONE*, 5(10), e13222, **2010**.

Pourmohammadi, M. Planning the Functions of Urban Lands, SAMT Publications, Tehran. **2008**.

Razavian, M. & Gaforipour, A. Green Roofs. Geographical Journal of Preparing Environment, Quarterly, 137-160, **2010**.

Singary. M. Strategies for Designing the Buildings of Tabriz based on Sustainable Architecture. The First National Conference on Non-renewable Energies, Azada University, Takestan Branch, 2008.

United Nations Human Settlements Programme, **2012**.

[www.chekadeno.com](http://www.chekadeno.com).

[www.30vil.net](http://www.30vil.net).

[www. pejvaksokhan.com](http://www.pejvaksokhan.com).

Zanghiabadi, A. Rakhshani Nasab, H. Analyzing the Statistical and Spatial Indicators of the Development of Green Environments, the Case Study: The Urban Areas of Isfahan. The Journal of Ecology, 35<sup>th</sup> year, issue 49, 105-116, **2008**.

## MERAB MAMARDASHVILI VS THE SOVIET MENTALITY

*Lali Zakaradze, Prof.*

Grigol Robakidze University, Tbilisi, Georgia

---

### Abstract

In the present paper the author analyzes the thought of Georgian philosopher Merab Mamardashvili (1930-1990) in the context of philosophy of culture. According to Mamardashvili, philosophy and thinking is identical to life. He tried to break through the closed borders of the Soviet system and bring the experience of other cultures into the Soviet philosophy. Mamardashvili's thought represents an attempt of original synthesis of different (French, German and Russian) cultural traditions. He criticized harshly everyday life of a Soviet citizen. With his criticism he significantly promoted the development of critical consciousness in the Soviet Union.

---

**Keywords:** Georgian philosophy, freedom and culture, Soviet citizen, intercultural dialogue

### Introduction

Dominant totalitarian regime in the Soviet Union prevented openness of thinking. This situation favored the existence of skeptical assessment of the Soviet (including Georgian) science and scholarship among the wide circles of Western society. This tendency was clearly visible during Mamardashvili's visit in Paris in November, 1989 when the French journalist Annie Epelboin evaluated the so called "Soviet Philosophy" in the very first question in such a way: "For the last decades in the USSR, the science acknowledged as "philosophy" has created nothing valuable".<sup>1</sup>

In order to get the Georgian philosophy effectively integrated into the European scholarly space (and make adequate reception of its historical heritage), it is necessary to discuss properly the contradictions of the past. It is also of great significance to see how the recent past of our philosophy is evaluated from the perspectives of the Western philosophy.

From this viewpoint very interesting assessment is offered by the German philosopher Udo Reinhold Jeck in his work "Contemplations on Georgian Philosophy".<sup>2</sup> In his opinion, Eurocentrism has always been characteristic to the developed Western European cultures. However, today Eurocentrism is obsolete. According to the new perspective, western philosophy represents not the unique but just one important moment in international philosophical thought.<sup>3</sup>

In this context, Jeck pays attention to the following issues:

1. Successive attack of Anglo-Saxon thought which causes lingual leveling of philosophical discourse.
2. Contrary to this, alternative lingual discourses establish themselves with difficulty.

---

<sup>1</sup> M. Mamardashvili, *Suppressed Thought, Talks with Annie Epelboin*, translated by M. Bakradze, Tbilisi, 1992, p. 5 (in Georgian).

<sup>2</sup> See U. R. Jeck, *Contemplations on Georgian Philosophy*, translated by L. Zakaradze, Tbilisi, 2010 (German/Georgian).

<sup>3</sup> *Ibid.*, p. 46

3. Sometimes, Western philosophy readily created artificial barriers. Non-sufficient readiness of its leading representatives for the intercultural dialogue as well as certain arrogance proved to be harmful for conducting effective dialogue between cultures.

An illustrative example to this is the 20<sup>th</sup> century Georgian philosophy which remained almost unknown for the Western thought until the 1990s. The iron curtain that hindered the exchange of ideas between Georgia and Europe in the 20<sup>th</sup> century no longer exists but the linguistic, geographical and political barriers are still tangible.

According to Jeck, transformation of the closed space became the lot of the Georgian philosophers. They observed and traced the development of Western philosophy as well as intensively studied the works of the European thinkers. As a result, in the late 1990s new connections were established with the philosophical institutions in Europe.<sup>4</sup>

Merab Mamardashvili as a philosopher represented a rare exception during the Soviet period. The style of his philosophy revealed inner connections with the European philosophy. It was not accidental that he was called “Georgian Socrates”<sup>5</sup>. According to Mamardashvili, philosophy and thinking is identical to life. He tried to break through the closed borders of the Soviet system and bring the experience of other cultures into the Soviet philosophy.

The tragic nature of the Soviet person revealed itself in the resistance to the dialogue between cultures. In contrast with this, Mamardashvili tried to establish free thinking in the Soviet Union. He paid special attention to the problems that prevented free thinking and the process of dialogue between different cultures. Thus, it is essential to deal with Mamardashvili’s thought in the context of contemporary philosophy of culture and explore the philosophical theses that are significant in this aspect.

### **Relations between philosophy and nationalism**

Mamardashvili touched this problem in one of his interviews.<sup>6</sup> In his opinion, the existence of national philosophy is impossible. It is necessary to use the word “national” reasonably and define its meaning. Philosopher is a human being who represents certain nation but he/she is not determined by his/her nationality. Mamardashvili pointed to the destructive influence of “narrow nationalism”. “The truth is above the motherland!” – This is the phrase because of which he was fiercely attacked by Georgian nationalists. He wrote: “I am fighting not for the Georgian language but for whatever can be said in Georgian. I do not need faith, I need freedom of consciousness!” In his viewpoint, the idea of enlightenment was replaced by patriotism that proved to be fateful for the process of state-building in Georgia.

In the 1980s, while analyzing national movement in Georgia and the Baltic countries, Mamardashvili talked about modernity and civic society issues. According to him, classical European way towards modernity began from the formation of nation-states. After settling national problems, these societies transformed themselves into multinational societies.<sup>7</sup> However, in the Soviet Union the project of modernity was not accomplished. Moreover, the bloody history of the Soviet socialism in its content and form was the main enemy of civic society.<sup>8</sup>

<sup>4</sup> Ibid., p. 71.

<sup>5</sup> See J. P. Vernant, “Georgian Socrates”, translated by M. Kharbedia, *Arili*, 14 (2000), pp. 6-8 (in Georgian).

<sup>6</sup> See M. Mamardashvili, “Solitude is my profession...”, *Spring*, 1990 (in Russian): <http://www.philosophy.ru/library/mmk/odinoch.html> (Accessed 10.03.2014)

<sup>7</sup> See M. Mamardashvili, “Interview for Newspaper *le Monde*”, (1990, # 24), translated by D. Labuchidze, in: M. Mamardashvili, *Topology of Consciousness. Lectures. Papers. Interviews. Articles*, Tbilisi, 2011, p. 253 (in Georgian).

<sup>8</sup> See M. Mamardashvili, “Reality and Perspectives in Eastern Europe and Soviet Union”, translated by D. Labuchidze, in: M. Mamardashvili, *Topology of Consciousness*, pp. 213-215 (in Georgian).

### **Mentality of a Soviet citizen**

Mamardashvili dated the origin of the Soviet mentality to 1917: in this period the Soviet Union “jumped out from the history”.<sup>9</sup> A Soviet citizen was characterized by “wretched thinking” and “risk of non-existence”: “we have been nodding for so long that today we should learn anew how to distinguish life from death, reality from dream [...] Diminished in the Soviet way and without any energy we lost the ability to understand the politics [...]; unreality of things and zombie-like nature of humans has become the rule of life”.<sup>10</sup> According to Mamardashvili, the results of the totalitarian regime and deplorable impact results of Marxism-Leninism on human thinking are following: (a) Totalitarian system managed to stop all the types of mental activity. Others (party bureaucrats) were thinking instead of Soviet citizens and the “seeming reality” was created with seeming problems, false personalities, ghosts in terms of Plato and dead images lacking real existence.<sup>11</sup> (b) The Soviet system was indispensable from the corresponding ideology; the goal of “extremely simplified concept” of Marxism-Leninism was “pressing the whole world into one small head”, “in that semi-atrophied brain which has never thought before”.<sup>12</sup> What can be more uncomfortable for a person who strives to think? “I was burnt alive within my copper armor. I was burning within what I felt and thought for everything had already been thought on my behalf”.<sup>13</sup> For Mamardashvili, self-determination was resistance towards the so called “black tunnel” in which Soviet people had to live without life. This hindered development of free thinking and intercultural dialogue.

### **Intercultural Dialogue**

The accomplishment of this dialogue requires the study and synthesis of manifold strategies of different cultures. Mamardashvili’s philosophical practice is a good illustrative example for this: his thought represents an attempt of original synthesis of different (French, German and Russian) cultural traditions. Especially important and fruitful for Mamardashvili was the dialogue with the French culture: by studying French philosophers he discovered “French style” of living and thinking which gave him impetus for his philosophical practice.

According to Mamardashvili, the essential problem of culture consists in an attempt to transform humans. Human beings need proper value-orientation in order to abandon blind faith in authorities and to become responsible citizens. In this respect Mamardashvili’s reasoning is in accordance with the founding principles of the European Enlightenment which assert individual activity and primacy of reason.<sup>14</sup>

### **Integrating Power of Thinking and Freedom**

Mamardashvili’s ultimate goal was to explore the “roots of thinking”. Philosophizing constitutes the core of thinking. It is the commonness of philosophical reasoning that deserves special attention. The most reliable foundation is the “ability to think independently” which constitutes the inner freedom of a human being. Philosophy should turn petrified and motionless mental images into the dynamic process of thinking. For Mamardashvili, the embodiment of such philosophy is the image of Prometheus who more than once deserved the attention of philosophers (for instance, of Marx): “Prometheus,

<sup>9</sup> See M. Mamardashvili, *Supressed Thought*, p. 6.

<sup>10</sup> See M. Mamardashvili, “Living in Line with Time”, translated by D. Labuchidze, *Arili*, 14 (2000), p. 2 (in Georgian).

<sup>11</sup> J. P. Vernant, *Georgian Socrates*, p. 7.

<sup>12</sup> Ibid.

<sup>13</sup> M. Mamardashvili, *Supressed Thought*, p. 24.

<sup>14</sup> M. Mamardashvili, “Thought within Cultural Space”, in: M. Mamardashvili, *Topology of Consciousness*, pp. 306-307.

chained to the Caucasus is the symbol of philosophy, the first philosopher; he is the ardent state of consciousness [...] radiance that burns your hands; it is a burning existence!”<sup>15</sup>

### “Image of the Enemy” in the Soviet Mentality

Mamardashvili considered the notion of “image of the Enemy” as a typical Soviet phenomenon. The phrases like “Enemy of the People” and “Traitor of the Nation” are the reflection of the Soviet mentality.<sup>16</sup> He analyzed the phenomenon of “Image of the Enemy” in the Soviet mentality and stressed its destructive and negative impact. *Enemy is an incarnation of something that is rooted within individual as a weakness.* In this context the debates on “National Identity” needs to be analyzed anew together with the thesis according to which the “Image of the Enemy” has been one of the most important constructing elements in the formation of national identity”.<sup>17</sup> Fear against the *Other* and tendencies to get completely isolated from it prevents intercultural dialogue and is conducive to political and cultural conflicts. “Culture [...] can be defined as a form, skill and ability with the help of which humans can coexist and act in such situations that contain unidentified elements. Culture is a reasonable and rational reaction against the unknown”.<sup>18</sup> It is remarkable that in the “Unknown” there is always something that is permanently under the quest. Culture, in this case, is at the same time “the form of being-free against the unknown; it is air through which to breathe”<sup>19</sup>. Therefore, the true essence of culture is freedom.

### Conclusion

Mamardashvili harshly criticized everyday life of a Soviet citizen. With his criticism he significantly promoted the development of critical consciousness in the Soviet Union. At the same time, this line of thinking gave strong impetus to the very productive research which focuses on “Soviet Person” and his ideological foundations.<sup>20</sup> Mamardashvili’s conceptual vision is focused towards intercultural dialogue and openness; therefore, it is of great importance to develop further this line of thought in order to promote mutual understanding and cooperation between different cultures.

### References:

- Babuadze T., “Applying the *Image of Enemy* for Creation of National Identity”, *Tskheli Shokoladi*, March, 58 (2010), pp. 74-79; 110-111 (in Georgian).
- Iremadze T. (ed.), *European Responsibility. Dedicated to the 80th Anniversary of Merab Mamardashvili*, Tbilisi, 2011 (in Georgian).
- Jeck U. R., *Contemplations on Georgian Philosophy*, translated by L. Zakaradze, Tbilisi, 2010 (German/Georgian).
- Kruglikov V. (ed), *Kongenial’nost’ mysli: O filosofo Merabe Mamardashvili (Congeniality of Thought: On the Philosopher Merab Mamardashvili)*, Moscow, 1999 (in Russian).
- Mamardashvili M., *Suppressed Thought, Talks with Annie Epelboin*, translated by M. Bakradze, Tbilisi, 1992 (in Georgian).

<sup>15</sup> See M. Mamardashvili, “Living in Line with Time”, p. 4.

<sup>16</sup> See. M. Mamardashvili, *Talks on Philosophy. Lectures*, Tbilisi, 1992, pp. 196-197 (in Georgian).

<sup>17</sup> See T. Babuadze, “Applying the *Image of Enemy* for Creation of National Identity”, *Tskheli Shokoladi*, March, No. 58 (2010), pp. 74-79; 110-111 (in Georgian).

<sup>18</sup> See M. Mamardashvili, *Talks on Philosophy*, p. 198.

<sup>19</sup> See M. Mamardashvili, *Reality and Perspectives in Eastern Europe and Soviet Union*, p. 222

<sup>20</sup> See T. Iremadze, (ed.), *European Responsibility. Dedicated to the 80th Anniversary of Merab Mamardashvili*, Tbilisi, 2011 (in Georgian); V. Kruglikov, (ed), *Kongenial’nost’ mysli: O filosofo Merabe Mamardashvili (Congeniality of Thought: On the Philosopher Merab Mamardashvili)*, Moscow, 1999 (in Russian); A. Piatigorsky, *Izbrannie trudi [Selected Works]*, Moscow, 1996 (in Russian).



- Mamardashvili M. “Solitude is my profession...”, *Spring*, 1990 (in Russian): <http://www.philosophy.ru/library/mmk/odinoch.html> (Accessed 10.03.2014)
- Mamardashvili M., “Interview for Newspaper *le Monde*”, 24 (1990), translated by D. Labuchidze D., in: M. Mamardashvili, *Topology of Consciousness. Lectures. Papers. Interviews. Articles*, Tbilisi, 2011, pp. 247-267 (in Georgian).
- Mamardashvili M., “Living in Line with Time”, translated by D. Labuchidze, *Arili*, 14 (2000), pp. 2-4 (in Georgian).
- Mamardashvili M., “Thought within Cultural Space”, in: M. Mamardashvili, *Topology of Consciousness*, pp. 299-314 (in Georgian).
- Mamardashvili M., *Talks on Philosophy. Lectures*, Tbilisi, 1992 (in Georgian).
- Mamardashvili M., “Reality and Perspectives in Eastern Europe and Soviet Union”, translated by D. Labuchidze, in: M. Mamardashvili, *Topology of Consciousness. Lectures. Papers. Interviews. Articles*, Tbilisi, 2011, pp. 213-242 (in Georgian).
- Piatigorsky A., *Izbrannie trudi* [Selected Works], Moscow, 1996 (in Russian).
- Vernant J. P., “Georgian Socrates”, translated by M. Kharbedia, *Arili*, 14 (2000), pp. 6-8 (in Georgian).

# **A NEW VIEW ON SOCIAL ADAPTATION OF THE MILITARY, DISCHARGED FROM MILITARY SERVICE IN BULGARIA**

***Venelin Terziev, Prof., PhD***

University of Agribusiness and Regional Development - Plovdiv, Bulgaria

***Sevdalina Dimitrova, Prof., DSc***

Vasil Levski National Military University - Veliko Tarnovo, Bulgaria

---

## **Abstract**

This article reviews the social adaptation of the military as a social process. There is an overview of adaptation concepts adopted in science and practice. There is an attempt to classify the types of adaptation based on the nature of the interaction, the type of adaptive environments, adaptive environment structural components and based on the psychological content. Social adaptation process is presented in the following major stages: preparatory stage, stage of psychological tension before discharge; stage of acute mental reactions to entry into "civilian life"; stage of acute mental reactions to exit out of „military life” and stage of re-adaptation.

---

**Keywords:** Social Work, Social Management, Social Adaptation of Military

## **Introduction**

Social work is a relatively young, gaining distinction nowadays as a rapidly growing branch of knowledge and practical work, whose development has not been completed yet. Having emerged as a social phenomenon and a special area of human activity, it has been on a more frequent basis attracting the attention of those engaged in the field of research and becoming subject of special scientific studies. This means that the studies of leading specialists dedicated to social work are based on methodological approaches, aggregations of methods and technologies, generalized practical work experience applicable to most Social Sciences and Humanities. (Dimitrova, 2011)

The concept of Social work is inherently polysemantic. Presently, there are several approaches to its understanding amongst which more significant are the following:

- the area of scientific knowledge about laws governing the utilization of internal and external resources of an individual, a family or a community being in difficult situations of inadequate social functioning;
- specific type professional activity, manifestation of which is evident in rendering governmental and non-governmental assistance to people in order to provide cultural, social and well circumstanced level of life, providing personal assistance to an individual, a family or group of persons;
- rendering assistance within in the context off an of immediate interaction with individuals and families to resolve problems in their mental life, interpersonal relations, social and economic problems;
- helping an individual placed in a difficult life situation, encouraging him to become socially self-sufficient, socially developed and socially active member of society;
- type of activity of individuals and organizations providing assistance to various segments of population.

These definitions indicate that the social work is a particular type of activity of people aiming at providing help or assistance to various strata of society being in difficult life situation, also at creating conditions instrumental for the restoration or betterment of people's ability to social functioning.

The term „social work” in scientific and academic literature is most frequently defined as professional activity aimed at helping individuals, groups, communities to enhance or restore their capacity for social functioning and creating social conditions facilitating the implementation of this goal. Social work is also seen as a kind of social activity featuring specific levels of accomplishment conditioning its functions, forms and methods.

In the widespread R.Baker's Social Work dictionary in the list are included: individual social work, team social work, community organization, administrative social work, research, social policy, planning, immediate clinical practice, family and marital practices and other micro practices and also this, what is called the common practice of social work.

The amalgam of technology, research and practical procedures, mode of operation by means of which social work is carried out represents the methods of social work.

Methodology of social work is based on a system of well- substantiated knowledge gained through research and evaluation of practical activities. The theory of social work accounts for the complexity of interactions between individuals and their encirclement and recognizes people's ability both to be influenced and to alter the effect of multiple factors acting on them.

Theoretical and methodological analysis of social work is based on the historical approach and identification of sources for the emergence of a phenomenon in the past.

Historians track down roots of compassionate attitude towards a fellowman still in the customs and habits of the Early Slavs. S. M. Solovyov notes that unlike the warlike Germans and Lithuanians, ridding of "needless, weak and infirm" countrymen and killing captives, our distant ancestors used to exhibit mercifulness to old and little tribesmen, also to captives, who, after a certain period of time could return to their homeland or „to remain living with the Slavs as free people or friends”. Providing shelter and affection for strangers, they are conspicuous for their rare hospitality.

Against the background of that what was stated above, scientific understanding of social work in Bulgaria begins with the manifestation of social role of the phenomenon of charity in public life, as well as with the attempts various philosophical, psychological, psychotherapeutic, sociological and medical approaches to be applied for the purposes of scientific justification of social protection of people, helping the needy.

Nowadays, theoretical justification of social work is developing in three main directions. First, the place of social work as a branch of knowledge amongst disciplines such as Social Philosophy, Social History, Political Science, Sociology, Social Psychology, Cultural Studies is determined. Second, an own theoretical constant of social work as a specific object of study is sought; and third, its interaction with other human and society science is shown. Taking into account that the social work is based on human factor understood as an individual, team and team members' relationships based on the awareness, the social nature of prime priority of its activity conditions the necessity of knowing the general and specific factors. As to general factors, attention should be given to general culture, special functional culture, factors of motivation, while the specific factors are associated with the manner of management decisions making, managerial intercourse and management responsibility.

Sticking to the logics of the study, our research is focused on a specific area of social work, such is the social adaptation of servicemen at the end of their career and making them ready for positions in the public and private sector of economics [Human resource

management concept of the MD, BA and structures directly subordinate to the Minister of Defence, S., 2006; Armed Forces Human Resources Management Doctrine (NP -1), an Ordinance of the Minister of Defence of the Republic of Bulgaria No.OX- 179 dated 06.03.2013] as a criterion for motivation and increasing the activity of the human factor in the field of security and Defence. Moreover, in contrast to previous studies, refracted through the prism of military department social policy, this study is aimed at offering the social and scientific knowledge a new perception of social adaptation of servicemen leaving the ranks of the Armed Forces and Bulgarian Army in accordance with the scientific understanding of the social work.

### **Features of Social Work with Servicemen at the End of their Career**

A baseline of our research served the specificity of social work with servicemen discharged from military service. The need for transparency and equal treatment of users of social services, paying respect to dignity of military brings out the role of social work with them (Terziev and Dimitrova 2013a; Terziev and Dimitrova 2014a; Terziev and Dimitrova 2013b; Terziev and Dimitrova 2014b).

Hundreds of professionals moved from the army in the civil sector are able to make a substantial contribution to the reconstruction of Bulgarian society and to add value. Things are different in real life, where their experience and skills often give the impression that they are unnecessary. People who devoted their youth to the colors, as a rule are difficult to adapt to conditions of civilian life. Such a situation is not only immoral but also socially dangerous. People with special military-applied skills and knowledge actually form a new "risk group", especially when they fall come to the attention of criminal world. Very indicative on this issue are the various reports and analyzes of the Ministry of Labor and Social Policy and the Ministry of Defence.

The data are indicative that a third of them have „finding a job” offers in the security services to various private organizations, banks and/ or specialized licensed private security units.

The established practice shows that some of career service officers are experiencing serious difficulties finding a civil profession. Although highly qualified, many of them cannot find a job months in a row, lose the continuity of their working carrier or get deskilled. Working out the causes is based on an analysis of sociological and psychological studies materials enabling us to define the specifics of their self- and personal adaptation. Accordingly, the age groups of leaving the ranks of the AF and BA servicemen, social adaptation of who finds its manifestation in different ways.

### **Differentiation based on age criteria**

**a) Servicemen up to 30 years old:** In a rapidly changing security environment it is difficult to provide precise framing of causes leading to discharging from the army. Observations show that a young officer decided to leave service if he feels unable to fully realize his potential in military service, comparing his life journey and achievements with the way existence he has have and how successful their coevals in "civilian life" are, or if he has chosen this profession by accident. This is the most mobile part of reserve officers. Discharged under honorable conditions or released members are not eligible for pension and for some time they have to face financial difficulties, especially those of them who have a family. They need such training, that would provide them quick and tangible revenue and growth in their professional career. This is the most successful part of the servicemen in the context of retraining/ acquiring additional qualification in civilian occupational specialty.

**b) Servicemen aged 30-40:** Many of them are forced to leave the ranks of AF and BA due to staff reduction and structural reforms. This does not always coincide with their

personal plans. This category leaves resentful, prone to negatively evaluate their perspectives, quite often with aggressive attitude to others. The combination of pecuniary burdens and substandard living conditions leads to crisis states of mind and personality. Despite the difficulties, the members of this category are trying to maintain emotional and mental flexibility, actively seeking new forms of behavior.

If the representatives of this group of military are provided appropriate positive solution to overcome the crisis, the probability for them to enter into a period of high productivity in a variety of areas of activity will increase. This is that part of discharged servicemen who need a thorough and adequate counseling, professional advice, social and legal support.

**c) Servicemen older than 40:** This is the group of military who have served their time and achieved maximum self-actualization within the army service. They have certain privileges and material welfare. They strain after activities enabling to keep the attributes of their past power and former social status, however, without striving for particularly complex types of business due to the fact that such an endeavor requires procedures of acquiring a new major, knowledge and skills. The process of serious training for them is unattractive, they tend to offices in the administrative and economic control departments of the state and public administration and to various activities /control and security/ in municipal administrations in the field of education and financial bodies. When choosing their further life path they find it easy to turn to various organizations.

In considering the main problems of socialization and adaptation of servicemen leaving the military service and their transition to civilian life environment resulting from their economic, age, psychological and social characteristics and their social status in modern conditions, the importance of social work targeting this category should be taken into account. This necessitates further development of already existing and newly developed forms of social work. Moreover, the servicemen social protection system has historically become a part of the national policy of a state. As such it should be further developed by actively interacting with all executive bodies and sectors of life in a country. In this context, attention should be given to appropriate best practices and their adaptation to our environment, accordingly.

### **Foreign and our Experience in the Field of Social Adaptation of the Military**

In organizing the work on career development and social work with servicemen putting an end to their military career, regardless of reasons, as well as the work with their family members at national level, taking into account international experience is of significant importance. Undoubtedly, it is at least nonsense to believe that this experience can be transferred to our terms unalloyed, directly. In order to be used in the work of our social services, its bringing in conformity with Bulgarian specifics is a requirement.

Almost hundred years' experience in the development of social work not only determines the modernization of the classical social thought paradigm, but also provides scientific foundation for new trends in the social reconstruction of society (Dimitrova 2013; Asenov and Hadziev, 2011).

Theoretical growth of scientific knowledge in the field of social work in many countries of the world has been developing mainly in two directions. The first trend relates to promoting the importance of behavioral approach in the system of psychological explanation based on the theory of knowledge, on the domination of cognitive orientations. The second aspect is related to enhancing the interest in social work theoretical approaches.

In the long run, systematic concepts of social protection, social guarantees, and social services aimed at rendering assistance and support to people finding themselves in complicated life situations have been formed in the knowledge of social work. At that,

orientation towards an overall approach to theory of social work, to the establishment of a legal foundation of social technologies is promoted.

- Comparative analysis of international practice in the system of conversion training and social adaptation of servicemen who undergo transition to civilian life has provoked us to look for an answer to the following questions:
- what military personnel classes leaving the ranks of AF and BA are covered by this system;
- how the financing of military staff's preparation for the transition to civilian is arranged and who is irresponsible for the core measures in this process;
- who is carrying out the process of social adaptation and what structures and organizations within and beyond the competences of the Department of Defence are involved;
- what is the technology of organization of the process of professional reorientation, conversion training and assistance in finding the servicemen discharged from military duty a job;
- what is the time span for carrying out the work on conversion and social adaptation of military before and after their discharge from military service;
- how the availability of practical skills and competences acquired in the course of regular duty by those discharged from military service is reported;
- what is the ratio of discharged servicemen intending to undergo retraining in one civilian occupational specialty or another and those intending to turn to one business or another in such civilian and educational field at a later stage?

In pursuing an answers to these key questions, we turn to the best practices in the field of conversion training and adaptation of the military personnel discharged from service and the members of their families. And it is quite understandably for us, as a member state of NATO, to focus on the practices and experience of the USA and many EU member states of this structures in this area.

In the U.S., in the late 80s of XX century, the Pentagon, the ministries of the Armed Forces, many military organizations (Associations of the US Army, Air Force, Navy, Officers, Seniority, Sergeants, Reserve Officers) assisting those who left military service created a special office aimed at providing employment services.

Employees of this department have developed and implemented a special program for "linking" military and civilian fields, where the individual willing to find a job can obtain information about business sectors he/she would be appropriate for and where specialists in the particular field are needed. Close cooperation between the Department management and companies, corporations, government and private labor offices is essential for achieving this is of exceptional significance. Very useful in boosting and simplifying the job finding process are the published handbooks containing variety of information: starting from tips for servicemen moving from active duty to reserves to requirements for completing the necessary questionnaires, data to be entered by using the modern computer technology. Today, these handbooks are available in almost all libraries of the U.S. military units.

Care for soldiers upon termination of military service in the U.S. by legislation is a duty of the state authorities. Moreover, the enlisted men and N.C.O. who do not receive pensions are eligible for unemployment benefit paid from a fund financed only from the budget of the Ministry of Defence. Military reservists have priority in employment for positions at government offices, more particularly, certain categories of veterans are given priority in employment at government organizations. What is the question about is that in accordance with the legislation of the U.S. (Servicemen's Readjustment Act of 1944, Veterans' Education and Employment Assistance Act of 1976 and "Civil Service Reform Act of 1978) hiring priority in employment at governmental organizations enjoy the participants

in combats and having received government awards or disability during service. Moreover, for those enrolled in the army after September 7, 1980 there is a requirement for them to have served in the regular armed forces for at least two years (this condition does not apply to people with disabilities).

No less noteworthy is the attempt to solve the social problems of servicemen in the United Kingdom and Northern Ireland. All British military are serving under contracts. According to The Queen's regulations and orders for the army commanders are responsible for ensuring access to information and advice on all aspects of adaptation to civilian life for all soldiers in all ranks and in every period of their career.

Specific features of the British practice in solving the problems of adaptation of soldiers passed in stock are the following:

- all measures are carried out at the expense of the state and not at the expense of employers or military;
- the Ministry of Defence provides servicemen advising on these issues two or two and a half years prior to the termination of military service and one year after;
- servicemen are eligible to retraining after five years of service, at that two or two and a half years retraining for the regular is mandatory, while for the officers-voluntary;
- servicemen are entitled to receive a grant of 534 pounds sterling (the amount has not been changed for a number of years) for retraining courses outside the system of the Ministry of Defence (as against our practice established where the amount allocated for retraining of discharged servicemen is cut at regular intervals- currently 350 BGN for a discharged serviceman);
- 25,000 servicemen are being released every year; partial support is provided to all military and full- to 50% of the discharged;
- in addition, the Ministry of Defence reimburses the servicemen travel and accommodation expenses during the conversion retraining;
- duration of conversion training depends on years of service: four weeks - upon completed five years of service, five weeks - upon eight years, six weeks - upon twelve years; seven weeks - sixteen years of service.

Support of the military in the UK takes place on three levels. This includes: general consulting at the unit conducted by the officers responsible for the employment of released officers, the level of support provided by the respective commanding using respective-consultants ( in Navy- 8 people; in the Air respective- 11, LF -22 people); the structure, in which along with the Ministry of Defence participates a private company (the structure includes the Ministry of Defence, Veterans Jobseeking Office, Coutts Consulting Group and the Bureau of Vocational rehabilitation).

A distinctive feature of French policy in the field of social adaptation of the military is the established complex "assembly - training - retraining" taken as a whole and offering possibility for the servicemen not only to successfully carry out their service in the army, but to succeed when they return to civil society within the frameworks of their second career.

Since 22 February 1996, immediately valid and effective as at the date and time of its announcement by the President of the French Republic, the decision to move the army into a professional, the policy for retraining of the military staff is an integral part of the personnel management policy. This makes it necessary to provide for such a career that allows for a serviceman to serve within that specialty at a particular point in time and that can be used at a later stage - in the civil service. This also justifies the necessity of validation of military diplomas in accordance with scale of state diplomas issued in the education system by the administrative committee with the Ministry of Labor. Coordination of the procedure for recognition of military diplomas military is carried out by the Department of occupational mobility.

Yet another feature of the French policy in this area is the significant differentiation in social work care provided to particular military personnel classes (Navy, Air Forces, Land Forces). Thus, a structure designated as Mobility in the Navy was established in the Navy, encompassing five retraining departments. Coordination of each of these departments is carried out by an officer-consultant in charge for the region. Their staff is looking for employment opportunities in direct contact with companies (more than 4,000 different companies use the services of Mobility in the Navy structure).

Existing legislative basis for conversion training includes:

- A common normative instrument for military personnel (a Law of 13 July 1972) with amendments introduced with the Law on measures to help military within the frames of transition to a professional army of 19 December 1996. According to this act, career regulars and servicemen on contract are entitled to twelve months of leave for training, allowing them to pass training tailored to their career project. Moreover, during the first six months of retraining they receive 100% of their salary and over the next six months - a salary, but without payment of premium and bonuses. They also have the right to work (internship) at an enterprise and to get remuneration there, though it can reduce the military salary.
- Three decree adopted in May 1997, regulating the conditions for granting leave for retraining (the leave is granted by personnel departments).
- A common regulation of 22 April 1998 of the General Secretariat of the Executive Office to the MD and the General staffs of different military defines the principles underlying the new policy for retraining of personnel.

There is a Council on personal retraining operating to the Ministry of Defence, researching and dealing with the whole range of problems, drawing conclusions and recommendations on projects of the Ministry of Defence.

The panel of the Council, chaired by the Minister of Defence, consists of twelve representatives of staffs and controls, seven members appointed by the CSFM, the president of the Association of Social Adaptation of Officers (ARCO), representatives of various associations of ex- servicemen, a representative of the Ministry of labor and representative of the Ministry of National Education .

Responsibility for the retraining of personnel is assigned to the Department of occupational mobility (MMP -Mission pour la Mobilité Professionnelle) founded in 1982, that develops and defines together with the various armed forces a policy for retraining of personnel under the leadership of the management of military and civilian personnel (DFP).

The first interview for reorientation is in the competences of the Department of Defence. Depending on situation, it provides the applicant an opportunity to refer to the officer-consultant at a training center (CIR) or ARCO.

In Germany the organization of retraining process, professional orientation of military personnel on duty and after leaving is the competences of the administrative and economic management of the Bundeswehr (its units within the Federal provinces). Under the command of Administrative and Economic Office VI in Bavaria there are 21 000 people, 17 units (district military administration). A distinctive feature of the German experience is that professional orientation and retraining at the end of the service is part of a general policy for training of the military carried throughout the service. Funding for these activities is charged to the budget of the Defence Department.

During the late 1960s a resolution was adopted according to which every officer of the Bundeswehr is required to have higher education. To this end, the officer either goes into the army after having completed university education, or obtained it during the service. In a related move two military universities have been established (in Hamburg and Munich).



Eligible for these universities were military servicing on re-engagement who have served not less than four years and wishing to become officers - professionals.

Courses at these universities are conducted on a more intensive basis than at ordinary civil universities. The total period of training is significantly reduced (3-4 years) by organizing training trimesters (i.e. a calendar year training lasts three semesters, hence the name „trimesters”). Students receive a salary, wear civilian clothes. Once a week they have only military training. Specialties in which the training is conducted is determined according to the needs of the Armed Forces.

During the service, through the mediation of the Career Development Office to the Bundeswehr, training in civil disciplines and professions and further qualification of contract servicemen in the military- vocational training is conducted.

Upskilling takes place in a special school to the Bundeswehr at the end of military service. There general training and special courses in majors leading to awarding of professions as economist, tutor, engineering technician or electrician are taught.

Upon completing the service, assisted by the Career Development Office to the Bundeswehr, the officers receive special education and financial aid at a particular office with allowance for length of service, compensating jobseeking and relocation expenses incurred.

It is noteworthy that in the Bundeswehr considerable resources are spent on advertising military service. In support of this was the large-scale campaign was conducted in 1996, on organization of which almost half of the budget allocated to attract recruits (about 11 million) was spent.

The analysis shows that military service under contract in Germany is a temporary job. Civil future of servicemen is protected by the Social security of former Bundeswehr officers act providing insurance for years of service (monetary compensation for the interim period and cash assistance for the transitional period) and professional qualification.

The practices of developed countries in Europe (the UK, France, Germany, etc.) confirm that servicemen discharged from military service prepare for civilian life prior to their releasing from the Armed Forces and the organization of this process is a responsibility of the ministries of Defence, and of course, subject to financial support from the state.

Adoption of foreign experience in social protection of servicemen requires taking into account the complex of domestic and foreign policy factors influencing the processes taking place in a particular state. The existing models for social protection of servicemen worldwide can be divided into institutional, partially institutional and extrainstitutional.

The institutional model is typical for the countries with developed legal systems, industrial or post industrial economy, democratic state system. There are clearly defined conditions of operation of the armed forces, a comprehensive civil control is carried out there, a functioning contract-based service system and an established legal framework for protection of the honor and dignity of the military. A well-developed system for material and social security of servicemen and members of their families allows the state to provide them with living standards higher than the national average. Institutional model defines the high prestige of military service in the public mind and its attractiveness for a significant part of the younger generation.

In countries where a social security institution is just beginning to form and the system of guarantees, compensations and benefits for servicemen sometimes has a casual and fragmentary character a partially institutional model is formed. There, the peculiarity of the legal status of the armed forces and the military represents an opportunity to involve them in extrinsic functions implementation. In some cases, such decisions of the military and political leadership of a country could be taken in concurrence with the legislative authorities. Living standard of the military in partially institutional system is comparable to the average standard of living of the population. The prestige of the military service is substantially lower than in

terms of the institutional model; military service in the public perception is ambiguous. There are certain difficulties with the provisioning of the armed forces. The choice of the military profession is often driven by the more favorable socio-economic conditions of life outside the army.

Extraintitutional model is formed in countries where the military are an independent political force, being in power (or having unlimited influence on it). There, the military actually participate in political decisions and, if necessary, use firearms. They act under the wartime laws and conduct military dictatorship. Army members get considerably higher socio-economic benefits than civilians. The military cause fear and tension.

Social protection of servicemen in Bulgaria for the present is of partially institutional nature, and sometimes, in a number of signs is reduced to extraintitutional model. The way ahead in its further development depends on the specific policies applied. More preferable is the way of strengthening the legal basis for the social protection of servicemen and provisioning plenty of the socio-economic and socio-cultural mechanisms, which means a move towards institutional model.

The analysis of the legal regulation concerning social protection of servicemen applied by the member countries Euro-Atlantic structures allows to highlight a number of specificities. Attention, in our view, should be given to the following:

- First, they regulate the status of the military both as a citizen, and as a special subject of public relations;
- Second, the underlying principle of legal regulation of the servicemen social protection system is the principle of compensation for specific burdens and hardships of the military service;
- Third, the special status of the military, the complex of their rights and privileges is constitutionally entrenched.
- Fourth, the effectiveness of military legislation is conditioned by its systematization.

A distinctive feature of the legal regulation concerning social protection of foreign armies servicemen is the establishment and effective functioning of special structures to the state administrative bodies within the immediate jurisdiction of which is the settlement of the said issues.

European practice gives evidence that parliamentary scrutiny is the basis for a broad and developed system of civil control over the armed forces and the entire military. In Bulgaria, there are still many gaps in the implementation of parliamentary scrutiny, although there have been certain changes in this direction. However, a number of questions concerning armed forces activities that have significant social importance remain outside the regulating effect of the National Assembly. Speaking of this very day in our country, it is far from complete implementation of the possibilities inherent in the foundations of parliamentarism.

The existence of a network of public organizations at different levels is typical of the established in the Western countries social protection systems; there is a steady tendency to boost their role. Thus, the French experts consider it necessary to establish within the military organization special institutional frameworks for open discussion and early detection of problems at regiment (ship) level.

Notwithstanding undoubted success of the military social protection system development of foreign countries, they also have a number of unresolved issues. This is primarily the problem of housing. For example, many U.S. military garrisons have no living conditions for the families provided and they are categorized as units where family reunification is not allowed. Family separation creates many financial, psychological and social difficulties. Servicemen arriving at the place of service with a family are paid travel expenses for 60 days. In practice, it often turns out that this money is not enough. Quite often the soldier is unable to find accommodation for his family.

In Germany, with all that there are sufficient lodgment opportunities, they often do not meet the modern requirements, or inappropriate in terms of location. All this creates difficulties for the families of soldiers when it comes to children going to school, finding jobs for women and the loss of previous social environment with all associated negatives in general.

In all armies of states, subject of this study, without exception, the social protection of servicemen families is a topic of the day. In the U.S., the total income of an officer's family is often lower than the family income of civil servants in the federal administrative bodies. Soldiers and their families are sometimes concerned about that to what extent they will do until the next monetary allowance. Family's dissatisfaction with the lifestyle of servicemen is pointed out as a major barrier in the way of continuing the military service contract.

Social and psychological adaptation of soldiers passed in stock remains a problem of the day. They are changing the profession in advanced age, when others have made a career in civilian profession. As a result, on the background of tense situation, special difficulties are faced on the labor market, being exacerbated by the fact that in many countries, in Germany in particular, there is no protection against unemployment for ex-servicemen under contract.

Experts in the field of innovative military education in Bulgaria believe that indiscriminated borrowing of foreign practice is extremely dangerous. Meanwhile, others believe that the specifics of Bulgarian lifestyle, ideological heritage, mentality of the population should not be exaggerated, since during the transition period they have not been so much significant factors of social development, as could be expected. Much greater impact has the state of economy, which crucially affects social processes, limitates the choice of orientations and scales of social and political events, rising sometimes insurmountable barriers in the way to implementation of social policy.

Thus utilization of foreign practice and experience should be seen as a guideline to form a system and mechanisms for social protection of servicemen. With all steadiness of the historical and national circumstances, they also undergo certain changes. Representative in this respect is our legal system, in the development of which the role of the state determinative. Such a role for the state gives the Bulgarian legal system that unique character that sets it apart from the legal systems of other European countries. This means that when taking certain legal concepts, models, and rules of the law, we must recognize the specific nature of our legal system that can radically transform foreign ideas and models. In this vein, we consider it necessary to trace our country-specific practice for social adaptation servicemen, discharged from military service.

### **Procedure for Social Adaptation of Servicemen in Bulgaria**

Solving the complex task of creating a system of social protection of servicemen, as a rule, affects all aspects of the life of society. Fundamentally new questions appear to economic, social, intellectual and other spheres. Solving a similar problem in Bulgaria is complicated by the significant reduction of the army, its reforming by applying professional principle of completion. Taking into account the international experience, it can be assumed that similar changes at home can cause new set of difficult and complex problems. In this case, attracting foreign partners and adopting joint training programs of soldiers moving into stock would be useful. Measures and actions in this area should be directed towards the implementation of programs and projects for motivation, training and retraining, job placement, starting own business and conversion of military property. Feasibility of the study of the labor market determines the need for professional orientation. This requires involvement of the military in training courses, providing learning opportunities at higher educational institutions awarding majors sought by employers, making them ready to start their own business, helping them with job placement. Accordingly, provided funding for

training courses should be in proportion military budget - serviceman (70:30). Such an approach shall promote the aspiration for development of those servicemen who are subject to retirement or otherwise leaving the ranks of the Army and prepare them for self-actualization in civilian life. Training courses should be tailored to the requirements of the labor market (Terziev and Dimitrova, 2013c).

In accordance with the above, the main types of social services can be classified as follows:

- professional orientation;
- assistance in professional retraining;
- jobseeking assistance;
- legal assistance;
- social and psychological support;
- assistance in setting up, small business enterprises;
- information and consulting services;
- work with the families of servicemen who died while performing their military duty.

Professional orientation and the choice of civil profession is the first step in preparing for the transition to stock. Assistance with professional retraining includes career choice and direction to professional retraining at educational units or professional training centers.

As to the jobseeking, it consists in rendering assistance on the part of specialists-professionals when choosing a future profession, and seeking suitable placement.

Legal assistance consists in information-consulting sessions with young officers on the mortgage system of housing of soldiers, providing legal advising to soldiers who have been wounded and more.

Social and psychological support includes psychological diagnosis and psychological help using modern methods and also psychological support to servicemen found themselves in a difficult life situation.

Assistance in the establishment of small business enterprises among servicemen discharged from military service is provided during information meetings on development of entrepreneurial activity among retired military personnel and their family members and others.

Information, consulting and methodological support include: disseminating information about the social protection services provided to servicemen, to those discharged from military service and their families /Labor Office, Social Assistance Directorates, etc./; creation of information-analytical data base on social adaptation issues; working out, publishing and distribution of guiding and reference literature; organizing information interaction with the media, with departments and organizations dealing with social protection of servicemen moving into reserve and their family members; working out, publishing and distribution of methodological instruments in relation to organization and carrying out military social work.

An important point is that the process of social adaptation initiates at the very military formation, before a serviceman is discharged from military service. To this effect, group and individual motivational talks are held, with the participation of experts from the National Employment Agency, and its territorial divisions, when possible. Motivation lectures within groups are organized by commanders and coordinators within the formation, being helped and assisted by consultants in adaptation from the District and Regional Military Departments to the Central Office of Military Districts /CMD/. This means that before being released, a serviceman acquires an initial notion of the process of social adaptation and the possibilities for self-actualization in civil society.

It is noteworthy that the legislative basis (Article 162, item 2, Art. 164 and Art. 169 of the Act on Defence and Armed Forces of the Republic of Bulgaria) is indicative that upon

release from military service, including due to unfitness while performing or in connection with the performance of his duties, the military are entitled to a single training course with a duration of up to six months. For the duration of the training they are provided with additional paid leave.

The choice or refusal of the military to enjoy their rights to participate in the activities of social adaptation is certified at the time of serving of the notice or service termination order, and to this end they personally complete a Registration card No. 1 in the established form, that is attached and stored in the personnel file.

Adaptation coordinators in formations are those, who conduct individual talk with the individual released from military service and perform its registration in special log. They provide the registered serviceman a copy of his Registration card No.1 and inform him of the time and place of his first visit to respective Military District/ Regional/ Central Military Department or Division/. Registered soldiers are issued to a recommendation /personal profile/ by the human resources /personnel/ office, signed by the commander (chief) of the formation.

Cooperation in conducting the process of adaptation of soldiers moving to civilian life is rendered by the Central Office of Military Districts and subordinate Military Departments, Regional and District Military Offices.

Servicemen discharged from military service willing to participate the social adaptation activities in their first visit to the structure of CMD submit the package of documents required (a copy of Registration form No 1 or an expert decision issued by the Central Military Medical Commission to those discharged due to unfitness, a recommendation /profile by the commanding officer (chief) of the military unit).

Adaptation consultants to the structures of CMD are responsible for the proper and timely delivery of information on the military documents for registration and filing up of documents requirements, employment and training projects, programs and measures carried out by the national, regional and local structures of Employment Agency and other employers and training organizations or job vacancies, relevant requirements, application procedures and information of employers.

During the first visit, a serviceman, assisted by the Military Office/ Regional, District or Central Military Department adaptation consultant should complete Registration Card No. 2m as per the established form, thus being registered in a special log. Every visit of the officer to the CMD structure is recorded in the logbook.

Each registered serviceman is being elaborated to an individual plan defining procedures for social adaptation activities and a schedule for subsequent visits to the CMD structure. The individual plan is drawn up by the adaptation consultant together with the freed army member who follows the implementation of the plan and the recommendations of the consultant.

Professional orientation of the military discharged from military service requires information on occupations and activities, employability requirements, training organizations and institutions, forms of study, documents issued upon completing the study, employment opportunities in the labor market. The choice of solution for civil profession/ specialty and referral to a related appropriate training is assisted by adaptation consultants to CMD structures. They are the ones who carry out individual or group (a group of at least three soldiers) motivational talks aimed at adapting the participants to the market environment in civil society. Within the scope of consultancy are included problems such: identification of knowledge, skills and experience gained during military service; formulation of social adaptation objectives and development of an individual plan; working out strategies for effective job searching and applying; getting acquainted with trends in the labor market, the sources of information on job vacancies; analysis of jobs adds and choice of jobs for

application; application documents preparation: CV, recommendation/ profile letters and forms; interview with the employer; job offer assessment etc.

There is a possibility for a single return trip on account of formation at the place of residence to the place where motivational talk is held in the case that motivational training takes place at the CMD structures outside the place in which the serviceman lives. In these cases, subsistence and accommodation expenses are paid by the serviceman.

Further consulting to soldiers and/ or their family members, self- seeking psychological assistance related to effects of change resulting from the transition from military to civilian profession and lifestyle is provided by medical teams consisting of appropriate professionals. The military, released from military service is granted the right to choose a qualification course and training institution. They furnish the commander (chief) and the consultant of respective military unit a document issued by the training institution evidencing his inclusion in a training course not later than three days prior to the course. This is the ground for him additional paid leave for the duration of the course to be granted. To this end, the certifying document from the training organization shall contain the following information: personal data of the serviceman discharged from military service; place of employment; the name of the course; training period; number of classes for the training period; the price (tuition fee); a licence/ certificate - training qualification document.

Regular attendance is required by course-enrolled servicemen and successful passing the exams at the end of the training. In case a serviceman quits the course, on his own initiative including, he should immediately inform the commander (chief) of formation and the head at the CDM. Having completed the course, the military is obliged in a 5 days-term to present to the CMD all the documents issued by the training organization certifying completion of the course: an original invoice and a cash receipt, a copy of the license/ certificated issued by the training institution .

Financial provision for participation in courses is ensured by the Ministry of Defence. On the basis of supporting documents evidencing successful completion of the training course soldiers are paid 70% of the training cost, but not more than the maximum amount of funds amounting to BGN 350.00.

Consultants to CMD assist the registered military discharged from service in seeking job, providing information and directing them to the regional employment services, labor offices and other employers' organizations to be successful in the labor market. More particularly, they provide them information about: suitable jobs, including at another location in the country or in other countries; involvement in projects, programs and measures for employment and training carried out by other institutions and organizations; directing injured during or while performing their duties to programs and projects that support their social integration; including and increasing their employability and employment; preparation and participation in employment and information exchanges; meetings with employers and other forms of employment opportunities, organized in collaboration with the structures of the Employment Agency and other institutions and organizations.

Those willing to start their own business are assisted by the adaptation consultant, who advises them and refers them to training courses providing entrepreneurial, managerial and business skills; furnishes them with promotional and information materials to start their own business; inform about regional, national and European programs aimed at supporting entrepreneurs, crediting sources and other relevant information about starting their own business.

Preparation for starting own business is directed at promoting activity and adaptability of the military discharged from active service, with the clear idea, desire and attitude to provide career development through self-employment and to start their own business. The relevant governing documents in relation to social adaptation activities implementation have

been provided for at the CMD (the Act on Defence and Armed Forces of the Republic of Bulgaria; Ordinance No. H-29/12.11.2010, the SG, item 95/03.12.2010 on conditions and terms of adaptation of servicemen of the Ministry of Defence, the structures directly subordinate to the Minister of Defence and the Bulgarian army upon discharging from military service and the amendments thereto in the Ordinance promulgated in the SG, 41/01.06.2012; Cooperation Agreement between the Ministry of Defence and Employment Agency to the Ministry of Labor and Social Policy of 07.06.2011; Joint Regulations of the Ministry of Defence and Employment Agency 2011; Instructions of the Director of Human Resources Agency- MD on social adaptation activities within CDM, Military Offices and Regional military departments; CDM concept for improving the model for social adaptation of servicemen released by the Ministry of Defence, the structures directly subordinate to the Minister of Defence and the Bulgarian Army; Instructions No.03/05.07.2012 of the Head of CDM concerning organization of activities aimed at adaptation of servicemen to the Ministry of Defence, structures directly subordinate to the Minister of Defence and the Bulgarian Army upon releasing from military service (Ministry of Defence of the Republic Bulgaria, 2006).

It is noteworthy that our country has gained experience and methodological basis for the social and adaptation of the military honorably discharged from active service. Based on best practices- own and these of the member states of the Euro-Atlantic structures we considered appropriate to state the right direction to increasing the efficiency of social adaptation of servicemen released from military service.

### **Main Directions for Optimization of Social Work with the Military, released from Military Service**

Much of the servicemen released from military service have a good education and sufficient social status. After moving in reserve, they are left alone with their problems and often become absolutely defenseless in the modern world of exchange relations.

It is necessary for former military to be involved in the entrepreneurship in order to create additional employment opportunities. Besides social and economic problems, the military that have moved into reserves and their family members also face difficulties in finding job, housing problems, family wealth impairment, little accessibility to health and recreational activities. All this is due to the fact that there is no an effective social policy to support such families. According to the representatives of all the departments main cause, giving rise to this problem, is economic.

Studies allow to conclude that the establishment of a system for social adaptation of the military released from military service presently refers to the modern stage the most important directions in the social policy.

Nowadays, the need for further development of social work and various social technologies, giving significance to contemporary experience in the sphere of social services, becomes even more relevant.

An elaborated approach aimed at establishing a network of social service agencies, at creating a truly effective and necessary social protection system should be applied. Professionalism and morality should be regarded as personal qualities that every single social services specialist must be in possession of. Coordination between various administrative departments for social protection of the population, education, health, employment, etc. should be also enhanced- to meet the needs of the population in general.

The main obstacles to increasing the effectiveness of social work with servicemen passing to the reserve are:

- unregulated legislation on the functions of social protection in the armed forces and the mechanisms for their implementation;

- inadequacy and fragmentarily of the legal basis relating to issues of social and economic security of military personnel ;
- inadequate modern working conditions and retirement indemnity for servicemen;
- the absence of action programs for social adaptation of servicemen subject passing in stock;
- delayed arrangement of housing problems;
- imperfection of medical care system applicable to servicemen released from military service and to their family members;
- weak legal basis of the social security system;
- limited financial resources available at the disposal of government authorities at national and regional level, the deficit of funds in local government;
- lack of coordination between the ministries and agencies in the field of social services;
- shortage of staff who have professional training in social work;
- low social status and inadequate wages of workers engaged in social services.

It is obvious that here, in Bulgaria, it is necessary to develop licensed activity services /delegated social service/ in the area of social adaptation of the military released from military service, to ensure monitoring of the social service compliance with the state standards. It is important for normative and legal basis for the organization and functioning of the social welfare services to be developed, personnel support to social offices providing services to a particular category of citizens.

In recent years a number of measures have been adopted to improve the legal basis for social protection of servicemen released from military service and members of their families, given the changed social and economic conditions. Sociological studies conducted in Bulgaria and results analysis of annual monitoring of socio-economic and legal status of the military taken all round mark positive dynamics of the process of social adaptation of soldiers discharged from military service in recent years.

This process has a systematic and complex character and is performed by many social institutions and specialized agencies concerned with the organization of the social adaptation of the military released from military service and the members of their families. Arguably, the process of adaptation began acquiring institutional traits. However, inconsistencies in the implementation of programs for adaptation lead to serious regional disparity.

Against the background of the declining level of confidence in the bodies of legislative and executive power on the part of population the rating of the armed forces in other state and public institutions remains relatively high, though the military themselves do not value the military service prestige in modern Bulgarian society. And this is directly related to dissatisfaction with the level of concern of the state for their families, underestimation of the place and role they play in the protection of the state, etc. This controversial circumstance shows hidden reserves to improve social policy and social work in social adaptation of soldiers released from military service and members of their families.

Social protection of servicemen released from military service and their families is a wide range of legislative, organizational, professional, financial, psychological and other aspects relating to both everyday life and the inner realm of a man.

The main tasks of the system for social protection of population in providing social support to the military, the honorably released part of their staff and their families can be specified as follow:

- identifying the most topical issues of adaptation and social protection of servicemen released from military service;
- support in providing medical, social, psychological, socio-economic, legal and other assistance;



- Interaction with the state and public organizations in search of servicemen released from military service due to illness or disability /people with fewer opportunities/;
- support to the families of servicemen in need of social assistance;
- analysis of conditions and prospects for social security and services to participants in warfare, to the military released from military service and members of their families;
- raising the living standards of the military and their families providing each of them the maximum possible under particular conditions social protection in accordance with the legislation of Bulgaria.

Based on the analysis performed we consider it appropriate to offer some recommendations to improve the system for social protection of servicemen released from military service.

Above all, it is necessary to establish the legal foundations of social protection of servicemen, also the social adaptation of the military released from military service and the members of their families. These are socio-economic, political and personal rights and freedoms, which cannot be modified, canceled or restricted by other normative and legal acts of lower level force. In other words, no legal regulation can contravene constitutional rights and freedoms of citizens.

In carrying out the reform of the military, length of service also has to be taken into account when providing for the pension insurance.

A detailed and realistic military service contract is optative in order to provide for equal responsibility of servicemen to the state and, vice versa, of the state to servicemen. It is necessary to strengthen control over the legality of orders issued by commanders and superiors regarding the allocation/ distribution of material and household goods among employees, imposing disciplinary actions, as well as regarding compliance of their practical work with the principle of social justice in the formations they are being entrusted to. Most full effect here can be achieved by establishing Institute of delegated representation of the bodies of state power within the formations in the form of special agents (on the model of the army in Germany) who would come into the system from bodies engaged in social and legal activity.

It is desirable to improve the system for continuous qualification advancement of the military, including at civilian universities, making them ready for the conditions of „civilian” life, providing opportunities for members of their families to receive superior quality education, which in turn shall ensure their competitiveness in the labor market.

It is necessary to set up sufficiently effective social-state structures to implement the support of the servicemen after their release from military service and transition into the stock.

We need to continue work on implementation of existing programs for social adaptation and social work with citizens released from military service and their families and to ensure privileges prescribed under the law. It is practicable to actively use the possibilities of social activity which involves such mechanisms as professional retraining of military personnel in the basics of entrepreneurship and small business, psychological consulting, legal services and other activities.

In this regard we consider beneficiary using new employment opportunities related to computers and new technologies. These types of activities, having high rehabilitation potential, contribute to self-assertion and can provide them with conditions for self-insurance. Complex development of the social protection of servicemen released from the ranks of the armed forces system in our view calls for:

- further development and legislative endorsement of new basic social standards and norms for the quality of life for servicemen and those passing in stock;

- defining mechanisms for their up-dating, development of medium and long-term social protection programs, providing social services and social benefits system reformation;
- completing the legislative package with regulations governing the social protection issues that have not been reflected in national legislation so far;
- adoption of urgent measures aimed at improving the retirement insurance;
- development of a long-term program for economic security, adapted to modern economic relations, at that maintaining a focus on the participants in hostilities, war invalids, on family members of servicemen who have lost people providing for them;
- supporting purchasing power of each family of military personnel within the conditions of continuing rise in prices and the going up cost of living through systematic readjustment/ indexation and compensation payments;
- defining the mechanisms for recovery of the lost link between the amount of pension and monetary support of servicemen;
- providing a radical solution to the housing problem in the Armed Forces .

Very recent creation of an effective, dynamic system of social adaptation of soldiers has succeeded to operatively and flexibly reorganize their structural divisions in order best to implement social policy of the state in life through a network of local state social service local government, public organizations.

In accordance with this requirement, a specialist of the given sphere need to:

- have good professional training, knowledge in various areas of psychology, pedagogy, sociology, laws, economics and organization of production, computing, mathematical statistics and many other general professional and special disciplines;
- have sufficient general and professional culture, to be deeply versed that presumes good knowledge in the humanities;
- be informed about contemporary political, social and economic processes in society and widely aware of the standard of living and problems of different social groups;
- foresee the consequences of his actions and firmly pursue his position in life;
- be in possession of certain social adaptability in relation to diversity of population needing advices of the social activity specialist;
- skillfully communicate and predispose the „difficult” growing ups, orphans, deserted women, people with limited opportunities, elderly, people in vindication etc.;
- to possess professional skills and experience, to be able to provoke sympathy and trust, to keep professional confidentiality, to show sense of delicacy in all matters concerning intimate aspects of human life, to have emotional stability, to be ready for mental loads, to avoid neurotic deviations in their own judgments and actions despite possible failures (not pertinent reactions, refusals, etc.);
- be able to conscientiously perform own duty, remaining calm, benevolent and attentive to the ward;
- be able to take appropriate decision in extreme situations, to formulate his thoughts, literate and understandable to set them forth.

In summary of above fragments of the social adaptation of the military released from military service and passing in stock we believe that it should be regarded as part of a comprehensive system for social work and protection of intellectual capital in our country that is in possession of value adding knowledge and skills. As soldiers are part of this capital, of the quality of social work carried out for adaptation to civilian life, possibilities for their smooth adaptation to civilian life and effective use of their skills and competencies carrying value and competitive advantage are determined. We make no claim to comprehensiveness of problems considered in our study but we purport to contribute to scientific knowledge in the field of social adaptation of servicemen leaving the ranks of the Armed Forces and the Bulgarian Army providing our view on this such a topical issue in the conditions of

strengthening budget deficit and dynamic changes in security environment. And the effectiveness of the implementation of a cost-based system of social adaptation and protection is directly related to compliance with the principles of legality, integrity, impartiality, accountability, professionalism, competence, positivity, accessibility, humanity, transparency, equal treatment of social services users and the dignity of the military and civilian personnel along with all other members of our society.

### References:

- Asenov, A. and Hadziev, K., 2011. *Individual, team leaders*. Sofia: Lyuren.
- Dimitrova, S., 2013. *Management of resources in a dynamically changing security environment*. Veliko Tarnovo: Vasil Levski National Military University, pp.326-335.
- Dimitrova, S., 2011. *Resource Management defense in the security sector*. Veliko Tarnovo: National Military University, pp.11,23,455,158-159].
- Ministry of Defence of the Republic Bulgaria, 2006. Concept of human resource management in the Ministry of Defence, armed forces and structures directly subordinate to the Minister of Defence [*Концепция за управление на човешките ресурси в Министерство на отбраната, Българската Армия и структурите на пряко подчинение на министъра на отбраната*]. Sofia: Ministry of Defence of the Republic Bulgaria
- Terziev, V. and Dimitrova, S., 2013a. Rethinking the social adaptation of the military, exempted from military service [Нов поглед на социалната адаптация на военнослужещите, освободени от военна служба], *The Journal New Knowledge of UARD*, 3, pp.33-45.
- Terziev, V. and Dimitrova, S., 2013b. Social adaptation as a social process in the adaptation of servicemen [Социалната адаптация като социален процес, при адаптацията на военносолужещите]. *The Journal New Knowledge of UARD*, 3, pp.89-99
- Terziev, V. and Dimitrova, S., 2013c. Theoretical studies for the realization of practical model of the process of social adaptation of former soldiers and their families [Теоретично изследване за осъществяване на практически модел на процеса на социална адаптация на бивши военнослужещи и членове на техните семейства]. *The Journal New Knowledge of UARD*, 3, pp.46-54
- Terziev, V. and Dimitrova, S., 2014a. Organizational and pedagogical foundations of the activities of social adaptation of former servicemen and their family members in vocational training centers [Организационно-педагогически основи на дейността на социална адаптация на бившите военнослужещи и членовете на техните семейства в центровете за професионално обучение] In: *VII International Scientific Conference „Innovations in Technology and Education” (KuzGTU)*, Belovo, Russia, 28-29 March 2014, pp.312-320.
- Terziev, V. and Dimitrova, S., 2014b. Theoretical studies for the realization of practical model of the process of social adaptation of former servicemen and members of their families [Теоретично изследване за осъществяване на практически модел на процеса на социална адаптация на бивши военнослужещи и членове на техните семейства]. In: *VII International Scientific Conference „Innovations in Technology and Education” (KuzGTU)*, Belovo, Russia, 28-29 March 2014, pp.298-312.

## EUROPEAN VALUES AND GEORGIA (IN THE LIGHT OF MERAB MAMARDASHVILI'S VIEW)

*Dodo (Darejan) Labuchidze, Prof.*  
Grigol Robakidze University, Tbilisi, Georgia

---

### Abstract

The spectrum of the problems analyzed in the following article is based on the works by Merab Mamardashvili (1930-1990) dedicated to the theme of Europe, talks given in Paris and Barcelona, articles and interviews published in various French newspapers or journals. Mamardashvili clearly realized that the establishment of democratic regime in the society emerging on the ruins of a totalitarian state could create the most complicated problem to the state and culture; that the indigenous peoples of the former Soviet Union (including Georgians) who before October Revolution could not follow the time, modernity, would find themselves in a difficult situation in the process of formation of civil society and its members as citizens. The aspiration toward modernizing the individuals poses many difficulties to the politicians and citizens because we are simultaneously being transformed into free and independent nation, and the members of civil society. The situation is complicated by the fact that this process passes through the fog of post-totalitarian society. Merab Mamardashvili's critical analysis is due to a desire for better future of Georgia, the desire that in the era of globalization Georgian thinking could adequately respond to the challenges of time. In the process of desovietization of thinking and formation of civil society, the views developed by the philosopher Merab Mamardashvili about the relationships between the individual and society are still valuable and relevant.

---

**Keywords:** Globalization, modernity, post-totalitarian society, process of formation, civil society, democratic regime, cultural reflection, rational element, personal dignity, critical analysis

### Introduction

In recent history of Georgia signing the Association Agreement with the European Union, one of the most positive steps made by Georgian republic is a difficult and honorable challenge for Georgian people being removed from the European efforts. The EU Member States (among which thirteen by territories, nine by the population is much smaller than our country) by their values and mentality embodied in their life are highly advanced, exemplary countries. This situation gives new impulse to Georgians' aspiration to establish their decent place in the bosom of the community of European countries.

Georgia with its religion, cultural origins and developmental trends mainly belonged to the West than to the East. This reality is clearly demonstrated by a brief historical review of Georgians' aspirations to the Western culture and values: during eight centuries (IV-XII) variety of creations (religious, philosophical, historical, artistic) translated into Georgian in the cultural centers within and beyond the borders of Georgia; in XVIII-XIX centuries known among us as "Voltaireism" the interest of religious and secular people wishing to implement "Europeism" about the actual social issues expressing the spirit of the epoch, which was clearly reflected in their educational-translational work; in the beginning of XX century the progressive Georgian thinkers educated by the great thinkers and artists of

Western Europe, on the basis of knowledge and experience gained in Europe gave to the innovative developments the national shade and established them in Georgian culture. This efficient and urgent initiative soon after was ended by the Bolshevik leaders. According to the absolutely correct view developed by Prof. Iremadze, “that is the effort from which Georgians were removed by implementing Russian mentality and spreading the Soviet men’s consciousness! They were departed as from the legal values of Greco-Roman world, as well as from the highest ideals of the Gospel!”<sup>21</sup>.

So, foolishness in spite of thinking, honesty, and dignity was established in Georgia (like the other republics of the Soviet Union) from the beginning of the 20s of XX century. The laws and rhythm of life characteristic to the life in totalitarian states for dozens of years complicated and aggravated “the process of modernizing which was being set up in the West during the 400 years”.<sup>22</sup> Under such circumstances, defending the proper orientation of life and true human ideals needed genuine morality and great spiritual strength.

The concept of “modernity” was established in Europe after completion of the process of formation of national states. These are the states which met new demands of epoch with completely new nature and different rhythm with solved national problems; and the formation of “Modern” human was performed according to the doctrine of the Enlightenment. To promote the reasonable relationships among the members of the community the greatest importance was given to the education of not only the younger generation, but the whole mass of people, the development of good natural human instincts, the propaganda of democratic, humane ideas, spreading knowledge among the people. Currently, these states are those industrialized democracies where the society based on the phenomenon of independent and free individual, efficiently conducted process of rationalization and technological transformations accelerated the growth and development in all spheres of society.

In the above mentioned context certain aspects of Merab Mamardashili’s views which echo the contemporary epoch are expressed with a new strength. He was almost the only one in the former Soviet Union who always openly and directly expressed the truth to the interlocutor as well as to the broad mass of audience by thinking over and discussing the baneful mechanisms of totalitarian regime. Obviously, as the top goal to escape from the stereotypes of the Soviet regime, Mamardashvili considered defeating the Soviet regime and gaining national freedom about which he specially mentions: “The civil society being in the grip of the totalitarian regime whose life was like death, is the main enemy of the same regime; it had to defeat it and so it did”<sup>23</sup>.

Mamardashvili clearly realized that the establishment of democratic regime in the society emerging on the ruins of a totalitarian state could cause the most complicated problem to the state and culture; that the indigenous peoples of the former Soviet Union (including Georgians) who before October Revolution could not follow the time, modernity, in the process of formation of civil society and its members as citizens would find themselves in a difficult situation.

The aspiration toward modernizing the individuals poses many difficulties to the politicians and citizens because we are simultaneously being transformed into free and independent nation, and the members of civil society. The situation is complicated by the fact that this process passes through the fog of post-totalitarian society where “as if abolished and blocked totalitarian structures” still exist in social and mental space. “We, having spent the

<sup>21</sup>Iremadze T., “Philosophy at the Crossroad of Epochsand Cultures”, “Nekeri”, Tbilisi, 2013. p. 128.

<sup>22</sup> See: “Being a Philosopher is Really a Destiny”, translated from French by Dodo Labuchidze-Khoperia, See: “Renewed Iveria”, N18, November 1 (Tbilisi, 2001), p. 14.

<sup>23</sup>See: Merab Mamardashvili, “Democracy Could not Rely on National Slogans” (Interview), Translated from French by Dodo Labuchidze-Khoperia, See: “Arili”, October 12 (Tbilisi, 2000), p.5.

energy, have lost the sense of politics; we do not know anymore how to live in a complex society. Like the whole unity of the Soviet people, we dozed so long that we have to re-learn to distinguish life from death, dreams from reality”<sup>24</sup>.

For implementation of this Mamardashvili believed that terms of the reform should aim the following: to return the individual’s honesty as the reference for the society which at the same time means returning to the culture and civilization; giving rigid and hierarchical institutional norms for human creative activities; taking into account by Georgian society such elements and forms of modern society that are not accepted by it. In a word, the terms of the reform should aim the one that is meant by the access to European values. Here it is important the attempt of the state to dialogue with the society, the partnership of the state with real and autonomous forces of the society assuming that by this way it would be possible to build civil society, or “the organization composed of those different elements that contribute to its functioning as a whole”<sup>25</sup>.

Mamardashvili considered as the part of the same attempt the dialogue with the West, Europe and the world where people can see well that the means to live, possibility of human existence is the history. European effort with its historical form is the attempt of self-realization of a human. In this view, the Renaissance (a phenomenon that is marked by the capital letters in Indo-European languages) is the basis of modernity for Georgian thinkers, “history as a means of life. It can revive and on this basis create civil society”<sup>26</sup>.

According to Mamardashvili, continuity of Renaissance consists of re-born irreversible two elements of its [Renaissance] own period: “The first element is the Greco-Roman world, social or civil idea [...] The second element is the Gospel; it is in the person like the idea, that one which is called an inner voice or word”<sup>27</sup>. Therefore, those who do not have a history of perfect system of civil society, must have “the courage and stamina for those efforts”, by the solidity and importance of which are marked European activities - the tireless efforts to implement the perfect, the best.

The style of life and thinking imposed by the regime in the Soviet society inflicted a deep wound on personal dignity of humans; the element of education, cultural reflection, element of rational initiative was exactly the one that was more and more oppressed by the authorities, circumvented it; that is why it could not manage that rational element persistent in the society followed its own development, “but this element existed, as life goes on and as long as life exists no one can kill it: they still will sing the song, write poetry, philosophize, think”<sup>28</sup>. The philosopher Mamardashvili considered as the most important moment the recovery of dignity in the person formed as “Homo Sovieticus” in order to free it from anti social chimeras for on the way of fight for independence everyone, including Georgians, could understand that they need “desoviate” their own thinking and language. “He had in mind to overcome the perverted thinking of “Soviet people“, principal overcome and difficult process of establishment of European civil consciousness”<sup>29</sup>.

<sup>24</sup>See: Merab Mamardashvili, “Living in Accordance with Time”, Translated from French by Dodo Labuchidze-Khoperia, See: “Arili”, September 16, (Tbilisi, 1995), p. 2.

<sup>25</sup>See: Merab Mamardashvili, “European Responsibility”, Translated from French by Dodo Labuchidze-Khoperia, collection: The proceedings of International Scientific Conference dedicated to Merab Mamardashvili’s 80th Anniversary, Editor-compiler: T. Iremadze, Tbilisi, “Nekeri”. 2011. p. 210.

<sup>26</sup>See: Merab Mamardashvili, “European Responsibility”, Translated from French by Dodo Labuchidze-Khoperia, collection: The proceedings of International Scientific Conference dedicated to Merab Mamardashvili’s 80th Anniversary, Editor-compiler: T. Iremadze, Tbilisi, “Nekeri”. 2011. p. 209.

<sup>27</sup>See: *ibid*, p. 208-209.

<sup>28</sup>See: Merab Mamardashvili, “Status of Thinking and Intellectuals”, Translated from French by Dodo Labuchidze-Khoperia, Book: “Topology of Consciousness”, Tbilisi, Georgian Biographical Centre, 2011, p. 203.

<sup>29</sup>Iremadze T., “Philosophy at the Crossroad of Epochsand Cultures”, “Nekeri”, Tbilisi, 2013, p. 127.

Exactly the European culture was the answer for him to the important question: whether it is possible to change the world, whether it is possible that the human being handcuffed, presented and developed chained, could relief from such a situation, could develop, improve, and exercise the infinity – the human ideal - in the imperfect forms of exercise. According to Mamardashili, “The human being is that creature who always is in the position of self-creation and the whole history is the history of the attempt of becoming the human being. The human does not exist, he is being created”<sup>30</sup>. In this light M. Mamardashvili focuses on the rationality of modern thinking. In the beginning of Modern society the knowledge always was defined as power by which is meant that the subject is able to create all of the issues facing the subject; new knowledge as a power, as the non-verbal existence of a person, which is not an abstraction or an idea, but it is the existence, active existence when neither point “is a part of any other whole”. According to Mamardashili’s interpretation, such a definition of knowledge does not make sense that it is utilitarian or owner’s view toward the nature. In fact, by this is meant the following: “Knowledge is what itself contains the power in self or realization as the actual state in rational subject, in the world, [...] the possibility, which in itself contains the self-realization, the power for realization for its own possibilities”<sup>31</sup>.

In this context he refers to Kantian definition of the Enlightenment: “The Enlightenment is man’s emergence from his self-imposed nonage“ i.e. - this is a real ability, the real power of thought itself, endurance without having the outer authorities, the power to move without crutches, without help from others, based on your own legs; the ability that we would no longer need someone stood next to us to lead us, that others did not govern on us [...] and adds: “We are not in this condition of nonage, our existence mainly is similar to the childhood [...] We have never tasted “The Enlightenment” when you have the inner ability to conduct your own self”<sup>32</sup>.

Gaining everything needs learning. At this point Mamardashvili sets the main goal in this way: “Georgians need to work on themselves, expel the ignorance and historical gloom that is accumulated in their character, activities, and knowledge”<sup>33</sup> [...] Our country needs scientists who would be busy with their own less important work as bees and the scientist needs a big courage to become a thinker”<sup>34</sup>. As the essential condition for accomplishing this, Mamardashvili considered the development of the consciousness of responsibility in humans from the early childhood, his establishment as an independent person and acquiring the noblest ability - inner freedom- inspired by the spirituality of his own soul.

## Conclusion

Merab Mamardashili’s cute, critical analysis without any esteems is due to a desire for the better future of Georgia, the desire that in the era of globalization Georgian thinking could adequately respond to the challenges of time, that by self-critical attitude could see “what is good and what is bad in us, what was right and what was wrong on the way we passed and in our history. It will be a big step made toward civilization, civil government, to the

---

<sup>30</sup>See: Merab Mamardashvili, “European Responsibility”, Translated from French by Dodo Labuchidze-Khoperia, collection: The proceedings of International Scientific Conference dedicated to Merab Mamardashili’s 80th Anniversary, Editor-compiler: T. Iremadze, Tbilisi, “Nekeri”. 2011. P.211.

<sup>31</sup>See: Merab Mamardashvili, “Status of Thinking and Intellectuals”, Translated from French by Dodo Labuzhidze-Khoperia, Book: “Topology of Consciousness”, Tbilisi, Georgian Biographical Centre, 2011, p. 206.

<sup>32</sup>See: *ibid*, p. 204; 191.

<sup>33</sup>See: Merab Mamardashvili, “Living in Accordance with Time”, Translated from French by Dodo Labuchidze-Khoperia, See: “Arili”, October 12, (Tbilisi, 2000), p. 2.

<sup>34</sup>See: *ibid*.

development [...] Let us be sensitive to the invisible threads that connect us with the world's fate. Our destiny is to come exactly from there.”<sup>35</sup>

In the process of modernizing, desovietization of thinking and formation of civil society, the views developed by the philosopher Merab Mamardashili about the relationship between the individual and society are still valuable and relevant. Today Georgian readers can still find many important views in them.

**References:**

- Iremadze T. “Philosophy at the crossroad of epochs and cultures”. Tbilisi, “Nekeri”, 2013.  
The proceedings of International Scientific Conference dedicated to M. Mamardashili’s 80th Anniversary, Editor-compiler: T. Iremadze, Tbilisi, “Nekeri”, 2011.  
Mamardashvili M. “Topology of Consciousness”. Tbilisi, Georgian Biographical Centre, 2011.  
The journal “Aryl”, # 14 [159], Tbilisi, 2000.

---

<sup>35</sup>See: *ibid*, p. 9.



## TRIAL OF DEMOCRACY VERSUS DEMOCRATIC TRIUMPHALISM: A FOCUS ON GHANA

*Dr. Collins Adu-Bempah Brobbey*

Ghana Institute of Journalism (GIJ)/Institute of African Studies (IAS)-University of Ghana

---

### Abstract

The volume of empirical literature on Ghana's democratization is overwhelming. Two contrasting positions have come to dominate the Ghanaian democratization political discourses. While some Afro-optimist scholars argue that Ghana is the model of democracy in Africa and hence it is in the era of democratic triumphalism, on the contrary, other Afro-pessimist scholars contend that Ghana has since independence been experiencing a complex and contradictory historical legacy of democratic governance - where liberalism exists side by side with patronage politics and hence it is still in the era of trial of democracy. The goal of this paper is to investigate how Ghana's democratic governance exists side by side with widespread cronyism and nepotism. The data for this paper came from scholarly articles, newspaper reports, and in-depth interviews.. This paper draws a number of conclusions. First, on the theoretical level, Ghana has a beacon of democratic rule and hence it is a model of Africa's democracy. Second, empirically, the country's relative electoral democratic success story is largely cosmetic due to pervasive cronyism and nepotism which impede active civic political participation. It thus, recommends institutional reforms not only to promote domestication and socialization of democratic norms, culture and values but also making it internalizeable and enforceable.

---

**Keywords:** Democratic Triumphalism, Trial of Democracy, Cronyism, Nepotism, Cosmetic Democratic Gains

### Introduction

As with many countries in Africa or elsewhere in the developing world in general and Ghana in particular, persistent militarism and military adventurism resulted in the interplay of democratic and authoritarian regimes coupled with constant regime changes in Ghana's geopolitics in the mid-1960s to the late 1980s (Hutchful, 1989; Fobih, 2011). As it is to be expected, from the 1960s to the late 1980s, Ghana's democracy underwent series of chequered transformation processes. Ghana has since the mid-1960s been experiencing a contradictory historical legacy of democratic governance (van de Walle, 2005; Abdulai, 2009). However, the shift at the turn of the 21<sup>st</sup> century in the development paradigm and policies of the donor countries including the United States and the Bretton-Woods Institutions changed the political dynamics in many African countries of which Ghana is no exception - from the dominance of authoritarian informal or personal rule to the reestablishment of fledgling multiparty democracies (Akwetey, 2005; van de Walle, 2005). Despite the uneven trends in the development of democracy, a few of many "Third-wave" democracies<sup>36</sup> in Africa including Ghana have been striving hard to sustain and consolidate their democracies (Ayee, 2001).

---

<sup>36</sup> Some African countries that are said to have made relative electoral democratic gains include, Botswana, Mauritius, South Africa, Cape Verde and of course, Ghana, among other relatively successful emerging democracies.

This paper argues that Ghana has made relatively significant progress in deepening its electoral democratic process since the 1992 democratic transition and this is exemplified by the 2000 and 2008 democratic turnovers. However, some major democratic deficiencies still remain in the customization and socialization of democratic norms as well as institutionalization of its electoral process (Fobih, 2012; Bratton, 1998). These deficiencies which constitute though far from exclusive, the crux of the country's democratic construction and constancy have not been adequately examined empirically by academics and policy-makers. This paper therefore explores and analyzes the challenges of socializing, customizing and institutionalizing democratic norms and values in Ghana's hybrid - democratic system (van de Walle, 2005).

The broad narrative of this paper consists of five sections. Following the introduction, it focuses on contradictory debates on Ghana's electoral democratic success story under the Fourth Republic, with regard to the reemergence of the 1992 multi-party constitutional rule. The third section explores some of the issues that continue to pose major challenges to socialization and customization of democratic norms and values in Ghana. The fourth section deals with methods of information gathering, summary of findings and discussions and follows with the fifth section which deals with conclusion and then suggested institutional frameworks for addressing the challenges of electoral democratic construction.

### **Ghana's Electoral Democratic Success Story: Contradictory Debates**

The volume of empirical literature on Ghana's democratization is overwhelming (Gyimah-Boadi, 1994; 1999; 2001; 1999; 2009; Ninsin, 2006). Scholars such as Haynes (2003) and Joseph (1998) argue that the internal socio-economic and political disorders coupled with disproportionate rate of public outcries and according to van de Walle (2005), the attaching of foreign aid and grants to democracy by the international donors augmented the domestic pressures on most African governments including Ghana to trigger political reforms. Generally, optimism among Ghanaians grew as a result of the restoration of constitutional rule (Abdulai, 2009) and this assertion is confirmed by Gyimah-Boadi (2001) who notes that the return to constitutional rule in 1992 has given impetus to rating Ghana highly on some basic measures of democratic credentials including protection of fundamental civil liberties, human rights and media pluralism among other democratic outcomes. To buttress his point, Abdulai and Crawford (2008), Lindberg and Morrison (2008) and Daddieh (2011) confirm that, there have been periodic electoral democratic gains in Ghana. For instance, Abdulai and Crawford (2008) support Ghana's periodic electoral democratic success story by indicating that Ghana has not only successfully conducted five free and fair general elections but also credited with five successful district elections.

Two contrasting positions have therefore come to dominate the discourses on Ghana's democratization processes. While some Afro-optimist scholars such as (Abdulai, 2009; Lindberg and Morrison, 2008; Daddieh, 2011) argue that Ghana is the model of democracy in Africa and hence it is in the era of democratic triumphalism, on the contrary, other Afro-pessimist scholars including (Bratton and van de Walle, 1997; Haynes, 2003; Jockers et al., 2010) contend that Ghana has since independence been experiencing a complex and contradictory historical legacy of democratic governance such that liberalism co-exists with patronage politics and hence it has not only been experimenting with democracy but also unable to construct and maintain credible democratic institutions and hence it is still in the era of trial of democracy. The new sociopolitical matrix being promoted in some countries in Africa including Ghana, which were previously dominated by authoritarian regimes, has led to the emergence or strengthening of opposition parties in order to challenge incumbent governments (Gyimah-Boadi, 2001; Yagboyaju, 2011; Keith and Lindberg, 2011). Hence the

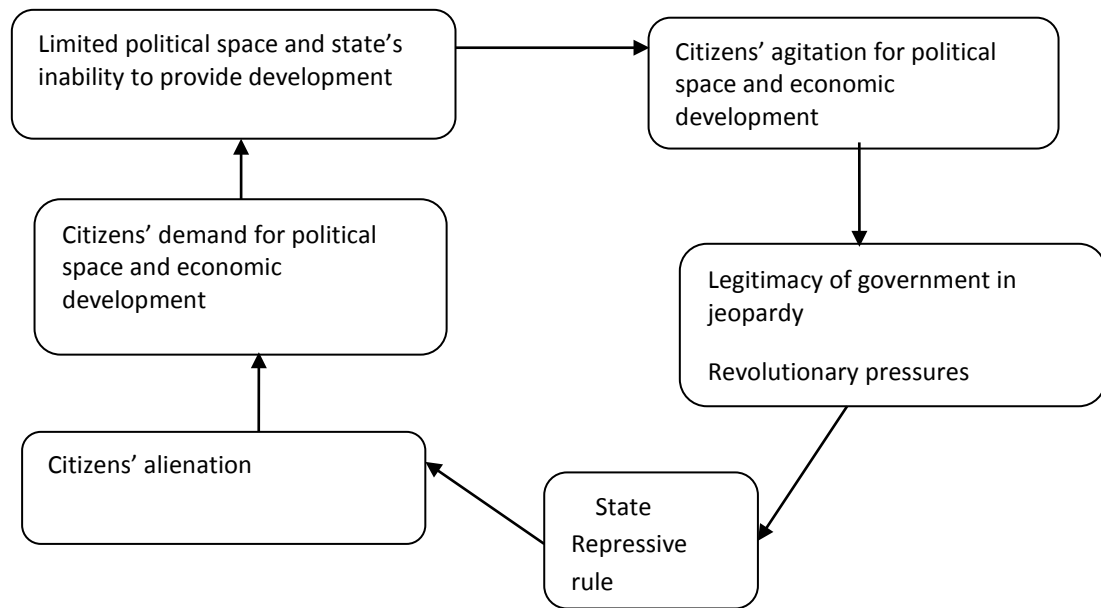
drive towards electoral politics is a significant step in the direction of promoting democratic governance in many African countries of which Ghana is no exception.

Ghana's democratic experience has been relatively stable though (Gyimah-Boadi, 2001), merely holding frequent elections do not necessarily mean it has consolidated her democracy (Haynes, 2003). Pervasive electoral manipulations coupled with political tension and acrimonies (for instance, Ghana's 2012 elections petitions that lasted for over eight (8) months in 2013) give impression that Ghana's Fourth Republic is in an era of trial of democracy rather than democratic triumphalism (van de Walle, 2005; Haynes, 2003). Democratization of state institutions and its politics in Ghana have failed to counteract the negative tendencies of patronage politics and its practice and rather led further to amplification of patronage politics (van de Walle, 2005; Lindberg, 2003). Pervasive patronage politics in itself is not only antithetical to democratic rule but also, has high propensity to propel political and social exclusivity and disorders and in so doing, it derails the process of deepening democracy and hence it tends to prevent democracy from consolidating itself (Bratton and van de Walle 1997; deGrassi, 2008).

A cursory analysis of the history of democracy in Ghana turns to prejudice the thinking towards democratic survivability in the country. According to Abdulai (2009), Ghana's democratic practice since the mid -1960s has gone through chequered experiences. Hutchful (1989) and Luckham (1985) note that democratic rule in Ghana between 1960 and 1992 was interspersed with military rule. Morrison (2004) and Abdulai (2009) attest to this fact by arguing that within the first two decades of the post-colonial Ghana, the country had experienced chequered multiple democratic governance. Consequently, Ghana was plunged into a decade of not only a military authoritarian rule but also a sturdy repressive rule characterized by a "culture of silence," intimidation, human rights abuses and, worse of all, constant fear of 'political assassination' and indeed, 'real assassinations' (Oquaye, 2001; Abdulai, 2009). Abdulai (2009) maintains that this oppressive rule coalesced with exclusivity turned to produce socio-economic disorders, political tension and general insecurity.

Chabal and Daloz (1999) theorize the outcome of such an appealing political conditions in Africa in general as characterized by i) an informalization of politics (i.e. Africa's political system is not actually institutionalized because of pervasive personal rule and prevailing vertical links between patron and client, purposely and profitably holding in sway democratic norms and values), ii) productivity of economic failures (Africa's inability to develop due to dubious policy choices and external constraints constitute the logical outcome of a singular dynamic by which patrimonial networks are entrenched at the expense of the continent's economic growth) as well as iii) re-traditionalization of society (the resurgence of ethnicity, witchcraft and other cultural traits in Africa, an indication of the continent's move backward or evidence of its multi-faceted path to modernization). Chabal and Daloz (1999) conclude that collectively, these elements spur pervasive political acrimonies or what they called political instrumentalization of disorders. Similarly, Chazan (1993; 1998:2) summarizes these political developments in Africa succinctly as "political disengagement" or "political recession." Some decades of deepening 'political disengagement' or 'political recession' and economic exclusivity resulted in cycle of repressive governance and politico-economic alienation and hence the public tended to decry what they perceived to be "governmental illegitimacy" (Brobbe, 2009) (See fig.1).

Fig. 1 Vicious Cycle of Repressive Rule- Citizens' Alienation and Legitimacy Crisis in Ghana



As a result, Ghana over the years has been experiencing a crisis of legitimacy (Aidoo, 2008; Brobbey, 2009; Abdulai 2009). As fig 1 shows, Ghana's Fourth Republic has since been suffering from crisis of legitimacy. This is as a result of an absence of countervailing authority to hold the excessive powers of the presidency in check. Worse still, the Articles 70(1a-e and 2), 74(1), 78(1), 79(1), 86(2,I and vi), 89(2a,i-iii and 2d), 144(1-5) among others of Ghana's 1992 Constitution endorse winner-take-all system and also guarantee the presidency gargantuan powers not only to control both political power and economic resources but also antagonize the oppositions and invariably exclude them from national governance. This winner-take-all system coupled with economic marginalization and state's inability to ensure development accordingly lead Ghanaians to agitate for political inclusion and economic assimilation. Often government's failure to open up the political space to include the oppositions coalesced with masses' economic alienation further compel the citizens to question the legitimacy of the government. Thus persistent political exclusion and economic marginalization coupled with repressive governance give impetus to further questioning the governmental legitimacy and hence a vicious cycle of repressive rule and legitimacy crisis (jeopardy). Indeed, the level of legitimacy jeopardy is inconsistent with the generally held view that Ghana is a beacon of democracy and a model in the African continent.

Ghana's experiment with the winner-take-all electoral politics after over two decades has given impetus to hotly and contested debates. The two overly emerged schools of thoughts include those who hold the view that 'winner-take-all' politics in the Ghanaian body politic has not been helpful due to its inherent 'politics of exclusivity' and economic marginalization (Ala-Adjetey, 2005; IEA, 2013). The other group maintains that it is a good practice because it makes governance easy and therefore must be maintained. The point of departure of this paper is that the pro winner-take-all group focuses exclusively on the governability and rather glosses over legitimacy and the degree of autonomy (an all-inclusiveness).

Empirical evidence, contrary to both the anti and pro winner-take all, revealed that "the challenge of Ghana's governance structure does not only reflect winner-take-all system per se (albeit its extensive criticisms as promoting zero sum power struggle, hyper-aggressive way of winning power or winning power by all means) but also unacceptable political culture

and attitudes of politicians in particular and most Ghanaians in general.”<sup>37</sup> Further evidence revealed that “Ghanaians would not be so bothered about who rules, reigns or governs the country proviso the individuals can be better-off or well-off in a given conducive economy (in which businesses could thrive, ensure economic boom, political stability etc.) and that rather, it is imperative to initiate political culture and attitudinal reforms.”<sup>38</sup> In a similar interview, it was revealed that “politicians do not only seek power to amass wealth but also to promote patronage politics at the exclusion of the opposition and non-party acolytes.”<sup>39</sup> In view of this, “there is the need to address the issues of corrupt practices and selfish interested politics that have become pervasive among politicians and the electorate alike.”<sup>40</sup> “A major blame should rather be heaped on the ill-manner at which politicians conduct themselves in the electoral processes.” In fact, this paper shares this view and maintains that the general conduct of Ghanaians is often very detrimental to healthy democratic practice. Admittedly, the bad attitudes of politicians often play down the political culture, norms and values in the Ghanaian body politic.

Meanwhile, an analysis of the process of democratic consolidation in Ghana reveals that all is not well (Haynes, 2003; Van de Walle, 2005). The erratic nature of the process of democratic consolidation as the evidence in this paper confirms, has generated an interesting contending and contradictory debate. While Jockers *et al.* (2010) hold the view that Ghana’s democratic consolidation is a “convenient myth” and conclude that Ghana’s democratic system is rather not ingrained and not consolidating, a view which does sound like a repetition of van de Walle’s (2005) position that democracy in Ghana is “merely surviving” and not consolidating, also seems to conflict with others such as Lindberg and Morrison’s (2008) who argue that democracy in Ghana is consolidating because it exhibits signs of “matured” democracy.

The Afro-pessimist scholars argue that the sudden democratic reversals in some parts of Africa such as the political assassination of President Melchior Ndudaye of Burundi in 1993 after only four months in office, the military putsch that overthrew the democratically and constitutionally elected President of the Gambia in 1994, the coup that almost destabilized the Republic of Togo in the immediate post-Eyadema era and recently, the political turbulence in Mali among other political upheavals<sup>41</sup> in other parts of Africa are sufficient evidence of the disruptive potentialities inherent in Africa’s latest efforts at democratization. Thus, enduring patronage networks politics is indeed, an antithetical to the process of consolidating democracy in Ghana (deGrassi, 2008; van de Walle, 2005). Institutionalization of patronage politics has, and continues to hold sway in the democratization of state institutions and its politics and hence democratic experience in Ghana presents an impressive façade.

Given the controversy over the process of democratic consolidation in Ghana, the position of this paper is that widespread patronage proclivities though far from exclusive, constitute the difficult and daunting task which impedes the process of consolidating democracy. Thus, an all important question which one needs to ponder and reflect is how precisely or exactly does it impede it or to what extent does patronage politics constitute an impediment to the process of deepening democracy in Ghana? The point of departure of this

---

<sup>37</sup>An interview with Dr. Samuel Bekoe, the President of UTAG during the consultation on the issue of winner-takes-all interaction organized by Institute of Economic Affairs (IEA), IEA’s Conference Hall, Accra, July 14, 2014.

<sup>38</sup> *ibid*

<sup>39</sup> *ibid*

<sup>40</sup> *ibid*

<sup>41</sup>Other political upheavals include, the usurpation of power by the military in Madagascar and the Republic of Guinea, political violence in Kenya and recently, the coup d’état in Egypt.

paper is that multiple factors, complex and contradictory in nature simultaneously spur and negate democratic constancy. Out of these factors, patronage politics bears an inordinate (holding all other factors constant) responsibility. In what follows this paper explores and analyzes the multiple factors that pose ominous challenges to Ghana's electoral democratic construction, constancy and the socialization and customization of democratic norms and values in the Ghanaian body politic.

### **Challenges of Socializing and Customizing Democratic Norms and Values in Ghana**

The idea of the system of democracy under either a parliamentary or presidential system of government is associated with elections, because an election is indispensable mechanism in promoting democratic governance in contemporary democracies (Frempong, 2011). In the discussion of the importance of elections in the process of democratic consolidation, Huntington (1991) noted that, 'elections are inevitable aspects of democracy so democracy is unthinkable without elections.' Elections play a critical role in democratic development and consolidation in both advanced and emerging democracies across the world and constitute an integral part of contemporary democratic practice (Frempong, 2011).

Some objectives very central to elections include serving as the springboard for members to compete for votes and power, and controlling policy-making in the state. Winning elections helps to form a government and to contribute effectively towards shaping public policy by generating reliable information for the public, raising the electorate's political awareness and promoting government accountability (Agyeman-Duah, 2005). Elections also serve as a means by which members are offered opportunities to exercise their franchise to seat or unseat presidential candidates as well as members of the legislative bodies (Frempong, 2011). While the citizens of Ghana under the Fourth Republic have taken some important steps toward promoting democracy and made significant inroads in sustaining the country's democracy, as well as developing its electoral system in the post-transition era, it continues to face a number of institutional and behavioural challenges (Fobih, 2011; Brobbey, 2009). The findings in the study highlight some of the fundamental challenges facing the electoral process and the consolidation of democracy in Ghana, which require the effort of politicians, government officials and institutions as well as the entire citizenry to find better solutions to these problems.

To begin with, one of the central issues that obstruct electoral politics in Ghana is widespread patronage politics characterized the democratic procedures at the level of primaries, districts and general elections (Lindberg, 2003; van de Walle, 2005; Fobih, 2011). Widespread patronage politics characterizes party membership drives and all levels of elections constitute some of the central issues in Ghana's electoral politics (Frempong, 2011; Fobih, 2011). The electoral campaign platforms of political parties and community and individual voter electoral decisions are guided by patronage. Parties in Ghana solicit support and membership by offering promises of petty patronage incentives and future development programmes to communities. Donations made to communities come along with the political message and are indirectly intended to offer the politicians the opportunity to promote their party's interests at such community gatherings<sup>42</sup>. This inducement often influence would-be members or guide voters in their decision to support one party over another (Frempong, 2011).

As Ninsin (2006) noted, through this kind of relationship, voters create opportunities for their communities' improvement both by soliciting development programmes and simultaneously trying to achieve the maximum material gains to improve their living conditions. Likewise, according to Anthony Downs (1957), as rationale beings who sought to

---

<sup>42</sup> The Western Regional Secretary of the NDC noted in 2005 campaign platform (See Fobih, 2011).

maximize their utility, voters choose a party or a candidate on the basis of the benefits that were likely to accrue to them when that party or candidate took over the reins of power. Downs (1957) presents a rational calculus of voting that has inspired much of the later work on voting and turnout. Particularly significant was his conclusion that a rational voter should almost never bother to vote. This conclusion, especially as elaborated on by Riker and Ordeshook (1968) has shifted the attention of modern political scientists from explaining why people don't vote to explaining why they do though. Downs(1957) notes that the “swing electorate” are generally located in the middle of the political spectrum, so obviously politicians would spend an inordinate amount of time and resources trying to woo these so-called independent or what he calls the ‘median voters’ or ‘persuadable voters.’ On the contrary, this paper finds this assertion too generalized and fallacious in that how could politicians be very sure that all the electorate who receive incentive actually vote for them. The available empirical evidence has been that some electorate in some circumstances, are made to swear an oath of loyalty in exchange for electoral incentives<sup>43</sup>. However, this act is not often prevalent in all other constituencies.<sup>44</sup>

Meeting a community’s socioeconomic needs boosts the community’s confidence in that party to meet its collective interest. It is also a way of forging a new social contract with an elected government, which means benefiting from the distribution of development projects and patronage to groups and individuals (Lindberg, 2003). Due to patronage in Ghana’s party system, voters’ choice of candidates or parties is very often guided by the view that the candidates or parties should serve as a link between them and the state in the distribution or allocation of financial and material resources (Lindberg, 2003). In this regard, it does not only create a linkage between one’s willingness to support a party and its candidates, and the expectation of reward in the form of development projects and other resources for the community, after winning the election but also lead to collective political behaviour (for example, voting in Ashanti (NPP’s stronghold) and in Volta (NDC’s stronghold) has always been reflecting “block voting” (Jockers *et al.* 2010).

While some patronage practices, such as meeting community development needs, may be acceptable in political competition and even occur in the advanced democracies, other strategies used by parties in Ghana to induce prospective members and win votes during elections are unacceptable and give rise to clientelism(Fobih, 2011). Personalities and clientelist networks predominate in Ghana’s party system, since some politicians and public officials regard politics and public office as a means to personal enrichment at the expense of public interests, and use state power and resources to cultivate political loyalties largely on the basis of ethnic and regional solidarity (Joseph, 1998). Some party leaders at the constituency level claim that the party leaders at the national and regional levels control power and resources, and distribute patronage to the members at the grassroots, constituency and unit levels (Joseph, 1998). For example, at the constituency and unit levels, there is a strong presence of patron–client relationships between the party leaders and the grassroots members (van de Walle, 2005).

Whereas parties and their candidates ‘grease the electorates’ palm’ to gain their support and votes, the majority of the electorate in Ghana also believe that ‘pulling the right strings and knocking on the right doors’ by supporting a winning party could offer them benefits in the form of jobs, material gains and other favours for themselves and their communities, which they believe serve as a trade-off for their votes (Lindberg, 2003; van de Walle, 2005). It is therefore common knowledge in Ghanaian politics that some candidates and parties offer financial and material incentives in the form of bribes to potential individual

<sup>43</sup>An interview with some constituency members of the ruling National Democratic Congress (NDC) Madina, a Sub-burb of Accra, Ghana prior to 2012 general elections

<sup>44</sup>Ibid.

voters and supporters, ranging from money, clothes and sewing machines, to other material goods (Lindberg, 2003; Fobih, 2011) or in the form of what this paper refers to as ‘social massage.’

Due to the patron–client relationship between the party’s elites and the grassroots members, membership in Ghana’s political parties is categorized into two main classes, namely the ‘Big Men and Small Boys’ (Nugent, 1996). Indeed, some of the so-called ‘Big Men’ who constitute the leadership and wealthy members of the party sometimes enter politics to acquire wealth and/or increase their wealth in order to enable them to play key roles within the party (Nugent, 1996). This act indeed, has led some scholars to conclude that elections feed patronage politics or counteract it (Lindberg, 2003; van de Walle, 2005). This paper argues that elections invariably ‘grease the wheel of progress.’ And hence Bayart (1993) has associated those politicians with self-centered and greed politics and thus concludes that they engage in what he calls the ‘politics of the belly.’

In the meantime, Clapham (1985) notes in his discussion of African politics that patron–client relationship is fundamentally a one of exchange in which a superior (patron) provides financial and material support to the inferior (the client), and the client, in turn, provides support for the patron. The base of this is an unequal relationship between patrons and clients, and the benefits accruing to each of them from the exchange may be uneven (Clapham, 1985). The ‘Big Men’ distribute part of their financial and material acquisitions in the form of social benefits to the lower classes, who have been termed ‘Small Boys’ and who are more or less uneducated, poor grassroots supporters, mostly in rural, but also in urban areas, in exchange for political rights (Lindberg, 2003: 2010; Nugent, 1996).

In this way, power is concentrated in the hands of the ‘Big Men’ and the members in the lower ranks of the party not only serve the interest of the leaders, but also have a limited chance of upward mobility in the parties’ leadership (Nugent, 1996). As Fox (1994) rightly noted, clientelism is a form of social and political control. Hence political parties and some voters see patron–client relations as an exchange of favours between the parties and the electorate as some people are co-opted by the parties through various forms of patronage (Fobih, 2011).

During the Rawlings’ NDC era, contracts were awarded to individuals ‘not for reason of professional competence, but political partisanship’, and contractors perceived to be members of the opposition parties were victimized (Fobih, 2011). While bribery in elections is a crime and is seriously monitored in many advanced democracies, in Ghana this practice has so permeated the party system that the party leaders and supporters do not see anything wrong with patron–client relations (van de Walle, 2005).

### **Methods, Summary of Findings and Discussions**

The data for this paper came from books, scholarly articles from peer review journals, magazines and newspaper reports. A semi-structured intellectual elite interview (productive Dialogue) was utilized in information gathering in respect of qualitative primary data as well as patronage analytical framework was deployed. Using purposive sampling technique, this paper investigated the politics of Ghana’s democratic stability in the light of widespread cronyism and nepotism. Findings of this paper are two-fold, theoretical and empirical.

Theoretically, it revealed that patronage politics is not only so widespread than academics have acknowledged but also Ghana has a contradictory historical legacy of democratic governance. Both liberalism and patronage politics do not only co-exist but also interwoven. This however, makes it difficult to distinguish what is socially considered a gift from political inducement. While liberalism promotes debates and dissenting views, patronage politics engenders sycophancy, corrupt practices and disenfranchises the electorate. As already indicated, after over two decades of re-democratization patronage politics and



liberalism do not only exist side by side but also patronage politics is much more pervasive than liberalism. The simultaneous existence of patronage politics and issue-based politics tend to obscure the deepening of democracy and its constancy. Suffice to say that patronage politics is a global phenomenon, the extent to which it is embraced in the Ghanaian body politic needs much to be desired. It is associated with corrupt practice though it is not illegal and as such does not receive social censure. It is publicly circumscribed but privately resorted to. Consequently, Ghana has since the inception of 1992 multiparty democracy been experiencing chequered periods of democracy and policy shorttermism.

Empirically, it revealed that “Ghanaians are practicing what Akan people call “Kabi na menkabi amanbuo” to wit “freedom of speech” or for want of better expression “No Action Talking Only (NATO) democracy.” Patronage politics is much more entrenched than has been acknowledged by academics or researchers. A clear case of patronage political entrenchment was well articulated by one of my respondents as follows: “this network you are talking about has a historical antecedent, our forefathers, fathers and even contemporaries deploy it as a social network mechanism for not only strengthening national integration but also serve as a foundation for social capital development.” He added, “apart from serving as ‘interim social relief,’ it also ensures redistribution of state resources.” Another respondent indicated that: “In Ghana today, you may find it extremely difficult to get a job, secure contract, appointments or even gets admission if you do not know any big man” and/or, if the big man does not know you.” “In absence of a ‘connection’ or ‘networks’, nothing really works!” Several of such responses have been encountered in the field. It is instructive to point out that, a number of popular Akan adages including for instance; “Ebi she w’anomu a ena wotobi a ebene” to wit “A bird in hand worth two in the bush;” “Ketewa bi ara nswa” meaning “Little mercy also deserve appreciation,” indeed, reinforce the entrenchment of patronage politics in the Ghanaian body politic. An overwhelming majority of the respondents interestingly, claimed that they often receive “the fair share of the national cake through the distribution of resources by the politicians and therefore they find nothing wrong with that.” This indeed, corroborated Lindberg’s (2003) earlier study which argues that “‘It’s our time to Chop”:

The entrenched patronage politics therefore distorts the process of electoral democratic institutionalization (especially, through buying of votes, (Bratton, 2008). Indeed, these findings are inconsistent with Lindberg and Morrison (2008) who claim that Ghanaian voters often vote on the basis of an evaluative –rationale (previous performance) rather than on non-evaluative-rationale basis (such as buying of votes).

Since the inception of multiparty democratic politics, the Ashanti Region<sup>45</sup> still remains the stronghold of the NPP, while the Volta Region<sup>46</sup> also remains the stronghold of the NDC. Ironically, neither NPP nor NDC has ever won elections (in the case of presidential) when put all votes in their strongholds alone together.<sup>47</sup> However, it is only recently that NPP and NDC made some inroads regarding obtaining some votes (albeit insignificant) from Volta and Ashanti regions respectively. Leading members of the two parties attested to the fact that “the political divide is so entrenched to the extent that even if a “tree’ is covered with NPP’s party colours to contest an election with NDC candidate (albeit popular supports and better social standing) in the Ashanti region, the NDC candidate is destined to experience a humiliating defeat.” Similarly, if a “stone” is covered with NDC’s party colours and to contest an election with NPP candidate (albeit popular supports and high

<sup>45</sup>Bantama, a suburb of Kumasi, the capital of Ashanti Region is considered “the World Bank” of the NPP, Daily Guide September, 2012.

<sup>46</sup>Ketu South, a suburb of Ho, the capital of Volta Region is also noted to be “the Florida” of the NDC, Daily Guide September, 2012,

<sup>47</sup>Morrison, M. K. C “Political Parties in Ghana through Four Republics:” A Path to Democratic Consolidation’, Comparative Politics. Journal of Democracy.. (2004)

social reputation) in Volta region, the NPP candidate is also no doubt to experience an embarrassing defeat.”<sup>48</sup>

These responses however reaffirm the degree of penetration of both nepotism and cronyism in the Ghanaian body politic.

### Conclusion and Suggestions

On the basis of the findings discussed, this paper draws a number of conclusions. First, on the theoretical level, Ghana is a model of Africa’s democracy though evidence of interwoven of patronage and liberalism reaffirms that Ghana’s democratic politics gives an impressive façade. Besides, patronage politics is not only a complex and a contradictory phenomenon but also versatile, and that theoretical versatility is an asset for the study of a complex phenomenon such as electoral politics in new democracies. Second, empirically, the country’s relative electoral democratic success story is largely cosmetic. Patronage politics serves as electoral incentive/inducement (particularly, for voter turnouts) as well as disenfranchises electorate (i.e. through buying of votes), It is publicly denounced but privately resorted to. It is considered to be corrupt practice even though it is not illegal and hence does not receive any social censure. Finally, the amplification of patronage politics dims active civic political participation, whilst a reduction in patronage politics would promote active civic political participation in Ghana. The path to wholesome practice of democracy can be difficult especially on the African continent.

This paper therefore recommends behavioural reforms which would not only promote domestication and socialization of democratic norms, culture and values but also making it internalizeable and enforceable. The process of democratic consolidation does not only require minimization of the level of patronage politics and promotion of issue-based politics but also building of strong institutions as opposed to ‘strong men.’ After over two decades of Ghana’s practice of liberalism, patron-client networks has been much more pervasive than liberalism and hence policy-makers and stakeholders should find ways to discourage patronage politics. Institutionalization of electoral politics should not only focus on shepherding the process of campaigning but also provide legitimate political contact methods as part of general overhaul of the institutions of democratic elections. With tolerance, innovation, confidence in relevant institutions and willingness to place public interest above individual preference much would be achieved by way of deepening democratic practice. It is hoped that the Ghanaians would deem it necessary to strengthen the relevant institutional structures to consolidate the relative landmarks or gains made so far.

### References:

- Abdulai, A-G. and Crawford, G. (2008) “Consolidating democracy in Ghana: progress and prospects? Publisher Routledge Informa Ltd.
- Agyeman-Duah, B. (2005). “Elections and Electoral Politics in Ghana’s Fourth Republic”, *Critical Perspectives*, 18, July. Accra: Ghana Center for Democratic Development (CDD-Ghana).
- Aidoo, T.M. (2008) “Political Stability in Ghana,” Since the 1992 Re-democratization Wave Sankofa Publishers
- Ake, Claude (2000). *The Feasibility of Democracy in Africa*, Council for the Development of Social Science Research in Africa (CODESRIA), Dakar.
- Ake, Claude (1996). *Democracy and Development in Africa*. Washington, DC: Brookings Institution.
- Akwetey, M. R. (2005). “Foreign Economic Aid: Means and Objectives.” Yale. Review

---

<sup>48</sup> Interviews with chairpersons from two constituencies of the NPP and the NDC in Accra, January 14, 2014

- Ayee, J. R. A. (2001). "The 2000 General Elections and Presidential Run-Off in Ghana: An Overview" in J. R. A. Ayee, ed., *Deepening Democracy in Ghana: The Politics of the 2000 Elections, Vol.1*. Accra: Freedom Publications, pp. 23-55.
- Bayart J-F (1993). *The State in Africa: Politics of the Belly*. London: Longman.
- Boafo-Arthur, K. (2006). "The 2004 General Elections: An Overview", in Boafo-Arthur, ed., *Voting for Democracy in Ghana: The 2004 Elections in Perspective, Vol. 1*. Accra: Freedom Publications, pp. 33-58.
- Bratton, Michael (2008). "Vote Buying and Violence in Nigerian Election Campaigns." *Electoral Studies*, vol. 27, no. 4, pp. 621-632.
- Bratton, Michael. (1998): 'Second Elections in Africa'. *Journal of Democracy* 9, no. 3 51–66.
- Bratton, M. and van de Walle, N. (1994), "Neopatrimonial Regimes and Political Transitions in Africa:" *World Politics*, Vol. 46 No. 4. The Johns Hopkins University Press.
- Bratton, M. and van de Walle, N. (1997). *Democratic Experiments in Africa: Regime Transitions in Comparative Perspective*. Michigan State University Cambridge University Press.
- Brobbeey, C. A-B. (2009) "Exploring Electoral Processes in Ghana," *Voting Behaviour of Ghanaians in Perspective, JOCMAS Vol.1*
- Chabal, P. and Daloz, (1999), *Africa Works: Political Instrumentalization of Disorders* Cambridge, Cambridge University Press.
- Chazan, Naomi. (1983) *An Anatomy of Ghanaian Politics. Managing Political Recession, 1969–1982*. Boulder, CO: Westview.
- Clapham C (1985) *Third World Politics: An Introduction*. London: Croom Helm. Cross W (2004) *Political Parties*. Vancouver: University of British Columbia Press.
- Diamond, L, J. J. Linz and S. M. Lipset ed. (1995). *Politics in Developing Countries: Comparing Experiences with Democracy*. Boulder & London: Lynne Rienner.
- Daddieh, Cyril. K. ( 2011) "Democratic Consolidation without a Second Turnover: Ghana's Remarkable 2004 Elections." in *Elections and Democratization in West Africa: 1990-2009*, Abdoulaye Saine et. al. (eds.). Africa World Press, Trenton, N.J.
- DeGrassi, A. (2008): "Neopatrimonialism" and Agricultural Development in Africa: Contributions and Limitations of a Contested Concept", in: *African Studies Review*, 51 (3),
- Fobih, Nick (2011) "Reforming Ghana's Institutional Framework Challenges to Party Development and Democratic Consolidation: Perspectives". *Journal of Asian and African Studies* <http://jas.sagepub.com/content/46/6/578>
- Downs, Anthony (1957). *An Economic Theory of Democracy*. New York: Harper and Row.
- Fox J (1994) "The difficult transition from clientelism to citizenship." *World Politics* 46(2): 151–184.
- Ghana Web News (2005) *Political Parties Must Nurture Relationship of Constructive Engagement*. Available at: <http://www.ghanaweb.com> (accessed 17 December 2005): 1–3.
- Frempong, K.D.A. (2008) "Innovations in Electoral Politics in Ghana's Fourth Republic: An Analysis" in Ciska Raventos, ed. *Democratic Innovation in the South: Participation and Representation in Asia, Africa and Latin America*, Buenos Aires: CLACSO Books, pp. 189-210].
- Gyimah-Boadi, E. (1990). "Economic Recovery and Politics in the PNDC's Ghana", *Journal of Commonwealth and Comparative Politics*, 27(3): 328-43.
- Gyimah-Boadi, E. (1991). "Notes on Ghana's Current Transition to Constitutional Rule", *Africa Today*, 38(4): 5-17.

- Gyimah-Boadi, E. (1994). "Ghana's Uncertain Political Opening." *Journal of Democracy*, 5(2): 75-86.
- Gyimah-Boadi, E. (1997), "The Challenges ahead, Ghana's Encouraging Elections", *Journal of Democracy*, 8(2): 78-91.
- Gyimah-Boadi, E. (1998). "The Rebirth of African Liberalism". *Journal of Democracy*, 9(2): 18-31.
- Gyimah-Boadi, E. (1999). "Ghana: the challenges of consolidating democracy", in Richard Joseph (ed), *State, conflict and democracy in Africa*. 409-427. London: Lynne Rienner.
- Gyimah-Boadi, E (2001). "The December 2000 Elections and Prospects for Democratic Consolidation", in J. R. A. Ayee, ed., *Deepening Democracy in Ghana: The Politics of the 2000 Elections, Vol.1*. Accra: Freedom Publications, pp. 56-74.
- Gyimah-Boadi, E. (2001), "A Peaceful Turnover in Ghana", *Journal of Democracy*, 12(1): 103-17.
- Gyimah-Boadi, E. (2009a). "Another Step Forward for Ghana", *Journal of Democracy*, 20(2): 138-152.
- Haynes, J. (2003), "The Challenges of Democratic Consolidation in Africa; The Problematic case of Ghana." *Journal of Democracy* XI,
- Huntington, S.P. (1991), "The Third Wave of Democratization in the Twentieth Century." University of Oklahoma Press.
- Hutchful, E. (1989): "Military and Militarism in Africa;" A Research Agenda. Working Paper 3/89 CODESRIA.
- Joseph, R. (1998), "The Democratic States of Africa After 1989: Theoretical and Conceptual Perspective" *Journal of Democracy* IX,
- Keith R. Weghorst and Staffan I. Lindberg (2011): "Effective Opposition Strategies: Collective Goods or Clientelism?" *Democratization*, 18:5, 1193-1214.
- Lindberg, S. I. (2003). "It's our time to Chop": Do elections in Africa feed Neopatrimonialism rather than counteract it? *Democratization*, 10(2): 121-140.
- Lindberg, S. I. (2010). 'What Accountability Pressures do MPs in Africa face and how do they respond? Evidence from Ghana'. *Journal of Modern African Studies*, 48(1): 117-142.
- Lindberg, S. I. and Morrison, M., (2008). "Are African Voters Really Ethnic or Clientelistic?" *Survey Evidence from Ghana: Political Science Quarterly*.
- Luckham, R. (1985) "Militarization in Africa; in SIPRI, *World Armaments and Disarmament*." SIPRI Year book, London Taylor and Francis.
- Morrison, M. K. C. (2004): "Political Parties in Ghana through Four Republics:" A Path to Democratic Consolidation', *Comparative Politics. Journal of Democracy*.
- Ninsin K.A. (2006). "Institutional Development and Democratic Consolidation", in Bofo-Arthur, ed., *Voting for Democracy in Ghana: The 2004 Elections in Perspective, Vol. 1*. Accra: Freedom Publications, pp.59-78.
- William H. Riker and Peter C. Ordeshook (1968). *A Theory of the Calculus of Voting*. University of Rochester. Page 25-42
- Yagboyaju, Dhikru Adewale (2011). "Democratic Consolidation, Fiscal Responsibility and National Development:" An Appraisal of the Fourth Republic. *African Journal of Political Science and International Relations*, Nigeria.
- van de Walle, Nicolas (2005): *The Donors and the State in Africa: How Much Has Changed?*, In: Engel, Ulf; Olsen, Gorm Rye, (eds.), *The African Exception*. London: Ashgate.

## **HISTORY AND MODERNITY OF “AGENCE FRANCE-PRESSE”**

*Khatuna Kacharava, Associate Prof.*  
Grigol Robakidze University, Tbilisi, Georgia

---

### **Abstract**

Agence France-Presse (AFP) is an international French news agency located in Paris. It is the oldest and largest news agency in the world. It is one of four most outstanding agencies together with “Associate Press”, “Reuters” and “Itar-Tass”. Information agencies originated from 1835 when a young French writer and translator Charles-Louis Havas established Agency Havas on the basis of which was established one of the greatest agencies France-Presse. A lot of issues were changed in the strategy of the Agency from the day of its foundation, but in XXI century, the epoch of modern technologies, it faced new challenges and accomplished changes in the sphere of its activities. Top management of Agence France-Presse managed to implement new technologies and become one of the most prestigious agencies in the world.

---

**Keywords:** Agency; Technologies; Media, News; Information

### **Introduction**

**Agence France-Presse (AFP)** is an international French news agency located in Paris. It is the oldest and largest news agency in the world. It is one of four most outstanding agencies together with “Associate Press”, “Reuters” and “Itar-Tass”.

Information agencies originated from 1835 when a young French writer and translator Charles-Louis Havas established Agency Havas. As he felt that interest in international affairs grew among the society of that period (mainly among the representatives of authorities and tradesmen), he quite often translated information from abroad for the French national press. So, in 1825, he established his own company to carry out such work. It was ten years later when he already founded multinational advertising and public relations company “Agency Havas” and provided foreigners with news about France.

Namely Havas inspired his former employees Bernard Wolff and Paul Reuter to follow his steps and establish two other news agencies. In order to reduce overhead and develop the lucrative advertising side of the business, Havas's sons, who had succeeded him in 1852, signed agreements with Reuter and Wolff, giving each news agency an exclusive reporting zone in different parts of Europe. This arrangement lasted until the 1930s, when the invention of short-wave wireless improved and cut communications costs. To help Havas extend the scope of its reporting at a time of great international tension, the French government financed up to 47% of its investments.

Charles-Louis Havas died in Bougival in 1858. He is regarded as a pioneer in the area of advertising.

In 1879, Havas Agency turned into joint-stock company where advertising and news departments functioned independently. The Agence France-Presse (AFP) news agency comes namely from “Havas”.

### **Activates of Agence France-Presse**

In XX century, when new technologies were introduced, the strategy of news was significantly changed. In 1982, the agency began to decentralize its editorial decision-making by setting up the first of its five autonomous regional centres in Hong Kong, then a British Crown colony. Each region has its own budget, administrative director and chief editor.

In the 90s of XX century, media researchers made prognosis that in the beginning of XXI century mobile telephones would predominate in the sphere of transmitting and spreading information. The Agence France-Presse made significant steps to develop this service. In December of 1999, the Agency signed the agreement with “Nokia” – the world's leading mobile phone supplier and a leading supplier of mobile and fixed telecom networks. The Agency started to spread financial, political, economic, sport and other kinds of news in English, French, Portuguese, German and Spanish languages through Internet. A bit later, the Agency started to improve technologies and targeted new markets, such as the satellite broadcasting market with subsidiary PolyCom, a joint venture with France Telecom and the Bourse of Paris.

Notwithstanding the fact that the Agence France-Presse entered the new century, it still remains as a government-chartered public corporation and is controlled by the French government, along with a number of its top media clients. The new General Director Eric Giully, who was appointed on this position in 1999, offered the Parliament to make amendments in the legislation concerning AFP. He wanted to attract more investors and the company be oriented to news in the English language. The proposal was objected by the journalists working in the company. They made Giully withdraw this proposal.

According to the law of 1957, the Agence France-Presse is public corporation though today it is independent from the France Government. The Agency is administered by the Director and the Board which consists of 15 persons. Among them are 8 members from French Press, 2 members are France-Presse personnel, 2 of them are from the state TV and radio and 3 are state representatives. The first one of the state representatives is nominated by the Prime Minister, the second one – by the Minister of Finance and the third – by the Minister of Foreign Affairs.

France-Presse Foundation was established in 2007 which aimed at developing journalism standards throughout the world. The main goal of the Foundation is to prepare journalists of developing countries who will be able to present the most important economic, social and other processes ongoing in their country. One more aim of the Foundation is to raise journalists' awareness what will enable them to identify and report problems their country is facing, such as struggle against poverty, environment protection, lack of available education and employment, etc.

The Foundation also has an attempt to develop Internet Media and multimedia eastern and African journalists to keep up with technological development and become more flexible. In September of 2011, France-Presse assisted Uganda radio, press and television to establish new website.

Alongside with Board, the main managing team consists of three persons:

1. Emmanuel Hoog who is the Chairman and Chief Executive of the Agency France-Presse;
2. Rémi Tomaszewski – Managing Director;
3. Michèle Léridon – Global News Director.

### **Emmanuel Hoog**

Emmanuel Hoog came to the top management of the Agency on April 15, 2009. It was the period when his predecessor was trying to turn France-Presse into state company. Mr. Hoog was against this plan. He suggested that it would be better the terms of Chairman's

authority to last for five years and openly proposed for it. He also wanted to change the composition of the Agency Board of Trustees where press representatives would dominate. Meanwhile he had a desire to specify documentally the relationship existing between the Agence France-Presse and the establishment of France.

Hoog decided to change the economic model of the Agency and significantly increase the number of video reporting during two years. According to the data of September of 2012, the France-Presse was named as the first Agency in the world that provides the audience with high class video reporting. The same year, Hoog created the Agency facebook page.

Hoog also decided to extend the borders of the Agency's activities. He wanted the Agency to comprise African countries, Brazil and India. Besides, he planned the broadcasting to be in Arabic language. Why did he decide on Asia and African regions? He proceeded from the fact that the democracy level was rather low in these countries and media did not seem to be objective. He wished competent and high professional journalists of these countries to provide the audience with real and objective news.

On December 16, in 2010, Emanuel Hoog was elected on the position of Chairman and Chief Executive for the second time.

### **The System of Values**

The personnel of France-Presse are distinguished for professionalism and objectivity who permanently protect the standards of values. Namely because of professionalism the Agency became one of the greatest media magnet in the world. All principles and obligations of the Agency which should be and are strictly followed are placed on the website. These are:

- Truth
- Trust
- Unbiasedness
- Pluralism
- Operability
- Quality
- Objectivity

### **Prizes and Awards**

- Javier Manzano is a freelance photographer for AFP. In 2013, he won the Pulitzer Prize for feature photography. He was awarded this prize for his extraordinary picture, distributed by Agence France-Presse, of two Syrian rebel soldiers tensely guarding their position as beams of light stream through bullet holes in a nearby metal wall.
- On October 14, 2013, journalists of France-Presse were awarded the prize for reporting the Syrian conflict.
- On July 2, 2013, AFP photographer Adrian Dennis won photograph of the year at the press photographer's 2013 competition for his striking image of Thai rider Nina Lamsan Ligon and her horse at the London Olympics. He also won the Sports Folio of the Year and Olympic Folio categories in the competition that rewards the best photographs in the British media.
- On March 14, 2011, Emmanuel Duparcq wan the Albert Londres prize for the information and articles about Pakistan and Afghanistan which he published during one year.
- On April 17, 2012, AFP photograph Massoud Hossaini won the prize, one of the most prestigious in journalism, for his picture of a girl screaming in the aftermath of a suicide attack in Kabul in December of 2011.

## **Innovation**

Nowadays, nobody is surprised with technological novelties used in media, but everything this initially was introduced and used namely by the Agence France-Presse. The project AFP MEDIALAB implemented by the Agency is regarded as the greatest novelty. It aims at spreading news among the audience. The provided information should be trustful, objective and unbiased.

AFP MEDIALAB was established in 2000. Its goal was to develop multimedia centre. Nowadays, its primary objective is to study and analyze new structures and technologies, be more flexible for spreading information, implement excellent media management, be attractive visually and interactive. It is possible to find out the work and activities of AFP MEDIALAB in mobile phones, iPad, iPod and other new technologies.

## **AFP in Figures**

- 200 offices are spread in 150 countries of the world;
- 2600 persons work at Agence France-Presse;
- Among them 80 persons are of different ethnicity.

## **Everyday Life of AFP**

- 5000 stories, 1250 among them are illustrated;
- 3000 photos;
- 200 videos;
- 100 graphic designs.

The Agency transmits information in six languages. They are: French, English, German, Arabic, Spanish and Portuguese. It is very important that sites are made in these languages. The information is identical everywhere and every person knowing these languages can obtain it.

## **Conclusion**

In modern reality, Internet Media and TV are most popular and more emphasis is made on them. The media segment that has great history and huge important in modernity – media agencies “Agence France-Presse”, “Associate Press”, “Reuters” and “Itar-Tass” remain without the proper attention. On the example of Agence France-Presse we can conclude that information agencies that originated from XIX century changed their information strategy time after time and in XXI century, the epoch of modern technologies, they faced new challenges and accomplished changes in the sphere of their activities. Top management of Agence France-Presse managed to implement new technologies and become one of the most prestigious agencies in the world.

## **References:**

- <http://www.britannica.com/EBchecked/topic/8971/Agence-France-Presse-AFP>
- <http://www.worldpressphoto.org/awards/2013/spot-news/javier-manzano?gallery=6096>
- <http://www.afp.com/en/agency/press-releases-newsletter/afp-photographer-adrian-dennis-wins-2013-press-photographers-year-prize>
- <http://www.afp.com/en/agency/press-releases-newsletter/pulitzer-afp-afghan-photographer-massoud-hossaini-wins-award>



## **A PARTICIPANT IN SOCIAL PROTEST. WHO IS HE AND WHY DOES HE PROTEST? AN ATTEMPT AT ANALYSIS**

*Patrycja Lipold, PhD*  
National Defense University, Poland

---

### **Abstract**

According to many studies and popular belief, it is a role of the global civil society, with its variety of actors, to act as an opposition to state which breaks all the rules. Taking state's interests into consideration, lack of any counter-strategy towards growing power of citizens' opposition can be disastrous. Citizens differ entirely from workers in the 19th century and this is what makes their power of opposition so dangerous for state. Today parliamentary democracy is supplemented by participatory democracy - participation of citizens. The problem lies in the fact that, while discouragement is typical for lower classes of society, the reaction of middle class is outrage and society expresses outrage but does not offer any alternatives. This division of the society into the discouraged and the outraged is very dangerous for democracy. Neither society nor modern democracy can exist without trust. Distrustful societies are a barometer for democracy. When everything goes well they form basis of new movements which consequently change into new ideas and projects. It is very difficult to use the potential of society but it is not impossible. Social protest is an inherent part of democracy but without an attempt to channel it, it is very dangerous.

---

**Keywords:** Social protest, participatory democracy

### **Introduction**

Today all social and political identities are formed, to a greater or lesser extent, by the state. Some identities stem from the aspiration of the state to draw certain borders while other are grounded in aspiration to define and control people. Borders are liminal zones within which inhabitants, citizens and states constantly question their roles and nature. Therefore, the identity of borders and people living within them has been changing and multiplying in a way that can be described as "multivocal" and "multilocal" (Rodman 1992) but which is formed, to a certain degree, by structures of the state.<sup>49</sup>

In this day and age globalization has two meanings. A new game has begun where rules and basic terms of a previous game no longer apply, even though they are still referred to. At least, it is very unlikely for the old game to be the only existing game with all its different names: nation state, national industrial society, national capitalism or even national welfare state. Globalization has acted as a spur to the development of a new area of activities and their framework: politics is no longer restrained by borders or states, and as a result, additional players appear, as well as new roles, new resources, unknown rules, new contradictions and conflicts.<sup>50</sup>

---

<sup>49</sup> Hastings Donnan, Thomas M. Wilson. *Granicetożsamości, narodu, państwa (Borders: Frontiers of Identity, Nation and State)*. WUJ: Kraków 2007, page 92.

<sup>50</sup>Ulrich Beck. *Władza i przeciwwładza w epoce globalnej. Nowaekonomiapolitykiświatowej (Power in the Global Age: A New Global Political Economy)*. Scholar: Warszawa 2005, page 23.

According to many studies and popular belief, it is a role of the global civil society, with its variety of actors, to act as an opposition to state which breaks all the rules. Taking state's interests into consideration, lack of any counter-strategy towards growing power of citizens' opposition can be disastrous. Citizens differ entirely from workers in the 19th century and this is what makes their power of opposition so dangerous for state.<sup>51</sup>

### Protests in the 19<sup>th</sup> century

Aversion and hostile atmosphere towards capital were common in the 19th century, especially in textile industry, and what was characteristic of that time, they were directed at machines. In the book "Ziemia Obiecana" (The Promised Land) by Władysław Reymont, which action takes place over 20 years after the protest of weavers in the city of Łódź in Poland, we can read a characteristic conversation between Karol Borowiecki, director in Herman Bucholc's plant at that time, and one of the workers. The worker, worried by gossips about layoffs in the plant, enquires if it is true. Borowiecki confirms: „Tak. Ustawią nowe maszyny, które ty ludzinię potrzebują do obsługi co stare”. (Yes. New machines will be placed which don't need to be operated by so many people as the old ones). Then he adds: „Cóż ja wam poradzę, kiedy maszyna was nie potrzebuje, bo zrobi sama”. (It can't be helped; the new machine doesn't need you because it can do everything itself). Reaction of the upset by their own fate was as follows: „Robotnicy spojrzeli na siebie w milczeniu, niepokój świecił im w oczach, niepokój przedzyciem bez roboty, przedzyciem – Ścierwy, niemaszyny. Psy, psiakrew – szepnęli robotnicy. Kinal z nienawiścią w bok jakiejś maszyny”. (Workers were looking at one another in silence, fear reflecting in their eyes, fear of life without work, fear of poverty. -Scum, not machines).<sup>52</sup>

The rebellion of weavers in Łódź in 1861, whose rage was vented on machines, and the later anger of their future colleagues brings to mind one of the first organised mass movements of workers opposition, that is English Luddites. The Luddites referred to folk culture and carnival convention. They used irony, symbolic violence and black humour. For example they used quasi-legal language to write and publish verdicts of death sentence for machines, they dressed up, wore masks or female clothes, in other words, they drew on well-known forms of folk opposition for inspiration. They referred to Robin Hood and his social crime. Sharewood forest and Robin Hood's cave was their postal address.<sup>53</sup>

The rebellion of weavers is mainly connected with economic reasons. The mop consisting of several thousand people, armed with crowbars, sticks and poles, gathered around 11 p.m. on the then deserted Wodny Rynek square in Łódź, in front of Karol Wilhelm Scheibler's plant. In 1855 Karol Scheibler started the first spinning mill equipped with selfactors and in 1858 built one-storey weaving plant where, as the second manufacturer after Ludwik Geyer, he installed weaving machines (30 of them). Steam engine was applied for propulsion. The weaving plant operated until 22-April 1961. A protest rally took place before direct attack. There were shouts against poverty and exploitation of workers in the plant. Edward Szulc called Scheibler a fraudster claiming that his packs of yarn were lighter by 1.5 pound than they should be. He shouted: „Kto w taki sposób szuka – to może być wielkim panem i mieć dużo warsztatów”. (Who cheats this way can be a big lord and have many workshops). Speakers were quick-tempered. Using their crowbars the mop broke the factory gate and started destroying the weaving plant. Windows were smashed, 28 workshops were broken, wrap threads and transmission belts were torn, ready cloth was cut.

<sup>51</sup>Ibidem, page 28.

<sup>52</sup>Krzysztof Kedziora. *Przeciwko maszynom niesprawiedliwości* [in:] *Bunt, masa, maszyna. Protesty łódzkich tkaczy w kwietniu 1861 roku (Against machines and injustice [in:] Rebellion, mass, machine. Protests of weavers from Łódź in April 1861)*. Łódzkie Towarzystwo Naukowe: Łódź 2011, page 27.

<sup>53</sup>Ibidem, page 29.

The destruction was controlled, so no plunder nor damages took place in the weaver plant. SewerynLiesel and AntoniMatzner were on the top of the committee. When the owner of the plant arrived during riots, weavers felt slightly disconcerted. Scheibler wanted to mollify them by offering beer and vodka but then Matzner shouted: don't accept any food or drink because he may poison you. Devastation was continued. All window panes were smashed and there was an attempt to dismantle the steam engine but, as its aiming device had been broken and steam started getting out, the troublemakers were scared off. When the rebels finally left Scheibler's plant, the crowd gathered again on WodnyRynek square lit by torches. There were speeches, songs were sung, and leaflets were distributed. The march was staged, headed by one of the weavers, Ernest Hanne, with an unfolded flag in his hand. Eventually the mob was dispersed by police and Cossacks. Reinforcements arrived. 120 people were arrested and part of them was sent to prison in Łęczycza while the rest was released on their own recognizance. Some were placed under police supervision. Regular army unit was sent to Łódź. The president promised that public works would be organized, in order to improve economic situation of the poor, and that he would also ask wealthy manufacturers to employ unemployed weavers, particularly those with families. The situation in the city was brought under control but the plague of fires that lasted until mid-September 1861, was linked to revenge of the arrested and their families, especially that there were mainly wealthy foreman's houses and barns that were set on fire.<sup>54</sup>

### Students against the war in Vietnam

Another manifestation of social rebellion was the protest of American students against the war in Vietnam in the 20th century. According to research conducted at 4 universities, the Ivy League was under strong influence of the Republican Party, mainly at Yale and Dartmouth with strong representation of the Democrats at Harvard and Cornell. On the one hand, the students declared themselves pacifists and considered military service as a necessary evil, on the other, they believed there are some reasonable grounds for military action in Vietnam. The young people saw a solution to the conflict in strong leadership, deterring the USSR and in free market, but also in sympathy for citizens of other countries, emphasis of spiritual values and social system planning.<sup>55</sup> Meetings were organized and newspapers were published as protest had peaceful character then. It was the decision of President Johnson from 1965, concerning direct involvement in the war taking place in Vietnam, which increased the political character of the students' movement. Earlier activity was focused more on spreading information than on revolutionary actions, and its main purpose was to investigate society's reaction to the war and whether it could be a ground for wider coalition of reforming circles. Seminars that had been organized since 1965 were not aimed at changing American foreign policy but at expressing delicate but firm opposition against it, based on the premise that the policy's final effect would be a widely spread social aversion towards the war.<sup>56</sup> Initially the students used methods worked out at Berkeley, in particular, organization of seminars, this time not just informative but of more political nature directed at taking anti-war action. It took form of open letters published in press and disclosure of the fact that the Ivy League cooperated with the Department of Defence concerning combat arms program. Within 1966-67 moderate actions were more often

<sup>54</sup> Alina Jabłońska. *Ślady buntu łódzkich tkaczy obecne w dzisiejszej Łodzi – miejsca, ludzie, wydarzenia* [in:] *Bunt, masa, maszyna. Protesty łódzkich tkaczy w kwietniu 1861 roku (Traces of the rebellion of weavers present in contemporary Łódź - places, people, events* [in:] *Rebellion, mass, machine. Protests of weavers from Łódź in April 1861*). Łódzkie Towarzystwo Naukowe: Łódź 2011, pages 32-37.

<sup>55</sup> Włodzimierz Batóg. *Protesty studentów uniwersytetów Ivy League przeciw wojnie wietnamskiej 1965-1970 (The Ivy League students' protests against the war in Vietnam 1965-1970)*. Kielce 2008, page 34.

<sup>56</sup> Ibidem, page 322.

accompanied by the appearance of more radical circles which claimed that the war in Vietnam is the result of American imperialism being an integral part of the political system of the United States. It was the beginning of take-overs and demonstrations against military school and visits of the army representative recruiting on campus students interested in professional army, even against some university departments which analysed socio-economic situation of other countries for the CIA. A student activist movement called Students for a Democratic Society (SDS) was involved in the large number of protest as well as activities all over the world, and thus its role on the political stage in the USA grew significantly that time. A breakthrough moment for protest was the strike at Colombia University in 1968. It was the climax of trends that had been developing for two years - growing frustration of young activists who realised that peaceful protests did not bring expected results. Revolutionary anger was often expressed through acts of vandalism, initially in the Columbia University's din's office, which then paved way for numerous arsons and bomb attacks. Within 1968-69 young activists concentrated, on the one hand, on forcing universities to cease cooperation with all symbols of power which they despised, and on exposing racial issues and persuade universities to change their position towards the black minority, on the other. The period of 1968-69 was the time of violence and public order offence especially at private universities. Demonstrations took part in 70% of American universities and the Ivy League simply confirmed this tendency.<sup>57</sup>

On 27 March 1968 National Council of SDS met in Lexington where it was going to discuss details regarding the agenda of Ten Days of Resistance, although at that time strong divisions in the organisation had already been seen. The peaceful movement had never been so close to achieving its goals than a couple of days after the meeting. On 31 March 1968 President Johnson, in his speech to the nation, declared that bombardment of targets in North Vietnam would be stopped, with exclusion of a demilitarized zone where there was still threat for American and South Vietnamese armies, and he repeated his proposal to begin peace talks. In the final part of his speech the President said: "I shall not seek, and I will not accept, the nomination of my party for another term as your President."<sup>58</sup> Johnson's declaration and a possibility to support McCarthy in the coming elections significantly changed feelings among anti-war student activists and strengthened their believe that the action planned for April was justified and could lead to a presidential nomination and a victory of a candidate who would be truly inclined to end the war in peaceful way. Students' strike was planned on 26 April and around 300 people took part in protest rallies while 40-50 people took part in discussions.<sup>59</sup>

Groups of pacifists from the University of Pennsylvania became more visible in the beginning of March 1968 when demonstrations against the use of napalm were organized. There is no information regarding the number of people taking part in demonstrations, but their organizers signed a joint anti-war declaration. According to the list of signatories, quoted by Daily Pennsylvanian, there were mainly small groups focused on local problems.<sup>60</sup>

In the second half of 1968 the influence of SDS in campuses decreased. In November Richard Nixon won presidential election while the opposition against the war in Vietnam was growing. The war was brought to its end over the course of few years. Since 1969 peace talks with North Vietnamese government had been held in Paris which resulted in signing the Paris Peace Accords in January 1973.

---

<sup>57</sup>Ibidem, pages 322-323.

<sup>58</sup>*Johnson's Says He Won't Run.* „New York Times”, 1 April 1968.

<sup>59</sup>*Students Strike: Spring Weekend.* „Brown Daily Herald” 1968 z 16.04.: Speak –Out on College Green to Climax Strike for Peace.

<sup>60</sup>Włodzimierz Batóg, op.cit., page 80.

## Today's protests

Today's protests, just like it was before, are an expression of rebellion and citizens' involvement in creation of state policy, the form of direct democracy, often used to call attention to the fact that representatives of society, elected in democratic way, distance themselves from the society. Demonstrations are attempts to discipline them and put the policy on the right track, the one that the society desires most. Today mostly men participate in protests; unemployed or having a part-time job, independent professionals, students, teachers, priests and, what is quite surprising, pensioners and retired people.<sup>61</sup> Among today's demonstrators there are no representatives of families with small children where both parents work, as they definitely have no time to take part in social protests. However, when parents take part in protests, they are usually recent school graduates with no perspectives for employment and with pre-school children. The reason behind participation of senior citizens in social protest is free time at their disposal irrespective of their hobbies or interests. Their engagement is also often viewed as an aspiration to continue an active live through the third age.<sup>62</sup> George Bernard Shaw wrote that the elderly are dangerous as they are indifferent towards future.<sup>63</sup> Senior citizens often take part in happenings though they do not march at the head and do not carry flags. Happenings are actually an area of 24-40-year-olds. Online protests are different though, as the main group here are 14-20-year-olds, a very specific young generation which organises new, original forms of protest and political engagement. There is also the group of old-school activists, who oppose capitalism and support radical left, which we saw in the 70s of last century. Less politically engaged, but fitting in the above mentioned groups, are also organizers of protests directed at investment projects in regions of exceptional natural environment - the environmentalists.<sup>64</sup>

Political beliefs of the majority of pensioners and the retired formed in childhood and at young age. Stubbornness in participation, as well as conscious rebellious activity against authorities and the power are not considered proper social model behaviour. The political identity of seniors formed within the 70s through cultural changes, revolts at universities, protests against nuclear energy and mid-range missiles. Experts do not agree as to what motivates senior citizens and what they expect participating in protests. Not all of the experts support the argument that the elderly do not want to be pushed onto the margin of society but instead they want to stay active as long as possible and that way avoid isolation. Those experts believe that the elderly have the right not to be engaged in anything, not to play roles they have played in society and are entitled to rest after all that engagement, as the time has come for "vita contemplativa" (contemplative live) after "vita activa" (active life).<sup>65</sup> However engagement in a protest movement allows them to use their life experience, be active, take initiatives and at the same time enjoy their independence and qualifications. People taking part in today's demonstrations, as oppose to the past, are not only marginalized persons, victims of economic restructuring but also people with steady income and firm social position with active working life. Participants of demonstrations in the 70s were students of sociology and political science, sociology professors, social workers, people from theatre and playwrights.<sup>66</sup> Young users of the Internet are on the right track to become one day similar participant of protests. Participation in protests has become a catalyst of inequality. Today,

---

<sup>61</sup> Franz Walter. *Bürgerlichkeit und Protest in der Misstrauensgesellschaft*, [in:] StineMarg, LargGeiges, Felix Butzlaf, Franz Walter (Hg.). *Die neue Macht der Bürger. Was motiviert die Protestbewegungen?* Rowohlt Verlag GmbH: Hamburg 2013, page 302.

<sup>62</sup> Konrad Gregor. *Und wohinmit unserer Wut, Bürger?* [in:] „Der Standard“ (Wien), 21. November 2011.

<sup>63</sup> Gerhard Matzing mentioned it in the talk with "Tagesanzeiger" (Zürich), 28. Septemeber 2011.

<sup>64</sup> Franz Walter, op.cit, page 305.

<sup>65</sup> Albert Hirschmann. *Engagement und Enttäuschung*. Frankfurt am Main 1984, page 13.

<sup>66</sup> Ibidem, page 312.

participatory democracy does not support civil-social participation but instead increases differences between top and bottom classes of society, deepens social inequality.<sup>67</sup> Engagement in social problems from an early age greatly influences development of a young person. People, who are active and socially engaged early in life, become more self-confident, optimistic and are able to manage and take part in projects. Participation in protests can teach us some useful skills, as protests organizers have to be qualified and talented, be able to create structures of an organization, handle media, speak in public and hold talks with public institutions. In the past mainly men participated in protests but it has been changing now, although professional career and children are main factors behind women's lower engagement in protests.

In a participatory society, which treats protests as an expression of its will, there are often accusations that democracy is only on the surface. This is a typical signal sent by a mistrustful society in which any talks about political parties trigger a torrent of scorn and contempt, as parties are considered a cost-generating mixed bunch of incompetent people unable to do anything. Citizens' engagement is based on knowledge, information, ideals and energy which should be of benefit to the state. When it comes to a critical moment, all these details cannot be ignored in the false hope that a conflict can be solved through peaceful de-escalation. Civil society is also connected with pathological fear and aggression, social and ethnic isolation, cynicism and contempt for democratic process. Number of citizens and their awareness has risen so much that any mistake can provoke citizens' insubordination.

A new form of social protests took place during the recent protests in Ukraine which began in November 2013. The protests broke out with Ukrainian government's decision to pull out of an agreement for closer ties with the European Union and led to the resignation of Mykola Azarov and his government. After these initial political changes, the protesters demanded further political changes and resignation of President Victor Yanukovich. On 30 November 2013 the militia units brutally dispersed the protesters which led to outrage and changed protests into a mass movement. Protests spread across the country while the Independence Square in Kiev was dubbed Euromaidan and changed into a place of permanent protest rallies. The climax of protests took place on 1 December 2013 when the number of protesters in Kiev reached 800 000 people. After that the number fluctuated between 50 000 and 200 000. While in the Western part of the country protesters took over offices of local and government administration, in the East support for similar attempts were limited. Street fights, taking place between 18 and 20 February 2014, resulted in hundreds of casualties and became a turning point for the development of the situation. Under the pressure from the Western countries and a wave of outrage inside the country, President Victor Yanukovich decided to reintroduce the constitution of 2004 and call snap election. On 21 February the militia was removed from the streets of Kiev and Yanukovich left the capital. On 22 February the parliament voted to remove him from his post. The participants of protests in Kiev were people from the middle class, pensioners and the retired. Young people, including students, were more visible in the most dangerous places. They were well prepared, had helmets and masks to protect them from gas. Protests in Ukraine prove that main groups of society taking part in today's demonstrations are senior citizens and young people who use the Internet to communicate and organize themselves. At the same time protests engage the middle class which is the largest social class in almost every state.

---

<sup>67</sup>Ibidem, page 309.

## Conclusion

We can talk about double democracy as parliamentary democracy is supplemented by participatory democracy - participation of citizens.<sup>68</sup> The problem lies in the fact that, while discouragement is typical for lower classes of society, the reaction of middle class is outrage and society expresses outrage but does not offer any alternatives.<sup>69</sup> This division of the society into the discouraged and the outraged is very dangerous for democracy. Neither society nor modern democracy can exist without trust. Distrustful societies are a barometer for democracy. When everything goes well they form basis of new movements which consequently change into new ideas and projects.<sup>70</sup> It is very difficult to use the potential of society but it is not impossible. Social protest is an inherent part of democracy but without an attempt to channel it, it is very dangerous.

## References:

- Albert Hirschmann. *Engagement und Enttäuschung*. Frankfurt am Main 1984.
- Hastings Donnan, Thomas M. Wilson. *Granicetożsamości, narodu, państwa (Borders: Frontiers of Identity, Nation and State)*. WUJ: Kraków 2007.
- Krzysztof Kedziora and others. *Bunt, masa, maszyna. Protesty łódzkich tkaczy w kwietniu 1861 roku (Rebellion, mass, machine. Protests of weavers from Łódź in April 1861)*. Łódzkie Towarzystwo Naukowe: Łódź 2011.
- Stine Marg, Larga Geiges, Felix Butzlaf, Franz Walter (Hg.). *Die neue Macht der Bürger. Was motiviert die Protestbewegungen?* Rowohlt Verlag GmbH: Hamburg 2013.
- Ulrich Beck. *Władza i przeciwwładza w epoce globalnej. Nowa ekonomia polityki światowej (Power in the Global Age: A New Global Political Economy)*. Scholar: Warszawa 2005.
- Włodzimierz Batóg. *Protesty studentów uniwersytetów Ivy League przeciw wojnie wietnamskiej 1965-1970 (The Ivy League students' protests against the war in Vietnam 1965-1970)*. Kielce 2008.

---

<sup>68</sup> Hans Vorländer. *Spiel ohne Bürger*, [in:] „Frankfurter Allgemeine Zeitung“, 11. June 2011.

<sup>69</sup> *Ibidem*, page 335.

<sup>70</sup> *Ibidem*, page 337.

# NEW RUSSIAN IMPERIALISM AND GEORGIA: VIOLENT SPATIAL PRACTICES, DISRUPTED PLACES, AND DESTABILIZED SPACES

*Giorgi Tavadze, PhD*

Grigol Robakidze University, Tbilisi, Georgia

---

## Abstract

Places are necessary prerequisites for human life. Humans always identify themselves with certain places which, in turn, have strong influence on humans' individual and collective identities even when this influence is not explicitly acknowledged. The author of the article argues that Russia's new imperialism rests on systematic violent spatial practices, which disrupt places and destabilize spaces in the neighbouring countries. These violent spatial practices constitute what can be called "colonization of everyday space" which disrupts place-ballet and fundamental feeling of security which humans associate with their everyday places, thereby producing anxiety, fear, and suffering.

---

**Keywords:** Russian imperialism, Georgia, violent spatial practices, disrupted places, destabilized spaces

It is not enough for a hegemonic power to declare an official policy. It must establish it as a new norm of international law by exemplary action.

**Noam Chomsky, *Preventive War, 'The Supreme Crime'***

## Introduction

The annexation of the Crimea by the Russian Federation in March, 2014 (an "exemplary action" to summon up Chomsky's accurate remark) marked a new aggressive wave in Russian imperialism since the Russo-Georgian War of 2008. In the present article, I argue that Russia's new imperialism under the cover of protecting Russia's citizens and civilian population in general, actually (and contrary to the assertions of high-ranking Russian officials and some western pundits) rests on systematic violent spatial practices, which disrupt places and destabilize spaces in the neighbouring countries, thereby, threatening the very object it pretends to defend. In addition to this, I (along with other authors) consider that Russia's new imperialism goes hand in hand with the absence of (organized) civil society in Russia. This can be explained by Russia's internal political turmoils in the early 1990s and by rising authoritarianism, chauvinism, racism and neo-fascism in Russia since the end of the 20<sup>th</sup> century. Combined, these processes have been destroying at the roots almost every incentive aimed at developing stronger civil society in Russia.

I begin my discussion of the topic from the last point. In the interview in 1989, Georgian philosopher Merab Mamardashvili (1930–1990) said that Russia "jumped out of history and committed the metaphysical suicide of trying to bypass reality for the ideal."<sup>71</sup> What exactly did he want to say with this bizarre comment? Close reading of the text reveals

---

<sup>71</sup> "The Civil Society: An Interview With Merab Mamardashvili", <http://car.owu.edu/pdfs/1989-2-3.pdf> (Accessed 07.07.2014).



that he pointed to the absence of civil society in Russia. According to Mamardashvili, the main cause of this absence is the rule of Ivan the Terrible (1530–1584) who is responsible for “destroying” the Russian society. “Nothing was important if it did not coincide with the will of the tsar. The whole society became an elongated shadow of the tsar. But shadows are not real. From that time forward unreality became the condition of social life in Russia.”<sup>72</sup> This conclusion underlies Mamardashvili’s belief that “a long history of Russia had prepared the advent of Marxist-Leninism and Stalinism and the kind of state the Soviet Union has become in the 20<sup>th</sup> century.”<sup>73</sup>

Of course, Mamardashvili’s arguments are metaphysical and difficult (if not impossible) to prove empirically. But one point is clear: he considers that there has been a strong link between the empire-building and suppressing the *Others* in Russia. This is the thread which I intend to follow below.

In his recent work “Putin’s Wars. The Rise of Russia’s New Imperialism”<sup>74</sup> Van Herpen formulates four roots of Russian imperialism: 1. Russia’s geographical position; 2. Russia’s economic system; 3. Russia’s expansionist tradition; 4. A deliberate expansionist policy conducted by the Russian ruling elite.<sup>75</sup> He also pays particular attention to the close connection between “internal despotism” and “external imperialism” in Russia and considers them as “mutually reinforcing processes.”<sup>76</sup>

Both Mamardashvili and Van Herpen emphasize that absence of civil society is inextricably intertwined with internal despotism. From this point of view the perspective of building strong civil society in Russia has rather gloomy future. Recent developments in this country indicate that the state tightens its control over non-governmental organizations under the pretext of “protecting” Russia from outside attempts to interfere in its internal politics.<sup>77</sup>

Of course, it would be naivety to expect that a country with dubious civil rights record will fully respect international law and basic human rights while treating small neighbours. For Russia’s autocratic elite democratic aspirations of its several neighbour countries are a pain in the neck. Therefore, Russia’s imperial spatial practices rely on systematic violence and destabilization of spaces of adjacent countries making Russia in this sense an imperial parasite which feeds itself from the spaces of putrefaction and zones of destabilization. These violent spatial practices which are completely neglectful to cultural differences erode spaces of everyday movement and action<sup>78</sup> and destroy the links which connects places together.

---

<sup>72</sup> Ibid.

<sup>73</sup> Ibid. For Mamardashvili’s thought see also, L. Zakaradze, “Merab Mamardashvili: Perception of European Identity. A Road Towards Self-Awareness”, *European Scientific Journal*, July 2013, Special Edition, pp. 87–96.

<sup>74</sup> M. H. Van Herpen, *Putin’s Wars. The Rise of Russia’s New Imperialism*, Rowman & Littlefield, 2014.

<sup>75</sup> Ibid., p. 15.

<sup>76</sup> Ibid. p. 17 ff. See also M. Galeotti and A. S. Bowen, “Putin’s Empire of the Mind. How Russia’s President Morphed from Realist to Ideologue – and What He will do Next”, *Foreign Policy*, May/June 2014, pp. 16–19. On Russian imperialism see also A. Cohen, *Russian Imperialism. Development and Crisis*, Westport, CT: Praeger Publishers, 1996.

<sup>77</sup> See “Russia: Controversial NGO bill becomes law”, 21.07.2012, <http://www.bbc.com/news/world-europe-18938165>; “Russia NGO law: Election watchdog Golos fined”, 25.04.2013, <http://www.bbc.com/news/world-europe-22291563>; “Russia NGO law: Election watchdog Golos suspended”, 26.06.2013, <http://www.bbc.com/news/world-europe-23070102>; T. Balmforth, “Levada Center, Russia’s Most Respected Pollster, Fears Closure”, 21.05.2013, <http://www.rferl.org/content/russia-levada-center-foreign-agent/24992729.html> (Accessed 07.07.2014).

<sup>78</sup> In the space of everyday movement and action (in short: *everyday space*) humans perform their mundane activities and interact with each other and places. In the context of everyday space the notion of *place-ballet* is especially important. According to D. Seamon, place-ballet is “a fusion of many time-space routines and body-ballets in terms of place” (See D. Seamon, ‘Body-Subject, Time-Space Routines, and Place-Ballets’, in: A. Buttner and D. Seamon (eds.), *The Human Experience of Space and Place*, New York: St. Martin’s Press, 1980, p. 159). “Time-space routine is a set of habitual bodily behaviors which extends through a considerable portion of time” (ibid. p. 158). Body-ballet is “a set of integrated behaviors which sustain a particular task or

Before examining more closely nature and essence of places, I wish to clarify what I mean in term “imperial”. Employing the term “imperial” to denote Russia’s actions against its neighbours I want to emphasize the ambitions of current leadership of Russia to restore the previous glory of the Soviet Empire, albeit in a completely different context in which it is not accepted (especially on a high-ranking international level) to acknowledge empire-building explicitly. In the wake of this, discourses are flourishing which attempt to disguise real processes by introducing such concepts as “spheres of influence”, “strategic interests” (signaling potential threats), “civilian population” (perfect pretext for occupation), “historical truth” (when justifying annexation of a territory of sovereign country) and so on. These discourses and power centres within them operate at all levels of culture (from international talks and mass media to literature,<sup>79</sup> painting, and mundane cultural practices) with ultimate aim to justify destabilization, erosion and occupation of the spaces of neighbouring countries.<sup>80</sup>

---

aim, for instance, washing dishes, plowing, housebuilding, potting, or hunting” (ibid. p. 157). To sum up, it can be said that place-ballet constitutes the *rhythm* or *pulse* of place.

<sup>79</sup> For imperial motives in Russian literature see S. Layton, *Russian Literature and Empire: Conquest of the Caucasus from Pushkin to Tolstoy*, Cambridge: Cambridge University Press, 1994; K. Hokanson, “Literary Imperialism, *Narodnost'* and Pushkin’s Invention of the Caucasus”, *The Russian Review*, 53 (1994), pp. 336–352; H. Ram, *Imperial Sublime. A Russian Poetics of Empire*, Madison, WI: The University of Wisconsin Press, 2003.

<sup>80</sup> For discourses and their meaning see M. Foucault, “The Order of Discourse”, in: Young, R. (ed.), *Untying the Text: A Post-Structuralist Reader*, Boston: Routledge, 1981, pp. 51–77; id., *The Archeology of Knowledge*, Tavistock Publications, 1972. Analysis of these power discourses transcends the aim of the given paper. Nevertheless, I want to consider several examples. In the first case the discourse of empire (quite unfortunately) is hidden in the cloak of objective science. A. Saporov in his article “From Conflict to Autonomy: The Making of the South Ossetian Autonomous Region 1918 –1922” desperately tries to convince the readers that so called South Ossetia Autonomous Region was created by bolsheviks solely with the purpose of “conflict resolution” between Georgians and Ossetians. The obvious bias of the article tends to be obscured by the fact that article is published in peer-reviewed academic journal. When discussing the history of conflict in the region Saporov relies *only* on Russian language sources, most of them published in Soviet times and hardly representing the actual flow of events. By reducing the positions of Georgian scholars to only footnote, thereby rejecting the possibility of taking a more balanced view, he himself renders his account as obsolete and victim to Russian imperial discourse. See A. Saporov, article “From Conflict to Autonomy: The Making of the South Ossetian Autonomous Region 1918 –1922”, *Europe-Asia Studies*, vol. 62 (2010), pp. 99–123. For a more balanced view regarding the Russo-Georgian War of 2008, where the mistakes of Georgian government are also taken into consideration see G. Nodia, “The August 2008 War: Main Consequences for Georgia and its Conflicts”, *Nationalities Papers*, 40 (2012), pp. 721–738. In the second case, two western pundits aiming to illuminate US policymakers and general reader about nuances of internal affairs in the breakaway regions of Georgia, point to the necessity of “building ties to contested regions”. Noticing that “due to an ineffective foreign policy, the United States and its Western allies had no relationship with the faction that precipitated the uprising against Ankvab” (former president of de-facto Republic of Abkhazia), they wisely deduce that “now Abkhazia has seemingly moved even closer to Russia than before”. A perfect example of the working of imperial discourse which has permeated even the online-space of *Foreign Policy!* As if Abkhazia has not *already* been the puppet state of Russia! Such sophisticated and elaborated manner of judgement conceals the very nature of imperial discourse and its violent spatial practices which on the ground is rude, pulverizing and inhumane. For the above-mentioned article see L. Mitchell and A. Cooley, “Learning from Crimea”, 16.06.2014, [http://www.foreignpolicy.com/articles/2014/06/16/learning\\_from\\_crimea](http://www.foreignpolicy.com/articles/2014/06/16/learning_from_crimea) (Accessed 07.07.2014). Recently Russia’s one of the most prominent ultra-nationalist thinker Alexander Dugin has told BBC News that war between Russia and Ukraine “is inevitable” (See D. Newman, “Russian nationalist thinker Dugin sees war with Ukraine”, 10.07.2014, <http://www.bbc.com/news/world-europe-28229785>, Accessed 10.07.2014). Dugin has played crucial role in the developing of imperialistic discourse in Russia. For imperial discourses and Orthodoxy-related geopolitics in Russia see D. Sidorov, “Post-Imperial Third Romes: Resurrections of a Russian Orthodox Geopolitical Metaphor”, *Geopolitics*, 11 (2006), pp. 317–347. Finally, even such an ardent critic of imperialism as Noam Chomsky, overdiligent to demonstrate that the world is threatened *only* by American imperialism, when discussing Russo-Georgian War (2008) declares that: “The basic facts are not seriously in dispute [sic]. South Ossetia, along with the much more significant region of Abkhazia, were

According to American philosopher E. S. Casey, “to be in the world, to be situated at all, is to be in place.”<sup>81</sup> Places are necessary prerequisites for human life. Canadian geographer E. Relph in his brilliant work “Place and Placelessness” remarks that “to be human is to live in a world that is filled with significant places: to be human is to have and to know *your* place.”<sup>82</sup> Humans always identify themselves with certain places which, in turn, have strong influence on humans’ individual and collective identities even when this influence is not explicitly acknowledged. In short, humans and places interact. Humans create and change places and give them new meanings. On the other side, places exert an influence on identity, thought, and action.<sup>83</sup> And “if places are indeed a fundamental aspect of man’s existence in the world, if they are sources of security and identity for individuals and for groups of people, then it is important that the means of experiencing, creating, and maintaining significant places are not lost.”<sup>84</sup>

Violent spatial practices perpetuated by Russia disrupt places and destabilize spaces; they decouple connections between humans and places and produce fractured spaces. First of all, these violent practices disrupt the *space of everyday movement and action* by effective occupation, installing barbed wire fences, building concrete walls and checkpoints. These measures preclude humans’ interactions with places and give rise to anxiety, homelessness and *topophobia* (an aversion for places).<sup>85</sup> In the lines to follow, I will focus on specific instances which demonstrate Russia’s violent spatial practices towards Georgia.

“Occupation is a matter of fact – not of intention or declaration” astutely remarked Derek Gregory.<sup>86</sup> But I want to emphasize the episode from occupation of Georgian territories by Russia which has been largely forgotten by general public and partly concealed by the government of Georgia of that period. During the Second Chechen War, on February 14, 2000 Russia seized the small village Pichvni, near Shatili where Georgians had the main border post. Georgian border troops and local Georgian residents withdrew from the village in order – as Tbilisi officials finally explained on May 16, 2000 – to “avoid a conflict.”<sup>87</sup>

Shatili residents had winter barns in Pichvni which is about six kilometres away. In the wake of Russian occupation Georgian farmers had to abandon their winter hay supplies

---

assigned by Stalin to his native Georgia [sic]. Western leaders sternly admonish that Stalin’s directives must be respected, despite the strong opposition of Ossetians and Abkhazians.” By reducing the world politics to American imperialism (and turning blind eye to other imperial practices) and relying on false facts, Chomsky willy-nilly caters to the Russian imperial ambitions. See N. Chomsky, “Ossetia-Russia-Georgia”, <http://www.chomsky.info/articles/200809--2.htm> (Accessed 07.07.2014).

<sup>81</sup> See E. S. Casey, *Getting Back into Place: Toward a Renewed Understanding of the Place-World*, Bloomington: Indiana University Press, 1993, p. xv.

<sup>82</sup> See E. Relph, *Place and Placelessness*, London: Pion, 1976, p. 1.

<sup>83</sup> See G. Tavadze, *Shatili from the Perspective of Philosophical Geography*, Tbilisi: Nekeri, 2013, p. 103.

<sup>84</sup> See E. Relph, *Place and Placelessness*, p. 6. For the explication of the nature of places, besides Casey’s above-mentioned work, see also J. E. Malpas, *Place and Experience: A Philosophical Topography*, Cambridge: Cambridge University Press, 1999; D. Seamon, “Place, Place Identity, and Phenomenology: A Triadic Interpretation Based on J. G. Benett’s Systematics”, in: H. Casakin and F. Bernardo, *The Role of Place Identity in the Perception, Understanding, and Design of Built Environments*, Bentham eBooks, 2012, pp. 3–21. For an excellent introduction about places see T. Cresswell, *Place: A Short Introduction*, Malden, MA: Blackwell Publishing, 2004. For contemporary approaches towards place see L. C. Manzo and P. Devine-Wright, eds., *Place Attachment: Advances in Theory, Methods, and Applications*, New York: Routledge, 2014.

<sup>85</sup> See E. Relph, “Geographical experiences and being-in-the-world: The phenomenological origins of geography”, in: D. Seamon and R. Mugerauer, eds., *Dwelling, Place and Environment: Towards a Phenomenology of Person and World*, Dordrecht: Martinus Nijhoff, 1985, p. 27. For classic analysis of violent spatial practices see D. Gregory, *The Colonial Present*, Malden, MA: Blackwell Publishing, 2004.

<sup>86</sup> see D. Gregory, *The Colonial Present*, p. 219.

<sup>87</sup> See <https://groups.yahoo.com/neo/groups/chechnya-sl/conversations/topics/8570> (Accessed 07.07.2014).

and drive their cattle back to Shatili, where the animals nearly died of starvation while the farmers tried desperately to borrow hay from neighbours.<sup>88</sup>

In Upper Khevsureti where Pichvni is located pastures are very scarce. Therefore, occupation of the village fractured the space of everyday movement and action of Shatili's residents. They were deprived not only of their possessions, but also of historical place where their ancestors dwelled and worked. Albeit small in scope, such "mini" occupations have no less destructive effect than occupation of a whole region.<sup>89</sup>

Violent spatial practices are continuing up to date. Russia arbitrarily moves the borders of the so called South Ossetia inside the Georgian-controlled territories. In December, 2013 Russian soldiers installed barbed wire fences along villages Plavi and Plavismani, effectively fracturing the everyday space of villages. Now residents are unable to visit cemeteries and cultivate the land which is beyond the "border".<sup>90</sup> The cynical nature of "borderisation" is more exacerbated by the fact that for sustaining themselves residents of villages mainly depend on agriculture. Preventing them to cultivate their own land actually means reducing them to poverty.

This "creeping occupation" by Russia involves building of a fence (which is now approximately 45 kilometres long) along administrative boundary line which separates the so called South Ossetia from Georgia. In 2013, the process of "borderisation" intensified as Russians dug new trenches and installed surveillance devices in the villages Dvani, Ghogheti, Atoci, and Akhali Khurvaleti.<sup>91</sup>

Violent spatial practices are not limited only to building of walls and fences. Encroachments on everyday space are also manifested by illegal detainings of Georgian citizens by Russian soldiers and the so called South Ossetian paramilitary forces. Almost all of detained residents of the conflict region were performing some kind of activity in everyday space (picking mushrooms or capers in the forest, working in the field, herding cows, collecting staphylea and so on).<sup>92</sup> In the worst cases, they were kidnapped directly from the

<sup>88</sup> See G. York, "Tension mounts in Georgia as Chechen war spills over", 29.5.2000, <http://www.theglobeandmail.com/news/national/tension-mounts-in-georgia-as-chechen-war-spills-over/article4164365/> (Accessed 07.07.2014).

<sup>89</sup> For sacred, historical and everyday places and spaces in Shatili and their interconnection see G. Tavadze, *Shatili from the Perspective of Philosophical Geography*. For exact location of Pichvni, visit <http://wikimapia.org/#lang=en&lat=42.672339&lon=45.191274&z=15&m=b&show=/31040154/Pichvni&search=pichvni> (Accessed 07.07.2014).

<sup>90</sup> "Russia installs barbed wire fences along village Plavi and Plavismani". 10.12.2013, <http://www.georgianews.ge/politics/25613-russia-installs-barbed-wire-fences-along-village-plavi-and-plavismani.html> (Accessed 07.07.2014).

<sup>91</sup> See Z. Jgharkava, "Russia pushes Georgia towards confrontation", 27.09.2013, [http://www.georgiatoday.ge/article\\_details.php?id=11497](http://www.georgiatoday.ge/article_details.php?id=11497); M. Ellena, "On Edge – Life Along the Dividing Line", 17.11.2013, <http://www.civil.ge/eng/article.php?id=26697>; "Russian soldiers resume erection of wire fences in Ghogheti village", 30.11.2013, <http://www.georgianews.ge/politics/25514-russian-soldiers-resume-erection-of-wire-fences-in-ghogheti-village.html>; "Russian soldiers continue to install barbed wire fences along Atoci village", 25.02.2014, <http://www.interpressnews.ge/en/conflicts/54998-russian-soldiers-continue-to-install-barbed-wire-fences-along-atoci-village.html?ar=A>. For photographic coverage of "Borderisation" in Dvani see <http://www.civil.ge/eng/category.php?id=87&gallery=97> (Accessed 07.07.2014).

<sup>92</sup> See "Russian Soldiers Kidnapped 6 Georgians from Sachkhere, Georgia", 01.06.2011, <http://www.interpressnews.ge/en/conflicts/28963-russian-soldiers-kidnapped-6-georgians-from-sachkhere-georgia.html?ar=A>; "Citizen of Georgia Kidnapped from Village Bershueti", 10.07.2013, <http://www.interpressnews.ge/en/conflicts/48597-citizen-of-georgia-kidnapped-from-village-bershueti.html?ar=A>; "Russian Occupants Detain Three Women at Khurvaleti Village", 25.04.2014, <http://www.tabula.ge/en/story/82582-russian-occupants-detain-three-women-at-khurvaleti-village>; "Family members of the abducted from Khurvaleti are demanded to pay money", 25.04.2014, <http://georgianpress.ge/com/news/view/3411?lang=3>; "Russian Soldiers Kidnap People from Borderline Villages and Take Them to Tskhinvali", 29.04.2014,

villages.<sup>93</sup> These and other innumerable undocumented cases constitute what can be called “colonization of everyday space”<sup>94</sup> which disrupts the place-ballet and fundamental feeling of security which humans associate with their everyday places, thereby producing anxiety, fear, and suffering.

According to the website of the Ministry of Internally Displaced Persons from the Occupied Territories, Accommodation and Refugees of Georgia, there are 253 574 internally displaced persons in Georgia (08.04.2014).<sup>95</sup> After the Russo-Georgian War of 2008, 20 272 individuals remain in displacement.<sup>96</sup> With the help of international donors Georgian government has built for them new settlements in Tserovani, Khurvaleti, Verkhvebi, Shavshvebi and other places.<sup>97</sup> Nevertheless, displaced persons are still struggling for their subsistence and suffering from high blood pressure, excitement and depression.<sup>98</sup> Will these settlements forever substitute their native homes? Will these fragile, new (ersatz) everyday spaces become the basis of future meaningful activities for their residents or will they turn into places of despair, fear and anxiety? I want to answer these questions somehow indirectly by borrowing several lines from the brilliant work of French philosopher G. Bachelard.<sup>99</sup> The underlying concept of the work is that of house to which Bachelard ascribes great

<http://www.humanrights.ge/index.php?a=main&pid=17708&lang=eng>; “Seven more Georgian citizens illegally detained at border”, 12.05.2014, <http://agenda.ge/news/13966/eng> (Accessed 07.07.2014).

<sup>93</sup> “Condition of Four Georgians Kidnapped from Sachkhere Two Weeks Ago Is Unknown”, 14.09.2008, <http://www.interpressnews.ge/en/justice/1409-condton-of-fou-geogns-kdnpped-fom-schkhee-two-weeks-ago-is-unknown.html?ar=A>; “Ossetians Kidnapped 16 Georgian Citizens from Dusheti District”, 26.10.2009, <http://www.humanrights.ge/index.php?a=main&pid=11358&lang=eng> (Accessed 07.07.2014).

<sup>94</sup> This notion is different from Lefebvre’s “colonization of everyday life” to whom it means “the superimposition and hyperextension of abstract space”. See D. Gregory, “Geographical Imaginations”, Oxford: Blackwell, 1994, p. 403 ff. See also H. Lefebvre, *Critique of Everyday Life*, vol. 2, *Foundations for a Sociology of the Everyday*, translated by John Moore, London/New York: Verso, 2002, *passim*; S. Elden, *Understanding Henri Lefebvre: Theory and the Possible*, London/New York: Continuum, 2004, *passim*; S. Kipfer, C. Schmid, K. Goonewardena, R. Milgrom, “Globalizing Lefebvre?”, in: S. Kipfer, C. Schmid, K. Goonewardena, R. Milgrom (eds.), *Space, Difference, Everyday Life: Reading Henri Lefebvre*, New York/London: Routledge, 2008, p. 294 ff.

<sup>95</sup> <http://www.mra.gov.ge/eng/static/55> (Accessed 07.07.2014).

<sup>96</sup> “Status of internally displaced persons and refugees from Abkhazia, Georgia, and the Tskhinvali region/ South Ossetia, Georgia”, *Report of the Secretary-General*, 7.05.2014, [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/68/868](http://www.un.org/ga/search/view_doc.asp?symbol=A/68/868) (Accessed 07.07.2014). In this report it is clearly stated that “OHCHR continues to receive allegations concerning, inter alia, impediments to freedom of movement, including of internally displaced persons, to the enjoyment of property rights and to access to religious and cultural sites and education, arbitrary arrests in areas adjacent to the administrative boundary line and poor conditions of detention in the context of alleged illegal crossings” (p. 4); “[...] temporary detentions still occur when farmers intentionally or unintentionally cross into these areas, for example, when visiting graveyards, retrieving stray cattle, attending to irrigation channels or transiting to and from work in their fields” (p. 6).

<sup>97</sup> “Verkhvebi IDP Settlement”, w. d., <http://civil.ge/eng/category.php?id=87&size=wide&gallery=78>; “The IDP settlement in Tserovani”, 20.10.2013, <https://www.behance.net/gallery/11597643/The-IDP-settlement-in-Tserovani> (Accessed 07.07.2014).

<sup>98</sup> M. Corso, “Georgia: IDPs Have Found Homes, but Not Work”, 17.08.2009, <http://www.eurasianet.org/departments/insightb/articles/eav081809.shtml>; “Houses of Internally Displaced People (IDP) are Flooded in Georgia”, 16.03.2010, <http://www.demotix.com/news/278436/houses-internally-displaced-people-idp-are-flooded-georgia#media-278431>; M. Corso, “Georgia: War IDPs Fight Ongoing Battle with Poverty”, 08.08.2012, <http://www.eurasianet.org/node/65764>; S. Modebadze, “Five years since the war-challenges remain”, 08.08.2013, [http://www.messenger.com.ge/issues/2921\\_august\\_8\\_2013/2921\\_salome.html](http://www.messenger.com.ge/issues/2921_august_8_2013/2921_salome.html); S. Tsitsikashvili, “High Blood Pressure, Excitement and Depression among IDPs”, 22.04.2010, <http://www.humanrights.ge/index.php?a=main&pid=8200&lang=eng>. Nevertheless, there still remains a place for human compassion and mutual aid. See for example G. Aptsiauri, “A Georgian-Ossetian family sees in the New Year”, 9.02.2012, <http://www.conflict-voices.net/blog/2012/02/a-georgian-ossetian-family-sees-in-the-new-year/> (Accessed 07.07.2014).

<sup>99</sup> G. Bachelard, *The Poetics of Space*, translated by M. Jolas, Boston: Beacon Press, 1994.

significance. According to him, “our house is our corner of the world. As has often been said, it is our first universe, a real cosmos in every sense of the word.”<sup>100</sup> The thoughts, memories and dreams of mankind are integrated in the house. “Without it, man would be a dispersed being. It maintains him through the storms of the heavens and through those of life. It is body and soul. It is the human being's first world. Before he is ‘cast into the world,’ as claimed by certain hasty metaphysics, man is laid in the cradle of the house. And always, in our daydreams, the house is a large cradle.”<sup>101</sup> With its cellar and garret, nooks and corridors the house houses places to which humans return in their daydreams. Applying Bachelard’s notion of house to the local level of philosophical geography,<sup>102</sup> it can be said that house is a cornerstone of individual’s everyday space.

## Conclusion

Destabilizing and disrupting everyday spaces of humans by violent spatial practices (demolishing houses, fence building, kidnapping local residents) threatens the very existence of houses, injures the identities of their inhabitants (because identities are always embodied<sup>103</sup>), destroys the meaningful centres of their existence, and distorts the place-ballet. In the wake of these destructive practices the need for greater responsibility from politicians and military commanders (of whatever side they are), compassion and the ability to forgive, humility, mutual aid and understanding, constant care for places and *building* are of utmost importance. For “only if we are capable of dwelling, only then can we build.”<sup>104</sup>

## References:

- AGENDA.GE, “Seven more Georgian citizens illegally detained at border”, 12.05.2014, <http://agenda.ge/news/13966/eng> (Accessed 07.07.2014).
- Aptsiauri, G., “A Georgian-Ossetian family sees in the New Year”, 9.02.2012, <http://www.conflict-voices.net/blog/2012/02/a-georgian-ossetian-family-sees-in-the-new-year/> (Accessed 07.07.2014).
- Bachelard, G., *The Poetics of Space*, translated by M. Jolas, Boston: Beacon Press, 1994.
- Balmforth, T., “Levada Center, Russia’s Most Respected Pollster, Fears Closure”, 21.05.2013, <http://www.rferl.org/content/russia-levada-center-foreign-agent/24992729.html> (Accessed 07.07.2014).
- BBC News, “Russia: Controversial NGO bill becomes law”, 21.07.2012, <http://www.bbc.com/news/world-europe-18938165> (Accessed 07.07.2014).
- BBC News, “Russia NGO law: Election watchdog Golos fined”, 25.04.2013, <http://www.bbc.com/news/world-europe-22291563> (Accessed 07.07.2014).
- BBC News, “Russia NGO law: Election watchdog Golos suspended”, 26.06.2013, <http://www.bbc.com/news/world-europe-23070102> (Accessed 07.07.2014).
- BEHANCE.NET, “The IDP settlement in Tserovani”, 20.10.2013, <https://www.behance.net/gallery/11597643/The-IDP-settlement-in-Tserovani> (Accessed 07.07.2014).
- Bichashvili, L., “Russian Soldiers Kidnap People from Borderline Villages and Take Them to Tskhinvali”, 29.04.2014,

<sup>100</sup> See G. Bachelard, *The Poetics of Space*, p. 4.

<sup>101</sup> Ibid. p. 7.

<sup>102</sup> For the conceptual framework of philosophical geography see G. Tavadze, *Shatili from the Perspective of Philosophical Geography*, pp. 85–94.

<sup>103</sup> See R. Jenkins, *Social Identity*, 3<sup>rd</sup> edition, London/New York: Routledge, 2008, *passim*.

<sup>104</sup> See M. Heidegger, “Building – Dwelling – Thinking”. in: M. Heidegger, *Poetry, Language, Thought*, translations and introduction by A. Hofstadter. New York: Harper Colophon Books, p. 160.

- <http://www.humanrights.ge/index.php?a=main&pid=17708&lang=eng> (Accessed 07.07.2014).
- Casey, E. S., *Getting Back into Place: Toward a Renewed Understanding of the Place-World*, Bloomington: Indiana University Press, 1993.
- Chechnya List, <https://groups.yahoo.com/neo/groups/chechnya-sl/conversations/topics/8570> (Accessed 07.07.2014).
- Chomsky, N., “Ossetia-Russia-Georgia”, <http://www.chomsky.info/articles/200809--2.htm> (Accessed 07.07.2014).
- CIVIL.GE, “Borderisation in Dvani”, <http://www.civil.ge/eng/category.php?id=87&gallery=97> (Accessed 07.07.2014).
- CIVIL.GE, “Verkhvebi IDP Settlement”, <http://civil.ge/eng/category.php?id=87&size=wide&gallery=78> (Accessed 07.07.2014).
- Cohen, A., *Russian Imperialism. Development and Crisis*, Westport, CT: Praeger Publishers, 1996.
- Corso, M., “Georgia: IDPs Have Found Homes, but Not Work”, 17.08.2009, <http://www.eurasianet.org/departments/insightb/articles/eav081809.shtml>
- Corso, M., “Georgia: War IDPs Fight Ongoing Battle with Poverty”, 08.08.2012, <http://www.eurasianet.org/node/65764>
- Cresswell, T., *Place: A Short Introduction*, Malden, MA: Blackwell Publishing, 2004.
- DEMOTIX.COM, “Houses of Internally Displaced People (IDP) are Flooded in Georgia”, 16.03.2010, <http://www.demotix.com/news/278436/houses-internally-displaced-people-idp-are-flooded-georgia#media-278431> (Accessed 07.07.2014).
- Elden, S., *Understanding Henri Lefebvre: Theory and the Possible*, London/New York: Continuum, 2004.
- Ellena, M., “On Edge – Life Along the Dividing Line”, 17.11.2013, <http://www.civil.ge/eng/article.php?id=26697>
- Foucault, M., “The Order of Discourse”, in: Young, R. (ed.), *Untying the Text: A Post-Structuralist Reader*, Boston: Routledge, 1981, pp. 51–77.
- Foucault, M., *The Archeology of Knowledge*, Tavistock Publications, 1972.
- Galeotti, M. and Bowen, A. S., “Putin’s Empire of the Mind. How Russia’s President Morphed from Realist to Ideologue – and What He will do Next”, *Foreign Policy*, May/June 2014, pp. 16–19.
- GEORGIANNEWS, “Russia installs barbed wire fences along village Plavi and Plavismani”. 10.12.2013, <http://www.georgianews.ge/politics/25613-russia-installs-barbed-wire-fences-along-village-plavi-and-plavismani.html> (Accessed 07.07.2014).
- GEORGIANNEWS, “Russian soldiers resume erection of wire fences in Ghogheti village”, 30.11.2013, <http://www.georgianews.ge/politics/25514-russian-soldiers-resume-erection-of-wire-fences-in-ghogheti-village.html> (Accessed 07.07.2014).
- GEORGIAN PRESS.GE, “Family members of the abducted from Khurvaleti are demanded to pay money”, 25.04.2014, <http://georgianpress.ge/com/news/view/3411?lang=3> (Accessed 07.07.2014).
- Gregory, D., “Geographical Imaginations”, Oxford: Blackwell, 1994.
- Gregory, D. *The Colonial Present*, Malden, MA: Blackwell Publishing, 2004.
- Heidegger, “Building – Dwelling – Thinking”. in: M. Heidegger, *Poetry, Language, Thought*, translations and introduction by A. Hofstadter. New York: Harper Colophon Books, pp. 145–161.
- Hokanson, K., “Literary Imperialism, *Narodnost*’ and Pushkin’s Invention of the Caucasus”, *The Russian Review*, 53 (1994), pp. 336–352.

- HUMANRIGHTS.GE, “Ossetians Kidnapped 16 Georgian Citizens from Dusheti District”, 26.10.2009, <http://www.humanrights.ge/index.php?a=main&pid=11358&lang=eng> (Accessed 07.07.2014).
- Jenkins, R., *Social Identity*, 3<sup>rd</sup> edition, London/New York: Routledge, 2008.
- Jgharkava, Z., “Russia pushes Georgia towards confrontation”, 27.09.2013, [http://www.georgiatoday.ge/article\\_details.php?id=11497](http://www.georgiatoday.ge/article_details.php?id=11497)
- INTERPRESSNEWS, “Condition of Four Georgians Kidnapped from Sachkhere Two Weeks Ago Is Unknown”, 14.09.2008, <http://www.interpressnews.ge/en/justice/1409-condton-of-fou-geogns-kdnpped-fom-schkhee-two-weeks-ago-is-unknown.html?ar=A> (Accessed 07.07.2014).
- INTERPRESSNEWS, “Russian Soldiers Kidnapped 6 Georgians from Sachkhere, Georgia”, 01.06.2011, <http://www.interpressnews.ge/en/conflicts/28963-russian-soldiers-kidnapped-6-georgians-from-sachkhere-georgia.html?ar=A> (Accessed 07.07.2014).
- INTERPRESSNEWS, “Citizen of Georgia Kidnapped from Village Bershueti”, 10.07.2013, <http://www.interpressnews.ge/en/conflicts/48597-citizen-of-georgia-kidnapped-from-village-bershueti.html?ar=A>; (Accessed 07.07.2014).
- INTERPRESSNEWS, “Russian soldiers continue to install barbed wire fences along Atoci village”, 25.02.2014, <http://www.interpressnews.ge/en/conflicts/54998-russian-soldiers-continue-to-install-barbed-wire-fences-along-atoci-village.html?ar=A> (Accessed 07.07.2014).
- Kipfer, C. Schmid, K. Goonewardena, R. Milgrom, “Globalizing Lefebvre?”, in: S. Kipfer, C. Schmid, K. Goonewardena, R. Milgrom (eds.), *Space, Difference, Everyday Life: Reading Henri Lefebvre*, New York/London: Routledge, 2008, pp. 285–305.
- Lefebvre, H., *Critique of Everyday Life*, vol. 2, *Foundations for a Sociology of the Everyday*, translated by John Moore, London/New York: Verso, 2002.
- Layton, S., *Russian Literature and Empire: Conquest of the Caucasus from Pushkin to Tolstoy*, Cambridge: Cambridge University Press, 1994.
- Malpas, J. E. *Place and Experience: A Philosophical Topography*, Cambridge: Cambridge University Press, 1999.
- Mamardashvili, M., “The Civil Society: An Interview With Merab Mamardashvili”, <http://car.owu.edu/pdfs/1989-2-3.pdf> (Accessed 07.07.2014).
- Manzo, L. C., and Devine-Wright, P., eds., *Place Attachment: Advances in Theory, Methods, and Applications*, New York: Routledge, 2014.
- Ministry of Internally Displaced Persons from the Occupied Territories, Accommodation and Refugees of Georgia, *IDP Figures*, <http://www.mra.gov.ge/eng/static/55> (Accessed 07.07.2014).
- Mitchell, L. and Cooley A., “Learning from Crimea”, 16.06.2014, [http://www.foreignpolicy.com/articles/2014/06/16/learning\\_from\\_crimea](http://www.foreignpolicy.com/articles/2014/06/16/learning_from_crimea) (Accessed 07.07.2014).
- Modebadze, S. “Five years since the war- challenges remain”, 08.08.2013, [http://www.messenger.com.ge/issues/2921\\_august\\_8\\_2013/2921\\_salome.html](http://www.messenger.com.ge/issues/2921_august_8_2013/2921_salome.html)
- Newman, D., “Russian nationalist thinker Dugin sees war with Ukraine”, 10.07.2014, <http://www.bbc.com/news/world-europe-28229785>, Accessed 10.07.2014
- Nodia, G., “The August 2008 War: Main Consequences for Georgia and its Conflicts”, *Nationalities Papers*, 40 (2012), pp. 721–738.
- Pichvni, <http://wikimapia.org/#lang=en&lat=42.672339&lon=45.191274&z=15&m=b&show=/31040154/Pichvni&search=pichvni> (Accessed 07.07.2014).
- Ram, H., *Imperial Sublime. A Russian Poetics of Empire*, Madison, WI: The University of Wisconsin Press, 2003.
- Relph, E. *Place and Placelessness*, London: Pion, 1976.



- Relph, “Geographical experiences and being-in-the-world: The phenomenological origins of geography”, in: D. Seamon and R. Mugerauer, eds., *Dwelling, Place and Environment: Towards a Phenomenology of Person and World*, Dordrecht: Martinus Nijhoff, 1985, pp. 15
- Saporov, A., article “From Conflict to Autonomy: The Making of the South Ossetian Autonomous Region 1918–1922”, *Europe–Asia Studies*, vol. 62 (2010), pp. 99–123.
- Seamon, D., ‘Body-Subject, Time-Space Routines, and Place-Ballets’, in: A. Buttimer and D. Seamon (eds.), *The Human Experience of Space and Place*, New York: St. Martin’s Press, 1980, pp. 148–165.
- Seamon, D. “Place, Place Identity, and Phenomenology: A Triadic Interpretation Based on J. G. Bennett’s Systematics”, in: H. Casakin and F. Bernardo, *The Role of Place Identity in the Perception, Understanding, and Design of Built Environments*, Bentham eBooks, 2012, pp. 3–21
- Sidorov, D., “Post-Imperial Third Romes: Resurrections of a Russian Orthodox Geopolitical Metaphor”, *Geopolitics*, 11 (2006), pp. 317–347.
- TABULA, “Russian Occupants Detain Three Women at Khurvaleti Village”, 25.04.2014, <http://www.tabula.ge/en/story/82582-russian-occupants-detain-three-women-at-khurvaleti-village> (Accessed 07.07.2014).
- Tavadze, G. *Shatili from the Perspective of Philosophical Geography*, Tbilisi: Nekeri, 2013.
- Tsitsikashvili, S., “High Blood Pressure, Excitement and Depression among IDPs”, 22.04.2010, <http://www.humanrights.ge/index.php?a=main&pid=8200&lang=eng>
- United Nations, *Report of the Secretary-General*, “Status of internally displaced persons and refugees from Abkhazia, Georgia, and the Tskhinvali region/ South Ossetia, Georgia”, 7.05.2014, [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/68/868](http://www.un.org/ga/search/view_doc.asp?symbol=A/68/868) (Accessed 07.07.2014).
- Van Herpen, M. H., *Putin’s Wars. The Rise of Russia’s New Imperialism*, Rowman & Littlefield, 2014.
- York, “Tension mounts in Georgia as Chechen war spills over”, 29.5.2000, <http://www.theglobeandmail.com/news/national/tension-mounts-in-georgia-as-chechen-war-spills-over/article4164365/> (Accessed 07.07.2014).
- Zakaradze, L., “Merab Mamardashvili: Perception of European Identity. A Road towards Self-Awareness”, *European Scientific Journal*, July 2013, Special Edition, pp. 87-96.

## SIGNIFICANCE OF UNITY OF LINGUISTIC LEVELS FOR TEXT COMPREHENSION

*Nino Kemertelidze, Prof.*

*Liana Koroshinadze, Assistant Prof.*

Grigol Robakidze University, Tbilisi, Georgia

---

### Abstract

The presented article aims at ascertaining the importance of unity of all linguistic levels for comprehensive understanding of a text. Our research is based on analyzing tropes on different levels taking into consideration broad context as this latter plays the utmost essential role in grasping the main idea of any kind of literary work. The article tries to reveal the particular stages of the mechanism where all levels are synthesized. The highest level of synthesis, where a writer's world outlook and world image are involved, comprises morphological, syntactic, lexical, semantic, stylistic, symbolic and metasemiotic levels, i.e. all linguistic data. Analysis of all these levels are necessary for full comprehension of an utterance or a text, but if taken separately, neither of them is enough. The most important statement is that full and exhaustive understanding of a text can be reached by a deep dialogue between a writer and a reader where their functions are interchangeable.

---

**Keywords:** Broad context, Extralinguistic factors, Background knowledge, Understanding, Comprehension

### Introduction:

The presented article aims at ascertaining the importance of unity of all linguistic levels for comprehensive understanding of a text. Our research is based on analyzing tropes on different levels taking into consideration broad context as this latter plays the utmost essential role in grasping the main idea of any kind of literary work. While noting the importance of context we have in mind that it is impossible to exactly determine the borders of broad context. Very often reading the whole text is not enough to penetrate into the depth of a writer's intention. Thus, the context should be broadened even more until the goal is achieved (full understanding of a text). This statement implies that in this case, extralinguistic factors should be involved what, on its turn, implies background knowledge. Very often, broad context is required not only for comprehending the main idea of any text, but also for understanding the implication of even a simple phrase. Though, sometimes in the latter case a word-combination (which is considered to be the narrowest context) is also enough.

As the research is based on trope analysis, it is worth mentioning that words are not "born" as tropes; it is namely the context where words become tropes; it is namely the context where words acquire stylistic and emotional colouring and also such new figurative meanings (the so called occasional meanings) which have never been and may never be fixed in the language. These figurative meanings emerge on the basis of our conceptions on the surrounding world which play the colossal role in forming new meanings based on old meanings and old contexts by adding some specific meaning in the particular situational context.

The presented research is an attempt to determine the mechanism which ensures the use of tropes or occasional word-combinations by a writer and those conditions that enable a reader to understand them adequately. Analysis of the material from literature helped us understand what stands beyond each word in any particular case and what assists the realization of a writer's intention.

Fundamental study of the materials from dictionaries and literary texts elucidated the inner complexity of morphological and semantic-functional relations existing in any collocation.

The first stage of the analysis is the **morphological level** where certain words and phrases were compared on the emic (lexicographic) and etic (text) levels. The analysis showed that there appear a lot of words which, owing to some phonological, morphological, semantic restrictions, are not fixed in dictionaries, though they are quite often met in literary works; for instance, “*Irishly*”, “*Elizabethanly*”, “*lizardly*”, “*yellowly*”, “*greenly*”, “*whitely*” and many others.

Thus, such kind of formations can quite freely be used in fiction, i.e. here we do not meet any restrictions. They are used by a writer in certain cases and for certain purposes. In other words, they often are occasional formations.

The next stage of the analysis is **syntactic level** where word-combinations are studied for the following purpose: what is the syntactic role of a modifier and modified; what is the specificity of their distribution towards an utterance. We were interested whether syntactic analysis reveals that loading which a modifier has in the utterance. In many cases particular syntagmas are quite standard and fully correspond to syntactic norms. But sometimes, rather interesting cases are revealed:

A modifier can appear as the attribute of the whole sentence. “*Definitely, she is the most beautiful lady*”. “*Eventually, we completed our work*”.

There are cases when though a modifier makes a syntagmatic bond with a verb, semantically it is related to a noun, i.e. in reality it defines not a verb, but a noun.

“*On the walls silver fish wondered profusely among plants*”.

(S. Maugham “The Razor’s Edge”)

Notwithstanding the fact that the modifier (in this particular case adverb) is grammatically connected with the verb “*wondered*”, semantically they cannot be related. It emphasizes abundance of fish.

Though syntactic level is rather important, it is not enough for revealing the semantic loading of this or that word/utterance.

The following stage of the analysis is **lexical level**. On this level, certain words are analyzed considering their nominative meaning. As usual, they are studied on both – emic and etic levels. On emic level, understanding of a word is mainly limited to denotational, referential function where correlation between a modifier and a modified is clear enough. But on the etic level, in most cases, denotational meaning is not enough to understand what this or that word/utterance expresses or means or what stands beyond it in reality. It becomes necessary to determine the signification, consider a writer's intention and world outlook. But for the abovementioned, descriptive analysis and, consequently, lexical level is not enough.

Thus, it becomes necessary to move to the higher level of semantic analysis – **stylistic level** where trope meanings predominate. Trope meaning cannot be expected on standard semantic level and its understanding requires a new mechanism. Stylistic level somehow involves **symbolic level**. It should be noted that there is a bulk of words that have fixed symbolic meanings, but in many cases even absolutely neutral words can acquire them contextually.

In literary texts, having passed the symbolic meaning, a word can acquire a new poetic shade. So, the language is enriched with trope meanings; words become emotionally

coloured and stylistically loaded. They acquire evaluation function which is one of the most important attributes of a trope.

Thus, linguistic units develop new meanings on different levels and in different contexts. Namely these new meta-meanings are studied on **metasemiotic level** where all metaphoric formations or all kinds of stylistic devices and occasional expressions appear in abundance. On this level we can meet such strange word-combinations which are absolutely not understandable on the ordinary semantic level and even seem funny on the lexical level.

Metasemiotic level is characteristic to the individual style of literary work. The whole potential of a word/utterance is revealed namely on this level, but in order to fully penetrate into a writer's intention, a reader has to consider not only linguistic, but also extralinguistic factors, such as: a writer's epoch, the epoch described in the texts, a writer's world outlook and world image, his creative peculiarities, etc. Namely background knowledge will help a reader understand a text thoroughly and reach its final intension.

Thus, the knowledge of broad context and the surrounding world is especially necessary on the mentioned level. Without considering broad context not only a whole text, but quite often even some phrases are completely vague.

Let us analyze a couple of examples:

*“Janice, Irishly earnest, still grappled with the moral issue”.*

(J. Updike “A Gift from the City”)

In order to understand the word-combination “*Irishly earnest*”, it is necessary to have background knowledge and know what kind of association the word “*Irish*” provokes in people for whom English language is native and which features this nation is supposed to possess. Having in mind that Longman New Universal Dictionary gives such definition of the word “*Irish*”: 1) *of Ireland or the Irish language*; 2) *amusingly illogical*, we will easily realize that namely the second figurative meaning is realized in the mentioned sentence and the underlined word-combination functions on the metasemiotic level.

*“One autumn day Charles shot at a very strange bird that ran from the border of one of his uncle's fields. When he discovered what he had shot and its rarity, he was vaguely angry with himself. The bird was stuffed, and for ever after stared glassily like an octoroon turkey out of its glass case in the drawing-room at Winsyatt”.*

(J. Fowles “The French Lieutenant's Woman”)

To understand this passage we should know what is meant under the word “*glassily*”, what implication it is carrying. This word acquires contextual symbolic meaning – *lifeless, speechless, stunned*. The stuffed bird was gazing at the author namely with such lackluster eyes. In the given case, even symbolic meaning and, consequently, symbolic level is not enough to understand the passage completely and exhaustively. But knowledge of the broad context and the epoch described in the novel will enable us to easily imagine the hero's inner state and fully comprehend the semantics of the utterance. The hero of the Victorian epoch is facing the serious problems due to breaking his engagement. If we take into consideration all those difficulties this fact would result in, we will easily understand the hero's nervousness and irritation. He unaccountably and instinctively kills a very rare bird and the author expresses the hero's fury as if with the fury of the dead bird which is staring with lackluster eyes. After the analysis it becomes obvious that here we deal with the writer's world outlook.

## Conclusion

Thus, we tried to reveal the particular stages of the mechanism where all levels are synthesized. The highest level of synthesis, where a writer's world outlook and world image are involved, comprises morphological, syntactic, lexical, semantic, stylistic, symbolic and metasemiotic levels, i.e. all linguistic data. Analysis of all these levels are necessary for full

comprehension of an utterance or a text, but if taken separately, neither of them is enough. The most important statement is that full and exhaustive understanding of a text can be achieved by a deep dialogue between a writer and a reader where their functions are interchangeable.

**References:**

- Taylor K. *Unshadowed Thought*. Cambridge MA, Harvard University Press, 2000.
- Kensei I., Harnish R. M. (eds). *Perspectives on Semantics, Pragmatics, and Discourse*. Amsterdam: John Benjamins, 2001.
- Soams S. *The Gap between Meaning and Assertion*. In: *Philosophical Essays*. Vol.1. *Natural Language: What It Means and How We Use It*. Princeton, Princeton University Press, 2009. PP. 278-297.
- Bach K. *Context Dependence (such as it is)*. In: *The Continuum Companion to the Philosophy of Language*. M. Garcia-Carpintero and M. Kolbel (eds). 2012.

## WRITERS AND THEIR WAYS WITH WORDS: MIGRATION AND LANGUAGE IN CONTEMPORARY GERMANY

*Adelheid R. Eubanks, PhD*  
Johnson C. Smith University, USA

---

### Abstract

On 9 and 10 December 1991, the European Citizen was created during the Maastricht European Council. Since then, Europeans of the member states of the European Union (EU) have witnessed the introduction of a common currency, and the institutional, administrative, and civic Europeanization of Europe characterizes an arguably new Europe for the new millennium. In contrast to the administrative and civic Europeanization, there many and varied debates about what it means or may mean to be European and about European culture. In the context of these discussions, the comparative study of literature of migrants can be productive. Although somewhat different for the individual EU member states, the history of literature of migrants and its reception have unfolded in similar ways. In addition to the creation of a conflicted relationship between national and migrant literature, terms like the German *Gastarbeiterliteratur* have not only created a separate and distinct category for migrant literature, but have also served to limit its authors to a single characteristic (they are 'guest workers') and, by extension, the content of the works to a few themes such as feelings of loneliness, loss of home, a sense of isolation, etc. Significantly, what dominated the discourse about migrant literature was the concern with themes rather than with its vehicle, i.e., language. The literary productions of migrants to Germany during the past two decades invite comparison of these works to explore the extent and degree to which they are contributions to the debates about 'European identity'. As basis for comparison serve examples from diverse texts and authors with diverse language backgrounds such as Italian, French, Japanese, Arabic, and Turkish, for example. The authors are different in terms of both their (or their parents') countries of origin *and* in terms of their current homes and languages. The intentional reference to such variegated works serves to illuminate that despite the authors being subject to different first languages, they also have in common the translinguistic character of their texts. Importantly, the translinguistic aspects of the texts do *not* constitute the encounter (or even clash) between two given cultures (homeland and country of residence). Instead, each of the texts presents instances of the linguistic and creative potential when any two cultures 'meet' to inform each other and, in the process, both emerge as changed. One of the effects on the reader/recipient of the text or texts is defamiliarization with his or her native language; she or he is thus invited not only to encounter something (another culture/country) or someone (the narrator) Other but to also experience the assumed 'normal' (most readers' native language) as Other. In this sense, the different texts all 'teach' that alterity is not far away, but that it exists where one might not expect it (at home, in one's native language). The creative, aesthetic and profound play with language may not bring anyone closer to answering questions about 'European identity' (and may indeed raise new questions in addition to existing ones). However, the turn to its constitutive medium, i.e., language, clearly outlines the challenges that are implicit in recent migrant literatures across Europe and across other parts of the world. For Germany (and Europe), one of these challenges is to acknowledge current realities (as a consequence of historical phenomena) and to reimagine itself as the heterogenous space it has always been.

Perhaps nothing binds people more intimately to missions, ideals, and ancient dreams than language. -Azade Seyhan (36)

“[T]he practice of tendentious literature is aesthetically risky business. When writing turns into whining, it oppresses imagination and inventiveness and reduces experience to an eternal recurrence of misery” (Seyhan, 89). Azade Seyhan writes these remarks in the context of discussing the so-called *village literature* that emerged in Turkey after WWII. Yet some of her comments describe well the reception of migrants’ literature in Germany since the end of said war. The first publications by migrants in Germany led to the neologism *Gastarbeiterliteratur* (guest workers’ literature). The main characteristics of this literature are the supposedly autobiographical content and the focus on—to use Seyhan’s phrase—the ‘recurrence of misery’ that consists mainly of experiencing alienation and marginalization in the host country. The coinage of this new term—applicable to and labeling a ‘new’ genre of literature—served and serves as a controlling power that organizes a new world in terms of an old world. To explain what I mean, I need to make reference to some thoughts developed by Jean-Luc Nancy in his *Creation of the World or Globalization (La creation du monde ou mondialisation)*.

To summarize, Nancy stresses the immanence of the world (8), meaning that there is no model for the world. Being a singular fact, he notes that the world is “the exact opposite” of production, which supposes a given [and] a project (12). The world is instead creation and, as such, also a space where the “im-possible is the possibility of experience” (9). An ‘im-possible’ experience, according to Nancy—here using Derridean thought—is an experience removed from the conditions of possibility of a finite knowledge, and which is nevertheless an experience (9). An im-possible experience takes place when anticipated conditions of possibilities do not coalesce with a given event. At that moment, as I read Nancy, ‘mondialisation’ (world-forming) can occur. The world is not a product of past and present possibilities. The world is becoming, open to possible and impossible experiences.

Following and applying Nancy’s elaborations, the segregation of guest workers’ literature (in German) from German literature thus means to experience and classify such works in accordance with anticipated conditions. Importantly, these anticipated conditions uphold and even underscore a division between the ‘indigenous’ and the ‘foreign’. This phenomenon is not unique to the reception of migrants’ literature in Germany or in German, but can also be observed in France, Italy, and elsewhere. Relegating migrants’ literature to its own genre helps maintain ideas about an (imagined) homogenous ‘us’ distinct from ‘others’. Clear borders seem to exist between these literary worlds and the real worlds they represent. This division also ‘fixes’ the world in a state of being that precludes any ‘becoming’.

The purpose of this presentation is to explore how some texts by migrant writers may be read as instantiations of ‘im-possible experiences’. To capture this dimension, it is crucial to disregard all consideration of content or plot and instead focus on the aesthetics of the texts. By aesthetics, I here simply mean first to imply the definition the *Oxford English Dictionary* provides, according to which aesthetics refers to “things perceptible by the senses, things material (as opposed to things thinkable or immaterial).” As I shall demonstrate, the writers instrumentalize their tool, i.e., language, to make the material world perceptible to the readers’ senses—especially the auditory and visual senses. The effect of such manipulation of language is to foreground language itself. In turn, this foregrounding of language creates a frame within which a second, playful aesthetics can unfold.

For the second, ‘playful’ aesthetics, it will be useful to consider Schiller’s prescription to activate the play drive as central to an individual’s ‘aesthetic education’. According to Schiller, the play drive serves as mediator between the material drive (sensibility) and the form drive (reason): “Schiller identifies the play drive with art and the experience of the beautiful, which can transcend the culturally determined claims of rationality and materiality and reconcile the fullness of existence with the highest autonomy” (Seyhan 137). Using language in a playful way, the writers unsettle and question the reader’s natural or automatic sense of the native speaker’s language. The unsettled state also constitutes the possibility of an im-possible experience. From here, the world that is becoming is one in which the creative power of language becomes central and, significantly, one in which the question of ‘indigenous’ versus ‘foreign’ is renegotiated and a new world is redefined in new terms.

Making the material world available to the readers’ senses is observable in all the texts under consideration. Underlying these attempts is the awareness that all production of language is the result of the very materiality of the uttering body. A passage from one of Yoko Tawada’s texts illustrates this awareness:

Within the cave, out of which blows wind, there lives a naked monster with reddish-wet skin. The ground is sticky, wet and shimmers bloodred. The monster’s lower body is fixed to the ground. It does not snarl, does not howl, does not speak. But when the animal moves, a moaning wind ensues. It flies out of the cave and changes into words. (*Aber die Mandarinen* 46; translation my own)

This ‘monster’ the Japanese author who lives in Germany invokes here is, of course, the tongue without which spoken language would not be possible. The tongue is part of the physical apparatus that is essential for speech to take place. As the ‘wind’ becomes ‘words’, communication and social interaction begin. Both are a result of the physical or material precondition of production and are also the result of particular histories, conventions, and cultures. Sometimes, no interaction is possible as a consequence of different particular histories which have, among other phenomena, produced different languages. The grandmother of Özdamar’s narrator, for instance, notes that “the neighbors don’t knock on our door because their tongue does not understand our tongue. They are said to have come here from Albania” (274). On other occasions, it is a particular social reality that drives the activities of the speech-producing organs. Quoting Özdamar again, the reader finds that “the money of the rich makes the tongue of the poor tired” (180).

In addition to emphasizing the tongue as an *a priori* of speech and communication, the writers use other means to position their texts as links between the material world and the readers’ senses. This includes the creation of onomatopoeic renditions of sounds, on the one hand, and the introduction of foreign, i.e., non-German, words that often refer to food items or—especially in Özdamar’s texts—prayer rituals. The extent to which the texts are successful in engaging the reader in both a textual and a material world highlights and foregrounds the significant role that language has in both of these worlds.

Moreover, the central role of language is also the base from which the second, ‘playful aesthetics’ can be discerned. And it is here that the texts suggest novel relations between the ‘foreign’ and the ‘indigenous’. It is useful to look at some foreign words that migrant writers so frequently insert into their texts. Clearly, one function of such insertions is to educate the reader about another culture. Indeed, where cultural practices differ considerably, this kind of ‘education’ may be necessary to understanding a text. Yet education of the reader alone cannot account for all foreign insertions to a text. In Emine Sevgi Özdamar’s *Das Leben ist eine Karawanserei*, for example, four young girls stand behind their respective windows and sing a song because rain prevents them from playing with each other in the street: “Yağmur yağıyor / Seller akıyor / Arap Kızları / Camdan



bakıyor” (“It is raining / Water is flowing / The black girls / Are looking out of the window” 75; translation my own). Arguably, the reader understands the girls’ disappointment and frustration with the weather without this song—no matter in which language it is presented. Yet its presence suggests that the narrator willfully stresses his or her foreign provenance to the reader. The presence of the foreign serves to highlight language itself and is also likely to disturb the reader who, in this case, is probably both German and does not know Turkish. Such ‘disturbances’ are frequent in the texts under consideration and are ‘exacerbated’ when they are left untranslated, as is true in the majority of such instances. The ‘indigenous’ reader is thus deprived of ‘losing’ him- or herself in a given text because the ‘foreign’ in the text serves as an interruption and as a reminder of the social realities that can be seen and heard daily in the streets of cities and towns in Germany.

Parallel to the reader’s alienation by the ‘foreign’ insertions, an alienation from the ‘indigenous’ or native is set in motion. When migrant authors begin to play with the readers’ native language, they remind the audience that creative potential exists in languages at all times and that this potential transcends the chasm that divides the indigenous and the foreign. At the same time, the creative potential becomes most powerfully tangible in precisely the encounter between indigenous and foreign. Yoko Tawada writes: “I was often disgusted by people who spoke their native language fluently. They gave me the impression that they could not think or feel anything but that which their language provided quickly and easily” (*Das Fremde* 15; translation my own). The degree to which language comes ‘quickly’ and ‘easily’ is also a measure of the automatic or formulaic aspect of such language. The implication is that because this language is automatic, unreflective, and thus non-creative, it both relies on and perpetuates a ‘finite knowledge’ that establishes ‘fixed expectation of contingencies’ that prevent im-possible experiences.

Examples of how a reader is compelled to reflect on his or her native language are frequent in migrant authors’ works. Yoko Tawada, for instance, often describes the effects the German language has on a new speaker and invites the reader to imagine his or her language not as automatic but like a new discovery and ‘from the outside’ under the guidance of the Japanese newcomer: “Each foreign sound, each foreign glance, and each foreign taste had unpleasant effects on the body until the body itself changed. The ö-sounds, for example, pushed too far into my ears and the r-sounds scratched in my throat” (*Das Fremde* 14; translation my own). Apart from the repeated emphasis on the physicality of language production, Tawada here underscores the constructedness and conventionality of even the most minuscule elements of language, namely its sounds. In the same passage, the narrator moves from units of sounds to those of expressions: “There were also expressions that gave me goose bumps, such as ‘auf die Nerven gehen’ (to walk on nerves / to annoy), ‘die Nase voll haben’ (to have one’s nose full / to have had it), or ‘in die Hose gehen’ (to go into the pants / to go wrong)” (*Das Fremde* 14; translation my own). This quote serves to illustrate the potential for and the character of an im-possible experience. On the one hand, the narrator quotes a few very common expressions that—within assumed contingencies—merely or automatically trigger the meanings ‘to be annoyed’, ‘to have had it’, and ‘to go wrong’, respectively. On the other hand, the non-native speaker, lacking the automatic response, takes recourse to the literal level and finds that all three of the expressions lead to somewhat stark images involving the body or its functions. For the sympathetic reader, this constitutes a disturbance. Automatism is suspended in favor of exposure to the creativity that lies at the heart of the expressions and of feeling the native language in a new way.

Another method of injecting ‘the foreign view’ into a reader’s native language is to translate a foreign expression and thereby to create something new in the reader’s language. This is what Rafik Schami, a Syrian writer living in Germany, accomplishes when his narrator points out: “if the morning already starts out like a pile of dung, noon cannot smell

like rose water” (*Der ehrliche Lügner* 219; translation my own). This image does not exist in German; it lies beyond ‘the expected linguistic contingencies’. The im-possible experience here comes with the ability to translate the new or foreign to ‘indigenous’ comprehension. Importantly, this translation cannot be automatic but has to involve creative imagination.

While there are many more examples and there is much more to be said about these playful encounters between the foreign and the indigenous, time today only permits to draw some preliminary conclusions. When readers focus on the content or plot of a migrant writer’s work, they risk categorizing such work in terms of a foreign other that is understood as separate or additive to an indigenous literary culture. Paying instead particular attention to a text’s aesthetics opens the possibility to perceive a ‘becoming’ world in which im-possible (language) experiences occur that blur the borders which separate cultures or nationalities. Moreover, as the foreign and indigenous intermingle and inform each other, one cannot describe the texts as creating a hyphenated entity such as Turkish-German, Japanese-German, Syrian-German, etc. Rather, the texts belong to a transcultural realm in which the foreign becomes inseparable from the indigenous history as much as the indigenous becomes part of the foreign. The point is precisely *not* to create a link between any two cultures (which would keep each distinct and separate) but show a hybrid culture—dependent on all of its constitutive elements—that continues to emerge in a ‘becoming’ world. I conclude with a quote from Yoko Tawada, who advises: “Don’t build a bridge / between here and there / Let the gap live on / on a bridge they stop / to spit into the water / first they spit stones / then they spit themselves / don’t build a bridge / Let the gap live on / out of the gap comes a miracle” (*Wie der Wind* 44; translation my own).

### References:

- Ateş, Seyran. *Wahlheimat. Warum ich Deutschland lieben möchte*. Berlin: Ullstein, 2013.
- Nancy, Jean-Luc. *The Creation of the World or Globalization*. Trans. François Raffoul, David Pettigrew. Albany: State U of NY, 2007.
- The Oxford English Dictionary*. <http://www.oed.com/>.
- Seyhan, Azade. *Tales of Crossed Destinies. The Modern Turkish Novel in a Comparative Context*. New York: Modern Language Association, 2008.
- Schami, Rafik. *Der ehrliche Lügner*. München: Deutscher Taschenbuchverlag, 1992.
- Schiller, Friedrich. *On the Aesthetic Education of Man*. Trans. Reginald Snell. Mineola, New York: Dover, 2004. Electronic Book.
- Özdamar, Emine Sevgi. *Das Leben ist eine Karawanserei. Hat zwei Türen. Aus einer kam ich rein. Aus der anderen ging ich raus*. Köln: Kiepenheuer und Witsch, 1992.
- Tawada, Yoko. *Aber die Mandarininnen müssen heute Abend noch geraubt werden. Prosa und Lyrik*. Tübingen: Konkursbuch, 1997.
- . *Das Fremde aus der Dose. Essay*. Graz: Droschl, 1992.
- . *Ein Gast. Roman*. Tübingen: Konkursbuch, 1993.
- . *Verwandlungen. Tübinger Poetik-Vorlesungen*. Tübingen: Konkursbuch, 2001.
- . *Wie der Wind im Ei*. Tübingen: Konkursbuch, 1997.
- . *Wo Europa anfängt*. Tübingen: Konkursbuch, 1991.

## ABOUT SOME UNKNOWN ASPECTS OF IONA KHELASHVILI'S (1778-1837) LIFE AND WORK

*Metropolitan of Poti*  
*Khobi Grigol (Berbichashvili), PhD Student*  
Grigol Robakidze University, Tbilisi, Georgia

---

### Abstract

Great Georgian philosopher and theologian Iona Khelashvili (1778-1837) lived and worked in the period and epoch marked by very dramatic events for Georgia. Important aspects of the biography of this Georgian thinker have not been studied yet. The aim of the following article is to study and make as a subject of special discussion those stages and episodes of life of Iona Khelashvili which are unknown or need specification and further research. For this purpose, the author of the paper studied historical materials and documents kept in the Central State Historical Archive of Saint Petersburg that were unknown for researchers of Georgian philosophical thought so far. Based on the unknown materials and documents, the author revealed many important details, episodes and moments from Iona Khelashvili's life and work (one of the important findings is the establishment of the date of his birth).

---

**Keywords:** Iona Khelashvili, Life, Work, Biography

### Introduction

Iona Khelashvili, a.k.a. Monk Iona, is one of the important representatives of Georgian philosophical theology. He lived and worked in the end of the 18<sup>th</sup> and in the first part of the 19<sup>th</sup> centuries. This was the epoch marked by dramatic events for Georgia.

Located on the important geopolitical crossroad, the Georgian state, hoping for development after the lengthy and exhausting wars with Ottoman Empire and Iran, concluded the treaty of alliance known as "The Treaty of Georgievsk" with Russian Empire in 1783. Unfortunately, further events revealed that the hopes of Georgian political leaders were not realized. On the contrary, Georgian state disappeared from the world map at all. Based on the manifesto issued by Emperor Alexander I of Russia on September 12, 1801, the kingdom of Kartli-Kakheti was abolished and on the basis of the same legislation it became the South province of the Russian Empire. For further strengthening of imperial policy in 1802, Paul Tsitsianov (Tsitsishvili, relative of the spouse of George XII, Queen Mariam) who served in Russia for a long time and had a Georgian origin was appointed as the Governor-General of Georgia. The Russified Georgian was quite acceptable and desirable candidate for the Russian Empire for implementation of imperial policy in Georgia (in Caucasus Tsitsianov earned the nickname "the formidable prince").

As Georgian princes did not wish to leave the homeland and it was difficult for the Governor-General to persuade them to move to Russia, he used force and in 1803-1805 exiled almost all of the members of royal family into the Russia. After using the force, Tsitsianov managed to win the favor of Georgian princes and former officials and nobles of Georgian kingdom with political tricks: by his advice, they received ranks in Russian Empire and were granted personal pensions. In addition to this, temporarily was renewed already

cancelled institute of the governors (*mouravi*), thereby reconciling the dissatisfied nobility as well. During the period of Tsitsianov's government, Russian laws were translated into Georgian. In addition to the implementation of Russian legislation, Russian administration in Georgia rudely interfered into the activities of the Georgian Church that revealed far-reaching imperial aims. In 1811, Russian Empire abolished autocephaly of the Georgian Church. In a very short period of time Georgia was annexed by Russian Empire and its Apostolic Church fell under the government of Russian Holy Synod and Ober-Procurator. Such is the period when Iona Khelashvili lived and worked.

Khelashvili is the author of dozens of works in which are given very important theological, philosophical, esthetical and literary views. He was the writer, researcher, philosopher, confessor to the house churches of children and grandchildren of Erekle II and tutor and mentor of many Georgian public figures.

Unfortunately, because of lack of biographical notes and documents, many aspects of Khelashvili's life are still unknown. The aim of the present paper is to discuss important stages of his life. In addition to the sources well known for researchers, documents kept in the Central State Historical Archive of Saint Petersburg were of particular importance.<sup>105</sup> As it was known that Khelashvili studied, lived and worked for years in Saint Petersburg (where he found his eternal rest), we supposed that in this archive we would have been able to find materials (historical, documentary, scientific or epistolary) related to unknown aspects of his life. In the course of the research, we were able to find very interesting materials regarding Khelashvili's biography. These materials were critically analyzed and compared to other documents. The author hopes that these findings will enrich our knowledge of Khelashvili's biography with new and interesting details.

### **About the Date of Birth of Iona Khelashvili**

There are different views regarding the date of birth of Iona Khelashvili (as about other details of his life which we will discuss later) that creates some kind of confusion. The researchers indicate several possible dates of birth (1772, 1775, and 1779). Because of lack of information, it was impossible to establish the exact date of birth (including day and month), but regarding the year of birth, the documents found in the Central State Historical Archive of Saint Petersburg were especially helpful.<sup>106</sup>

In the journal of Saint Petersburg Consistory, there is a very interesting and significant record dated back of September 17, 1812:

“We are requested to obtain information from the ipodeacon<sup>107</sup> [i. e. Iona Khelashvili] about his age and marital status.”

As it turned out, prerequisite of this record was Khelashvili's request to the Metropolitan Ambrose and the analogous request made by the Prince David regarding consecrating Iona as a monk. As a result of this request, on September 19, 1812 Georgian ipodeacon Ivane Khelaev (Russified version of Khelashvili's name and surname) was questioned in Saint Petersburg Consistory and detailed record about his origin, marital status, and education was made. According to the appropriate document:

“He, Khelaev, Georgian, was born in village Vakir of Tiflis province. His father Giorgi Khelaev who was the priest of the same village, is already dead, and Khelaev himself studied at Telavi school for five years where he studied the sciences taught there. He was not married, and he is 34 years old.”

From this record, it is clear that for September 19, 1812 when the questioning was held, according to his own testimony, Khelashvili was 34 years old. The questioning is

<sup>105</sup> (ЦГИА СПб Ф. Оп. 11. Д. 367).

<sup>106</sup> ЦГИА СПб Ф. Оп. 11. Д. 367, л.17-18.

<sup>107</sup> The ipodeacon is the highest rank of the small orders of the Church clergy.

confirmed by Khelashvili's personal signature of and accordingly, the date of his birth should be considered as 1778.

Famous French scientist, academician Marie Brosset considers 1772 as Khelashvili's date of birth, referring to the inscription on his gravestone. As it is known, Brosset carefully studied the epitaphs of Georgian gravestones in Moscow and Saint Petersburg, and among them the inscription on Khelashvili's gravestone. Unfortunately, today the grave is considered as missing but in spite of this, we have the text of the inscription of the gravestone studied by Brosset which contains biographical data about Khelashvili. In this text, 1772 is indicated as Khelashvili's year of birth. It is unknown on what sources relied the author of this epitaph when indicating this date. Therefore, the text of the journal of consistory seems more reliable, because in it Khelashvili himself confirms his age, place of birth, origin, parents' names, conditions of education and childhood aspirations. So far there has not been obtained more convincing evidence which may support the other date. Hence, it is possible to assert that Iona Khelashvili was born in 1778.

### **Childhood, Adolescence and Early Years of Education**

Khelashvili's ancestors, whose surname was Mikhelashvili, moved from village Zemo Khodasheni to Vakir during the reign of Teimuraz II (1680-1762). In Vakir they changed their surname to Khelashvili. Iona, secular name Ioane, was born in village Vakir in Kiziki. He provides this information in his autobiographical work *Ronini* ("Wanderings") [7, 90].

Young Ioane was put under the tuition of the local church priest in Vakiri by the consent of his parents. "With my parents' consent I was given to the priest of the above mentioned church to study", wrote Khelashvili in his autobiography. He enjoyed being in church very much and worked there from sunrise until nightfall. He was keen to help the priest during divine service.

Khelashvili had a thirst for education from his adolescence and this feeling was so strong that he secretly left for Tbilisi without his parents' permission where, by God's will and by the help of kind people, he turned out in the palace of Erekle II. Iona worked as the servant of the chief Cook in the king's palace.

King Erekle put him under the patronage of his confessor and deacon of Metekhi Church Iese. The young boy was very successful in learning. He studied the Georgian alphabet (all three types: Asomtavruli, Nuskhuri, and Mkhedruli) and reading and writing in a very short period of time. During studying, he was informed that Laks (people who live in Caucasus Mountains and raided Georgian villages) killed his young father – Giorgi Khelashvili. This news made Iona very sad. It was then when he felt special responsibility for his family members, brothers and mother.

The sorrow for the father's death was complicated when Iona became ill with typhus. Because of this, he was forced to leave the king's palace. After recovery, Iona had to return home. Soon after that, mother became very ill and died together with her small son. The death of parents and sibling left Iona inconsolable.

As it is known from historical materials, after being defeated in the battle of Krtsanisi in 1795, King Erekle escaped to mountainous Mtiuleti. He returned to Tbilisi passing through Kakheti. In this period, he met young Iona in Kakheti. The old king again received Khelashvili and sent him to study in Bodbe Monastery to the Metropolitan Ioane. However, Khelashvili did not stay for a long time there because of scarcity of books in the church library. The only book he had was the Psalm received as the present from the king. Being thirsty for learning and quite purposeful, Iona again visited King Erekle in Telavi to ask him for help. King moved to pity and took orphaned brothers – Solomon, Grigol and Iona to the palace. Iona was put under the instruction of royal priest, scribe Ioane (Kalatozishvili). "By the order of his Majesty" Iona was allowed to use books from the king's chapel.

On January 11, 1798, Erekle II died. After the death of the caring king, Iona fell into the difficult situation: he had no books, no food, no appropriate clothing. In such a situation he addressed to Giorgi XII for help. The king sent the talented young man to Rector David (Aleksishvili) to Telavi Seminary who taught the young man “proper wisdom”. On December 18, 1800, Giorgi XII died. After this, Iona went to David Gareja Monastery.

Iona’s story clearly reveals political decline and poverty of Georgia in the end of 18<sup>th</sup> century. It also tells much about Khelashvili personality: in spite of poverty and continuous difficulties, only strong faith, commitment and great desire for receiving knowledge could have helped this young man not to give up to the difficulties and renounce his good intentions.

After visiting the monasteries of David Gareja and Shio-Mghvime approximately in 1802-1803, Iona settled in Natlismtsemlis Monastery in Kvatakhevi where he spent three years. It is likely that he became the novice there. I would like to pay more attention to this detail because various scholars assume that Iona was consecrated as a monk in Kvatakhevi<sup>108</sup>, which does not reflect the real case. It seems that the inscription on Khelashvili’s gravestone studied by Brosset was not interpreted correctly. Below I cite the appropriate passage from the above-mentioned inscription:

“I was robed at the famous monastery in Kvatakhevi and I became the servant of holy monks who served there.”

This inscription means nothing more than that he became a novice (and not a monk). It is a generally known fact that there is the institute of novices at the monastery. By this, the one who wishes to become monk is examined during several years: after some period, he is being robed and becomes ipodeacon. *As a rule, the one serving as ipodeacon is not a monk but this is some kind of preparation for being a monk.* In Russian sources, Iona is mentioned as the ipodeacon. Therefore, as Khleashvili is mentioned as Georgian ipodeacon Ivan Khelaev in official documentary sources, and the story described in the autobiographical work *Ronini* (about being in Kvatakhevi for three years) as well as the fact of robing mentioned in the inscription of the gravestone are in accordance with one another, it can be concluded (as there are no contrary arguments) that *at Kvatakhevi monastery Iona Khelashvili became a novice and thereafter, he became the ipodeacon.* Iona was consecrated as a monk later in Russia.

In Kvatakhevi Monastery Iona had to live under hard conditions. He performed his service with belief, love of God and patience. The novice worked a lot, helped the needfuls in the neighbour villages and won the favor of many people, though his heart was thirsty for learning and so he was distressed by the lack of books.

At Kvatakhevi Monastery Iona learnt that by the order of Emperor Alexander, the members of the royal family were leaving for Saint Petersburg which brought him in desperation as the princes were his patrons. As a result, he decided to follow them to Russia.

### **From Tbilisi to Saint Petersburg**

In the beginning of April, 1805 Khelashvili followed prince Pharnaos and his family to Russia. After the long travel, they reached Voronezh on May 31, 1805. In Voronezh, they stayed for a year. In this town Iona was hosted by eighty-year-old man Timote Borodin.

In 1806, by the order of the Emperor the royal family and their escort were allowed to continue the way to Moscow. Iona did not stay in Moscow and continued the way to Saint Petersburg.

<sup>108</sup> See K. Kekelidze, *History of Georgian Literature*, vol. 1, Tbilisi 1941. p. 370; G. Dedabrishvili, *Corpus of Georgian Epistolary Sources*, vol. 6. Tbilisi 2000, p. 5; T. Tseradze, *Iona Khelashvili (1775-1837)*, <http://www.qim.ge/iona%20xelashvili.html> (accessed 17 July, 2014).

### **At the Saint Petersburg Theological Seminary (Study of the Foundations of Philosophical Theology)**

In Saint Petersburg, closeness to the members of the Georgian royal family was great consolation for Iona. Catholicos Anton II, who was very attentive towards him, sent necessary books to Iona. Prince Ioane taught him ancient Greek and modern German philosophy and trained him in theology for three years. Prince David helped him a great deal to receive good education. He addressed with the request to the Emperor Alexander. The Emperor became interested with Khelashvili's personality and assigned his case to the Ober-Procurator of the Holy Synod.

In the materials of Saint Petersburg Consistory, there are documents which give detailed information about Khelashvili's education in Russia.

Alexander Nikolayevich Golitsin who served as Ober-Procurator of the Holy Synod of Russian Orthodox Church in 1803-1816, addressed the Metropolitan of Saint Petersburg Ambrose by the letter on April 26, 1809:

“Georgian ipodeacon Khelaev came from Georgia and has desire to study at the theological seminary. His Majesty the Emperor ordered to present him to you and appoint the appropriate person who will examine Khelaev in order to find out in which college he is able to study; the study and living expenses would be given by the cabinet [Refers to the Emperor's cabinet].”

In addition to this, Ober-Procurator Golitsin requested from Metropolitan further information about expenses. From the resolution to this letter (26.04.1809) is revealed that it was ordered to present Khelashvili to the Rector of the Saint Petersburg Theological Seminary, Archimandrite Evgraph. The same day the Rector of the seminary Father Evgraph informed Metropolitan Ambrose in a written form:

“Georgian ipodeacon Khelaev sent by your holiness for examination of his knowledge has shown some knowledge in philosophy and theology and can do far more if he beforehand acquires the ability of thinking and explaining even in Russian as he does not master basic scientific languages. Though, he understands Russian but speaks with difficulties and mistakes.”

Metropolitan Ambrose (Podobedov) allowed Iona to live in the dormitory of low classes in order to acquire better Russian. Khelashvili was also allowed to attend lectures in the elementary class to study Russian grammar. In addition to this, he attended theology lectures.

On May 7, 1809, Khelashvili enrolled at Saint Petersburg Theological Seminary. After three years, on March 5, 1812, Iona graduated seminary which is certified by the copy of the following document:

#### **Certificate**

Georgian ipodeacon Ivan Khelaev studied at the Seminary at Saint Petersburg Russian reading and writing, dogmatic and moral theology, church history, Russian grammar, philosophy and arithmetic, with quite good marks, always behaved honestly.

March 15, 1812.

The original is signed by:

Rector Archimandrite Anatol

Inspector Archimandrite Method

Priest Petre Turchaninov

Secretary Andrei Ivanov

Ivan Khelaev [personal signature with block letters]

### **Iona Khelashvili's Life and Work in Russia**

Literary life was flourishing in Saint Petersburg in the first half of the 19<sup>th</sup> century. Literary circles and salons were widespread in the capital of Russian Empire. Georgians also established their literary salon. The representatives of this circle were mainly princes: David and Ioane, Grigol, Mirian, Pharnaoz, Ilia, Okropir and Teimuraz. Iona Khelashvili also was a member of Georgian literary salon in Saint Petersburg. He was respected for his intellect, knowledge and experience [3]. What respect he received is seen from eulogy in a form of iambus which was dedicated to Iona by princes Teimuraz and Mirian, Petre Laghidze and Solomon Razmadze. Iona's services and knowledge was described by Ioane Batonishvili in his work "Kalmasoba" (1813-1828) in which he presented Khelashvili as the literary character.

Georgian monk known for his knowledge and honesty became a confessor of Georgian colony (royal princes, queens and other nobles). Khelashvili served at the house church of queen Ana for three years and later went to the house church of Prince Teimuraz where he served until 1824. From this period until death, Iona served at the house church of Queen Mariam. The monk known for his honesty, wisdom and devotion was much respected among the members of royal family and he always tried to plant peace and love among the members of Georgian colony.

The toiler monk separated from the homeland still cared for the prosperity of Georgia: "I work day and night in order to multiply writings in Georgian language. I wish that one day schools were filled with pupils" – said he in one of his sermons [6]. He also dreamt of that time when "publishing houses will start to publish books [...] then Georgia will blossom and become the second Athens." In autobiographical work *Ronini* and also in various church sermons and private letters he often referred to political and social issues concerning Georgia and considered that the lack of proper system of education was one of the main reasons which played a significant role in the downfall of the country [7].

During his life in Saint Petersburg Iona supported Georgians who came to study in Russia. That he cared for and materially supported young Georgians visiting Russia is confirmed by many letters which he received in Saint Petersburg. In these letters young people asked him for help and guidance.

Khelashvili played a great role in the education of Georgian philosopher and logician Solomon Dodashvili (1805-1836), whom he called "son". By the help of Iona, Dodashvili enrolled at the University of Saint Petersburg. Khelashvili did his best to help the talented apprentice to master the science.

In the annexation of Georgia by the Russian Empire in 1801, Iona saw the fall of the "Christian Bagratians' house".<sup>109</sup> In his sermons dated from 1810-1820, he expressed extreme pessimism regarding "the downfall of the country". However, later in 1830s, his position became different. "You are a small nation and cannot defend yourself without the patron" – such was his address to his homeland. At that time, Khelashvili's views underwent metamorphosis and he estimated Russo-Georgian relations in a new light. Unfortunately, this line of thought was supported by many Georgians living in Russia, who saw the perspectives of economic, political and cultural development of Georgia in the unity with Russia. Because of this, Iona did not sympathize the conspiracy of Georgian nobles in 1832.

"Philosopher's wealth is service to God" – admonished Iona his apprentice Dodashvili and advised him to give important place to theology in his philosophy. He himself dedicated all his conscious life to development of his own and others' intellectual abilities in addition to serving to God.

---

<sup>109</sup> Bagrationi - royal dynasty that ruled Georgia from the Middle Ages until the early 19th century.



During his activity in Saint Petersburg Iona created more than forty literary works, wrote numerous philosophical, theological and pedagogical papers. His sermons and personal letters are also of great importance because in them one can find not only important views about contemporary social life in Russia but also wealthy materials about life and work of many outstanding Georgian persons of that period.

God as the leading force of history; homeland and the reasons of its decline, necessity of education, protection of purity of Georgian language, freedom, faith, ethics, morals, patriotism – these are the issues and themes which permeate Khelashvili's work and epistolary heritage.

Some of the notable works by Khelashvili include “Book of thirty-four questions”, “Tripartite of theology”, and “Book of the Wedding of Orthodox Christians”. Especially interesting is “Georgian Dictionary” written by Iona on which he worked for 10 years.

The honoured monk passed away in 1837 during the work at his writing desk [6].

### **Conclusion**

Iona Khelashvili dedicated all his life to the development of Georgian culture. The young man's thirst for gaining knowledge underwent difficult life full with obstacles. Raised in the small Georgian village, he continually struggled to overcome difficulties with his diligence and persistence. As a result, at the end of his life, he was greatly respected among Georgians living in Russia. In addition to this, Khelashvili patronized and materially supported young Georgians who came to study in Saint Petersburg. As it was noted above, many aspects of life and work of Khelashvili remain unknown. Therefore, further research of the creative life of this many-sided person is of great importance. There is no doubt that such research will shed the light on the development of theology and philosophy in the 19<sup>th</sup> century Georgian thought.

### **References:**

- Chikobava A. (ed.). The Explanatory Dictionary of Georgian Language. Tbilisi, 1986.
- Dedabrishvili G. “About the Epistolary Heritage of Iona Khelashvili, Essays on History of Georgian Philosophical Thought. Tbilisi, 1969, pp. 158-186.
- Dedabrishvili, G. (ed.). Epistolary Archive of Iona Khelashvili (1809-1835), Tbilisi, 2000.
- Dondua V. Literary Heritage of Georgian Colony in Saint Petersburg. Tbilisi, 1965.
- Iremadze T. “Philosophical Theology of Iona Khelashvili”, Uplis tsikhe. Journal of Patriarchate of Georgia. 3 (2014). pp. 91-96.
- Kekelidze K. History of Georgian Literature, vol. 1. Tbilisi, 1941.
- Khelashvili I. Ronini [Wanderings], edited by S. Kakabadze, Tbilisi, 1959.
- Khutsishvili S. “The Life and Work of Solomon Dodashvili”, Materials for the History of Georgia and Caucasus. Part 2, Tbilisi, 1944, pp. 8-55.
- Makhatadze N. Solomon Dodashvili's relationships with Georgians Living in Saint Petersburg. Literaturuli dziebani, 26, Part 1, Tbilisi, 2005.
- National Centre of Manuscripts, [6, F 7].
- Zakaradze L. “Iona Khelashvili – Great Georgian Theologian at the Crossroads of the Epochs”. Uplis tsikhe. Journal of Patriarchate of Georgia, 2 (2012), pp. 70-74.
- Central State Historical Archive Saint of Petersburg. Fund 19, case 367.

## CONTRIBUTION OF ANTIM IVERIELI AND MIHAI ISHTVANOVICH TO THE CAUSE OF THE ORGANIZATION OF THE GEORGIAN PRINTING HOUSE

*Ivane Imerlishvili, Prof.*

Grigol Robakidze University, Tbilisi, Georgia

---

### Abstract

In the paper the services of Antim Iverieli or Iberieli to his homeland Georgia are discussed, which are especially immense in the matter of the organization of the Georgian printing office. Antim Iverieli was born between the years of 1650-1660 and died in 1716. The King of the Georgians Vakhtang VI asked the Patriarch of Jerusalem to give him a helping hand in the organization of the printing office. The Patriarch of Jerusalem Crizanth Natharas forwarded the request of the King of the Georgians to Antim Iverieli to Rumania. As soon as Antim received the permission from the Rumanian ruler Constantin Brancoveanu (1688-1714) to render help to the King Vakhtang VI, he immediately sent to Tbilisi his best printer Mihai Ishtvanovich.

---

**Keywords:** To organize, Organization, Printing Office, To print, Printer, Language

### Introduction

I would like to speak about Antimoz Iverieli. The records of an Italian Anton Del Chiaro Fiorentino, who was an adviser of the Prince of Vlacheti Constantin Brancoveanu, help us to elucidate that Antim was called Andrea in a secular life. Besides this note, Antim is also mentioned as Andrea in the encyclopaedic dictionary of Brockhouse and Efron, Volume XXVII, p.275, in which we read: "Metropolitan Andrea, who by birth was from Iberia, and who perfectly studied the Rumanian language was a fine orator."

Some Georgian researchers use Antimoz as a name. But Antimoz is the Greek expression. Antim personally calls himself Antim in the Rumanian documents. As to Iverieli, this nickname means that a person who bears it is from Georgia, exactly from Eastern Georgia. "Iveria" or "Iberia"<sup>110</sup> what is the Greek name for Georgia. Besides, in the books published in the Arabian language, Antim directly calls himself "gurji"<sup>111</sup> (this Turkish word means Georgian and it also denotes the name of a person of Georgian nationality widespread amongst the Mohammedan peoples). An academician Giorgi Leonidze asserts that Antim's nickname "Iverieli" is derived not from the Iberian monastery on Mount Athos but is identical with the Turkish word "Gurji" that in the Georgian language means "Kartveli" (Georgian) expressing nationality.

Antimoz, as he himself points to his own extraction, is from Iveria, migrated from the land of the Iverians (the Iberians) under compulsion.

Antimoz, who was kidnapped from Georgia, was bought as a slave in Constantinople (Istanbul) in the slave-market by the Patriarch of Jerusalem Dositheos who took Antimoz away together with him to Iasi where he taught Antimoz the printing of books in the Greek printing office founded in 1682 in Jassy. Exactly from this town Consantin Bramcoveanu

---

<sup>110</sup>Iveria or Iberia - An ancient name of an Eastern Georgia (Kartli).

<sup>111</sup> The Literary Heritage, Book I, Tbilisi, 1935, p.169.

invited Antim Iverieli to Vlakheti when he wanted to carry out the cultural reforms and ordered the highly educated past master to organize printing.

### **Contribution of Antim Iverieli and of Mihai Ishtvanovich to the Cause of the Georgian Printing Office**

Antimoz was a wonderful calligrapher, artist, architect, xylographer, engraver, and sculptor. He knew a lot of foreign languages: - Besides the native Georgian language, he spoke several languages, viz Greek, Arabic, Rumanian, Old Slavonic (Slavic), Turkish. In Vlakheti, Antim Iverieli established the four printing offices where the books had been printed in different languages. The first steps of the activities of Antim Iverieli as a printer in Vlakheti is connected with the printing office set up in Bucharest in 1678.

In 1691, at first Antimoz began to work as a foreman of the printing office in Bucharest. In summer of the same year Costantin Brancoveanu appointed Antimoz as a chief of the printing office.

In the same year of 1691, Antimoz published the first book translated from Old Greek into New Greek by Crizanth Natharas under the title "An Advice of Basil I the Macedonian to His Son Leon."

Antimoz studied the Rumanian language well and in 1694 he was appointed as a priest at Snagovo monastery. This monastery is built on the island situated in Snagovo Lake which is at a distance of 34 kilometres from Bucharest. Antimoz founded the first printing office in Snagovo and took on the apprentices. In 1702, he left Snagovo printing office and moved to Bucharest. In 1705 Antimoz was elected to be the Archbishop of Rimnic. (The ruler of Vlakheti recognized Antimoz as the worthiest man for the post). Antimoz organized the printing office in Rimnic too, prepared the ground for a church service in order that it would be held not in Greek but in the completely understandable Rumanian language for the people in Ardeal, in Moldova and in Muntenia. With this end in view Antimoz printed the ecclesiastical books in necessary amount beforehand and, at the same time, conducted the ecclesiastical reform in the Rumanian language. All these ecclesiastical books had the inscriptions in the front: "Antimoz Iverieli – The Archbishop of Rimnic. On the 27-th of January of 1708, Metropolitan Theodose passed away who left the will according to which Antimoz Iverieli should be elected as the Metropolitan. It follows that Antimoz enjoyed a great recognition and influence in Rumania. On the 21-st of February of 1708, Antimoz was confirmed as the metropolitan of Romania.

Generally speaking, Antimoz was an uncrowned King of Rumania. The merit of Antimoz Iverieli is very great. It goes beyond Georgia and exceeds the frontiers of Rumania and it is considered to be of great importance from the point of view of mankind. Antim Iverieli was one of the reformers of the Roumanian literature. He was really a brilliant writer and recognized orator. He made a name for himself as the greatest humanitarian and enlightener of his times.

According to the famous Georgian scientist Otar Gvinchidze, Antim Iverieli besides his cultural and public activities took an active part in the political life of Vlakheti. He incessantly fought against the rule of the Turks for the liberation of Rumania. Antimoz Iverieli fought for an independence of the Rumanian Church and State. He was at the head of an anti-Turkish patriotic-liberatory movement. In his propagation he boldly revealed the dissoluteness of the boyars, their anti-patriotism and called on all people to fight against Turkey for the liberation of their country. The Rumanian authorities did not like such a thing. He was arrested, deprived of the title of Metropolitan and was sent into exile for life to the monastery of St Catherine situated on Mount Sinai, but on the way, as it is supposed, the Turk soldiers who were accompanying Antimoz, assassinated him and threw his corpse into the river. This event happened on the 12-th of September of 1716.

The Romanian people love Antimoz, mention him with respect and not only the street, the temple and the museum bear his Christian name and surname; there is also a separate corner describing and presenting documentarily his activities in the State Museum. His photos are taken into the street and are shown at the demonstrations together with the photos of their leaders by the Rumanian people.

Altogether Antimoz wrote 4 books, the prefaces for 10 books, the verses for 5 books, the epilogues (the epilogues) for 6 books.

Antimoz printed 30 books in Greek, 24 books in Rumanian, 1 ecclesiastical book in Slavonic, 8 books in Greek and in Rumanian, 2 books in Greek and in Arabian, 1 book in Greek, in Slavic and in Rumanian. In all, he printed 67 titles.

And now before we start to discuss the history of the first Georgian printing office in Tbilisi, let us find out who Mihai Ishtvanovich was with whose name the printing of the first Georgian books is connected.

Ishtvanovich, as is generally know, was from Transylvania or Ungrovlakheti, but he masters the “Art of Johannes Gutenberg” (1390-1468) directly under the guidance of Antim Iverieli.

It should be noted that at the end of the 17-th century, the orthodox population were experiencing a great oppression from the point of view of strengthening of the Catholic Church and Mihai Ishtvanovich was forced to leave Transylvania.

Mihai Ishtvanovich followed the road from Transylvania to Vlakheti which was already trampled down many times<sup>112</sup>, - writes the Rumanian researcher Virgil Molin.

Mihai Ishtvanovich mastered “The trade wrapped in mystery” to such a degree that soon he became famous in the field of activity of printing as a fine past master. And now Mihai Ishtvanovich, the best pupil of Antim Iverieli, following the directions of his own teacher comes to Georgia. The activities of Mihai Ungrovlakheli in Georgia cover the years of 1708-1711 including the year of 1711. The worthy pupil of Antimoz deserved a universal respect in Georgia.

In the years of 1707-1708, in the printing office built by the order of King Vakhtang (Near the palace of the King, beside the temple of John the Baptist) under the guidance of Mihai Ishtvanovich the printers began to work. The printing office was the building consisting of ten rooms.

The type of the first printed Georgian books was made in Tbilisi.

Mihai Ishtvanovich, during the years of 1709-1711, printed ten titles at Tbilisi printing office. These books are: “Sakhareba” (The Gospel), 1709; “Davitni” (The book of Psalms), 1709; “Samotsikulo” (The Acts of the Apostles), 1709; “Kondaki” (The Songs of Praise), 1710; “Zhamni” (The Book of Prayers), 1710; “Lotsvani” (A Collection of Prayers), 1710; “Zhamni” (The Book of Prayers), 1711; “Biblia” (The Bible), 1711; “Davitni” (The Book of Psalms), 1711; “Stsavla”, “Tu Vitar Martebis Modzgarsa Stsavleba Motsapisa” (The Teaching, or How a Priest Should Teach His Pupil), 1711.

In 1712 was printed “Vepkhistkaosani” (The Knight in the Tiger’s Skin) by the son of the archpriest of the crown court Micail to whom Mihai Ishtvanovich taught the printer’s trade.

The printing office of King Vakhtang existed till the years of 1709-1712. On the 23-rd of April of the year of 1712, Vakhtang VI was recalled from Georgia to Persia.

There was not printed any book in Tbilisi from 1713 up to 1717.

In 1719 was printed “Ganmarteba Eklesiisa, Kurtkheva Eklesiisa Da Kurtkheva Odikisa” (The Meaning of a Church, The Consecration of a Church and the Consecration of a Robe With a Depiction of Christ in a Coffin on It), which was translated from the Greek

---

<sup>112</sup> Otar Gvinchidze – Antim Iverieli, Tbilisi, 1973, p.174

language into Georgian by Kvipriane Samtavneli according to the instructions of the Patriarch.

In 1721, Vakhtang VI who had already returned to Georgia from Persia printed his own translation from the Persian language into Georgian under the title “Haiati”<sup>113</sup> done while being in Iran and which must be considered as the first printed scientific book and which is the learned work of an astronomical content.

### Conclusion

In 1724, Vakhtang VI went to Russia to settle down there. He took with him a lot of manuscripts as well as the printed books and lived sometimes in Saint Petersburg and sometimes in Moscow. He died in Astrakhan on the 20-th of March, 1737, and took his dashed hopes for becoming again the King in Cartli together with him to the grave.

Since Vakhtang moved to Russian to live there, the printing office which was devastated by the enemy (by the Turks) had been abolished for a long time.

In 1751, the functioning of the printing office was renewed by King Erekle II through an expert in printing from Constantinople.

Thus, it is getting clear that by organizing Tbilisi printing office Vakhtang carried out one of the greatest desires of the whole progressive Georgian people. Consequently, the first printing office in Georgia was created with the help of King Vakhtang VI, Antimoz Iverieli and certainly with the direct participation of the Hungarian expert in printing Mihai Ishtvanovich.

### References:

- Gvinchidze O. Antimoz Iverieli. Tbilisi, “Science”, 1973.
- Imerlishvili I. The Georgian and the Hungarian Cultural-Literary Relations in the XVII-XVIII Centuries. The Thesis For Getting Master’s Degree In Literature, The Georgian Academy of Sciences, Shota Rustaveli Institute Of Georgian Literature, Tbilisi, 1990.
- Karichashvili D. The History of the Printing of the Georgian Book. Tbilisi, 1929.
- Kurdghelashvili Sh. From the History of the Georgian Printing Office. Tbilisi, 1959.
- Shanidze A. For The History of the Georgian Printing Office, the Literary Heritage. Book I, Tiflisi, 1935.
- Sharadze G. Miklos Kis Totfalusi and the Georgian Printing Office. Tbilisi, 1982.
- Sharashidze C. The First Printing Office in Georgia (1709-1722). Tbilisi, 1955.
- Chichinadze Z. The Georgian Printing Office and King Vakhtang VI. Tbilisi, 1909.
- Haiman G. Miklos Kis and the Beginning of the Georgian Book Printing. “The Messenger”/The Series of Language and of Literature/, N2, 1982.

---

<sup>113</sup> Haiati (Haiat in Arabian) – means an astral world in the Georgian Language. In the ascertainment of the origin of this word and by translating it from Arabian into Georgian helped us the specialist of the Turkish language Ms Nana Tartarashvili for which we thank her very much.

## SOME ASPECTS OF THINKING AND CORRECT WRITING CULTURE IN MODERN METHODOLOGY

*Manana Kajaia, Associate Prof.*  
Georgian Technical University, Tbilisi, Georgia

---

### Abstract

Language diversity shows how different is the way of thinking and world vision in different nations. It determines our social and cultural consciousness. Therefore, it is very important to develop correct speaking and writing culture in students.

---

**Keyword:** Language, speaking, writing, sentence, paragraph

### Introduction

Language can influence our social and cultural consciousness, and in some cases it can even determine it in general. Today, this question is still the corner stone for those who are interested in science, culturology and anthropology.

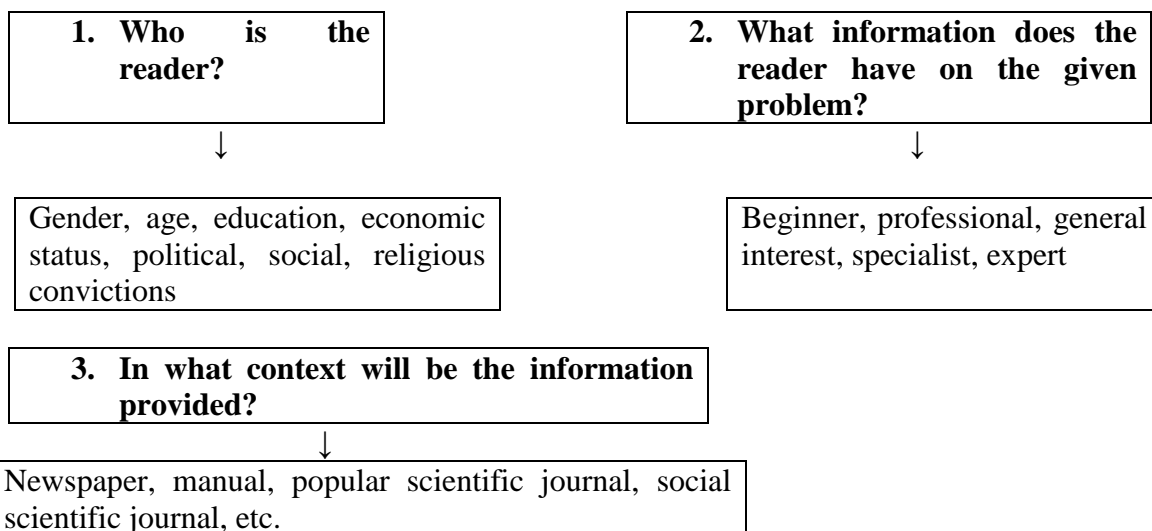
We owe our knowledge of conscious structures to a natural language, which allows us to speak about those structures and to describe them. Language is the reflection of national consciousness. Language diversity shows the different way of thinking and world vision in different nations. Language determines the social and cultural consciousness.

According to N. I. Formanovskaya, “In the narrow sense, language etiquette is a range of specific national rules of language behavior used in situations of getting into contact and maintaining the relationship in the same tone selected according to the situation, the social sign of communicants and the character of their relationship. One more thing why the etiquette formulae are unique and universal is that they cover all the fields of the human activity. From this point of view, it is useful to classify etiquette formulae according to the existing creative fields and apart from the language formulae to describe a considerable fragment of the culture characteristic of the language that carriers and creates a global picture of nations and languages.”<sup>114</sup>

According to M. Jusupov, language activity must be followed and ended by speech. On the basis of correct speech, people can also develop a culture of correct writing. We can construct a sentence by means of word combinations. Therefore, we must know how to combine the words.

---

<sup>114</sup> N.I. Formanovskaya. Application/use of the Russian language etiquette. Moscow, Russian Language, 1084, p.5.

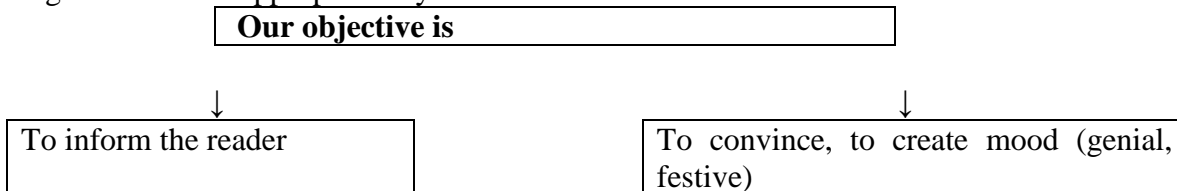


**Writing is much easier, when:**

↓                                      ↓                                      ↓  
The subject of writing is clear for us.      We have a clear objective of writing.      We know what we are writing (topic and question).

Students should be interested in the question they are to write about. The choice is upon students themselves. However, sometimes there are some extremities when they cannot understand what is important and interesting for them. The necessary condition is what we know about the specific topic and what our idea is about its potential reader. It is necessary to specify the topic and to gather information. The more information we have the easier we will write.

As to the objective of writing, it will help us to select the context and structure of writing as well as an appropriate style.



In some cases one of the several objectives presented in the text is dominating. Given the topics:

- My street
- My friends
- My city

It is necessary to give them preliminary exercises, e.g., to find an interesting issue for them in the topic they selected; to define the objective of writing and the target readers; to give them a task to write a paragraph, topic/issue.

Afterwards let them begin writing.

They can be given the exercises of some other type as well:

Refer to various addressees:

**Situation**

Your house was damaged in the disaster. It needs an immediate repair. But you do not have enough money for that. Task:

1. Write a letter to your best friend explaining the situation and ask him financial support.
2. Write a letter to the housing committee of the city municipality explaining the situation and ask them a support.
3. Write a letter to your bank manager to provide a cheap credit.

After completion the task, answer the following questions:

1. What is the difference between these letters?
2. Which of the letters is more difficult to write and why?

I would like to give you some information about writing a paragraph as we have mentioned it above.

Paragraph is a group of sentences concerning one topic or an issue and expresses an idea or a viewpoint about it and related to it.

Paragraph begins with a thematic or principal clause covering the topic of the paragraph itself and its main idea.

**Main function of the paragraph can be**



**1. Thematic sentence**



Consists of two parts:  
Topic + developed idea



The most important component of the paragraph. It addresses information within the paragraph. It develops the idea or the viewpoint pronounced in thematic sentence by any sentence.

**2. Auxiliary -**

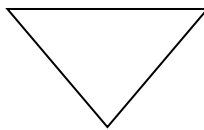
(developed) sentences – (reasons, facts)



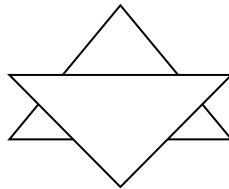
**3. Final sentence –**

The end. Conclusion. Different interpretation of the principal idea of the sentence.

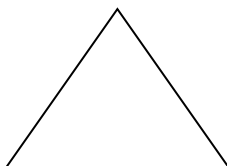
Thematic sentence is at the top of the paragraph.



It might be in the middle



at the end





or there might be no thematic sentence at all. There are also some texts without thematic sentences.

Introductory paragraph has a great function. It should introduce the background of the problem, attract readers' attention and motivate them to continue reading. There must be formulated a thesis, i.e., the main idea.

Concluding paragraph is the summation of the arguments provided by the author. It is the last chance to convince the reader.

Transitional words:

Eventually, in the end, thus, therefore, after that . . .

One of the attributes of a written work is the **thesis** consisting of one or two sentences, where the main idea is expressed.

Thesis is given at the end of the introductory paragraph conveying the whole.

For example, "An ambulance in Tbilisi."

The thesis can be formulated as follows:

In recent years the ambulances (topic) move faster and dynamically (my point of view) in Tbilisi, because more comfortable new cars have been introduced (reason).

Thus, we can clearly formulate the plan of the topic – the project, where we can develop any point into a paragraph or even into a chapter.

### Conventional heading

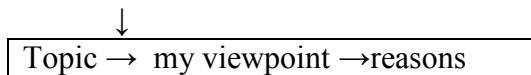
Movement of Ambulances in Tbilisi.

### Introduction

The thesis: In recent years the ambulances move faster and dynamically in Tbilisi.

### Conclusion

The thesis



It is necessary to have a wide vocabulary to write well and to use transitional words in that.

Transitional words: First of all; then; also; besides; the more so; in addition; eventually; the most important, etc.

### Conclusion

We have considered one of the aspects which is a necessary condition for developing the culture of writing in young people. Self-confidence can help them to overcome the difficulties. After cognition of their own learning ability, they may take on studying with more interest and diligence. Therefore, effective teaching of those elements which will help them in speech and writing is very important and the teacher has the main role in that process.

### References :

Formanovskaya N.I. Use of the Russian language etiquette. Moscow, Russian Language, 1984, p.5.

Otajenova D. B. Role of translation in development of writing culture. Materials of III international Scientific Conference. Baku, 2014.

Shavtvaladze M. Academic Writing. University of Georgia, 2011.

# PREPARATION AND PROPERTIES OF POLYPROPYLENE AND PA 6 COMPOSITES REINFORCED WITH ARMENIAN TUFF STONE

*Prof. Karnik Tarverdi, PhD*

Wolfson Centre for Materials Processing Brunel University London, United Kingdom

*Zaruhi Madoyan, MA*

National University of Architecture and Construction of Armenia

---

## Abstract

The present paper discusses preparation, testing and possible uses of new composites, which consists of commodity and engineering polymers such as polypropylene (PP) and polyamide (PA6) reinforced with waste Armenian tuff stone powder.

The paper will discuss extrusion and blending of the materials using co-rotating twin screw extruder with the inclusion of compatibiliser for enhancing the properties of the composite. The microstructure, thermal and mechanical properties of the composites have been examined following injection moulding of tensile test samples with a view of using these composites for added value applications.

---

**Keywords:** Tuff stone, polymers, extrusion blending, characterization

## Introduction

### A Polypropylene (PP), Polyamide(PA6)

Polymer composites consist of either a thermoset or thermoplastic polymer, with the inclusions of inorganic fillers such as a calcium carbonate and glass fibres, which together build up the structure of the composite. The physical properties are strongly dependent on the chemical structure and ratio of individual groups in the plastic as well as the fillers employed. These have a very large influence on the overall spectrum of properties of the polymer composite which includes the additives for the final composite formulation. Polymer composites are extensively used in the manufacture of lightweight, flame retardant and abrasion resistant components for the automotive, aeronautical industries and household goods. Composite materials made of various plastics and additives include: textile-reinforced plastic hoses, glass and natural fibre reinforced sheeting, metal reinforced profiles for windows, carpet, cable, tyres, composite bumpers and many more[1].

Properties of polymers.

1. Density. Typically  $800-1500 \text{ kg/m}^3$  for uniform polymers.
2. Insulation. Thermal insulation: conductivity of solid polymers is about  $0.2 \text{ W/m K}$ , i.e four orders of magnitude lower than copper.
3. Expansion coefficient  $\approx$  range  $60-200 \times 10^{-6}/\text{K}$ .
4. Dimensional stability. A few polymers can absorb some liquids, causing swelling or even dissolution, accompanied by changes in physical properties.
5. Chemical resistance. Can be very good but depends on the chemical nature of the polymers.
6. Burning. All polymers can be destroyed by live flames or excessive heat, although the Rate of destruction depends on the type of polymer.
7. Processing. It is normal to make in one piece three-dimensional articles with

repeatable precision [12].

### **Tuff stone**

For petrographical purposes, tuff is generally classified according to the nature of the volcanic rock of which it consists; this may be the same as the accompanying lavas if any were emitted during an eruption, and if there is a change in the kind of lava which is poured out, the tuffs also indicate this equally clearly. Rhyolite tuffs contain pumiceous, glassy fragments and small scoriae with quartz, alkali feldspar, biotite, etc. Iceland, Lipari, Hungary, the Basin and Range of the American southwest, and New Zealand are among the areas where such tuffs are prominent. The broken pumice is clear and isotropic, and very small particles commonly have crescentic, sickle-shaped, or biconcave outlines, showing that they are produced by the shattering of a vesicular glass, sometimes described as ash-structure. The tiny glass fragments derived from broken pumice are called shards; the glass shards readily deform and flow when the deposits are sufficiently hot, as shown in the accompanying image of welded tuff [7].

Pyroclastic rocks consisting chiefly of angular blocks blown out while solid are classed as volcanic breccias; those with an abundant matrix of ash-size fragments are called tuff-breccias. The composition of these coarse deposits is extremely varied, but most consist of accessory ejecta of intermediate and siliceous composition, and a few contain large proportions of accidental, non-volcanic debris. No matter how breccias and tuff-breccias originate, they accumulate rapidly and hence are seldom sorted or stratified [10].

All examined tuff beds show a uniform assemblage of juvenile magmatic components. These comprise completely recrystallized platy and cusped relict glass shards up to 200  $\mu\text{m}$  in diameter, pumice fragments are rarely preserved but may reach 500  $\mu\text{m}$  in length [8].

In Armenia there is an abundance of a variety of tuff stones and some of the existing tuff stones which in essence are volcanic rocks with rich geological background and there is evidence that the rocks have had significant interaction with ice.

All of the examined tuff beds show a uniform assemblage of juvenile magmatic components. These comprise completely of recrystallized platy and cusped relict glass shards up to 200  $\mu\text{m}$  in diameter, pumice fragments are rarely preserved but may reach 500  $\mu\text{m}$  in length [8].

These rocks have been found in New Mexico, Vesuvius-Italy, Minoan tuff-Thira, Greece etc. [9].

Few of the Armenian tuff types are:

1. Ani
2. Artick
3. Yerevan
4. Byurakan
5. Felzic

**Ani type** tuff, when compared with other tuff stones has the highest strength. These types of tuffstones have yellow-orange colour and maybe the tuff has got its texture at high temperatures. It contains  $\text{SiO}_2$ -67-70%,  $\text{Al}_2\text{O}_3$ -15-25%,  $\text{Fe}_2\text{O}_3$ -2.4-2.76%:

Density-1169-1740  $\text{kg/m}^3$ , compression strength 37 MPa, porosity 28-50%, water absorption 11-32%:

**Artick type** tuff, colours are pink-violet, but the colours can range from white to black. It contains  $\text{SiO}_2$ -64-66% and its colours are the reason of titan and iron oxides.

Density-750-1550  $\text{kg/m}^3$ , compression strength 8.6-16 MPa, porosity 32.4-67.6%, water absorption 33%:

**Yerevan type** tuff stone, colours are red in the high spheres of the stone, red-pink colours can change to black. It contains SiO<sub>2</sub>-60.91-65.04%, Al<sub>2</sub>O<sub>3</sub>-13.18-18,17%, Fe<sub>2</sub>O<sub>3</sub>-2.26-6.47%:

Density-1100-2200 kg/m<sup>3</sup>, compression strength 3-55 MPa, porosity 10-55%, water absorption 3-40%:

**Byurakan type** of tuff stone colours are pink-red with black lines. They contain SiO<sub>2</sub>-62,65%, Al<sub>2</sub>O<sub>3</sub>-15,92%, Fe<sub>2</sub>O<sub>3</sub>-5,26%:

Density-1600-2200 kg/m<sup>3</sup>, compression strength 15-55 MPa, porosity 10-40%, water absorption 3-13%:

**Felzic type** of tuff stone colours are older than others, so their colours can be very different, from yellow, brown, dark pink. It contains SiO<sub>2</sub>-59-73%, Al<sub>2</sub>O<sub>3</sub>-12-18%, Fe<sub>2</sub>O<sub>3</sub>-3-5%, MgO-0.3-1.2%, CaO-2-4%, Na<sub>2</sub>O+K<sub>2</sub>O-5-10%:

Density-1460-2350 kg/m<sup>3</sup>, compression strength 2-80 MPa, porosity 8,6-39,8%, water absorption 2.9-24,0% [6].

## Experimental

The Ani tuff stone was chosen for these preliminary extrusion compounding experiments because Ani tuff stone has high strength and is abundant in Armenia as waste stone after trimming and cutting sections for the buildings industry.

The tuff stone was powdered using a pulverizer followed by sieving to particle sizes below 100micron after which the powder was pre blended separately with different concentrations of powdered PP and PA6 and compatibiliser. The powdered blends were fed into a co-rotating intermeshing twin screw extruder using a volumetric feeder.

The extruder temperatures were set first for PP following which the temperatures of the extruder was raised for processing PA6. (Table 1).

The extrudates were stranded and cooled via a water bath and pelletized before drying ready for injection moulding into tensile test bars.

Table 1. Composite samples prepared for evaluation

Sample 1	PP- 100%
Sample 2	PP- 50%, Tuff-50%
Sample 3	PP- 40%, Tuff-60%
Sample 4	PP- 50%, Tuff-50%, Kraton-50% (FG1901 GT)
Sample 5	PA 6- 100%
Sample 6	PA 6- 50%, Tuff-50%
Sample 7	PA 6- 40%, Tuff-60%
Sample 8	PA 6- 50%, Tuff-50%, Kraton-50%

All 8 samples were extrusion blended and pelletized using in house Polylab extruder and pelletizer. The temperature range used for both polymers was between 200-250°C, duration of extrusion compounding and pelletizing of each sample was about 30 minutes.

## Results and discussions

Following sample preparations the test specimens were subjected to Flexural tests using an Instron tensile testing rig and for the impact tests a Charpy testing instrument was used.

The results of the flexural and impact tests are presented below.

Figure 1. Flexural modulus test results

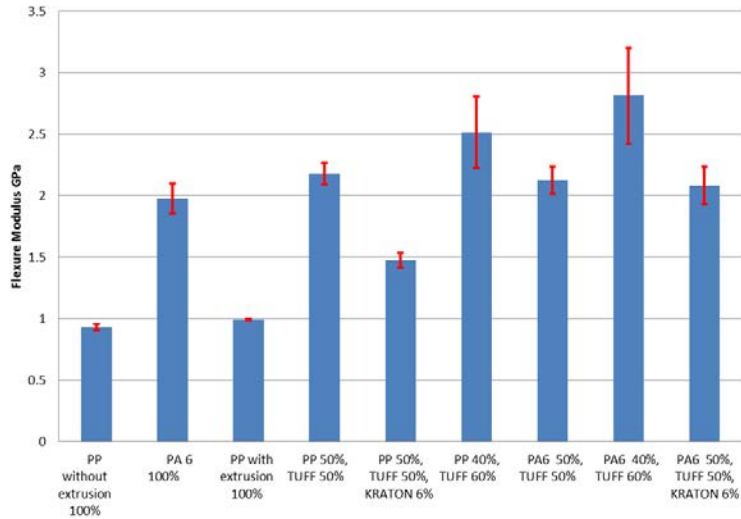


Figure 2 Flexural strength measurements

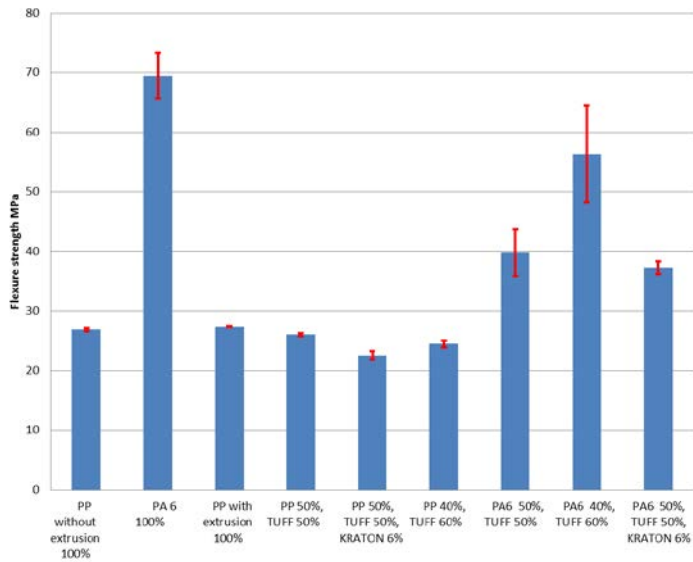
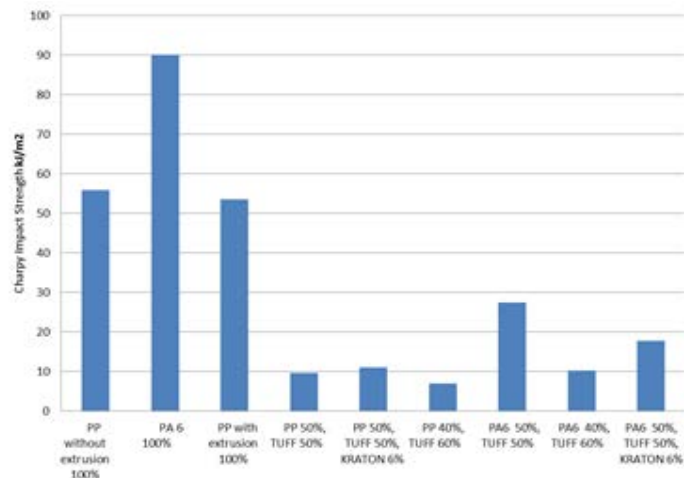


Figure 3 Impact strength measurements



## Conclusion

Using specialised twin screw extrusion technology with the appropriate screw profile and length to diameter ratio extruder optimum blending of fillers with base polymers can be achieved.

In this work careful sieving and tuff stone powder selection has also helped to optimise blending and incorporating the tuff powder with the base polymers with the inclusion of a compatibiliser to try and further enhance the flexural properties of the composites.

The results indicate that the addition of tuff stone powder particularly with regard to the flexural strength and modulus of the specimens can enhance mechanical properties of the polymers when optimised polymer and filler blending and dispersion is achieved. In the present paper, high strength, stiffness, and toughness values have been reported for the Polypropylene and Polyamide containing fairly high loadings of the tuff filler. It has been demonstrated that the use of selected and processed tuff stone of this type has the potential to add value to polymers by relatively increasing mechanical performance at minimal additional cost or even reducing the final costs by using recycled tuff stone powder.

These experiments have also demonstrated that despite tuff stone being soft and porous, with the appropriate treatment the composite can be made hydrophobic even under extreme of temperature and humidity conditions.

## Further work

This preliminary work has demonstrated that waste tuff stone powder can be used as a substitute for other fillers like calcium carbonate in polymers, but further work needs to be carried out to evaluate the properties of different tuff stones when blended with different polymers and used in the long term.

## Acknowledgements

The authors would like to acknowledge and thank The Benlian Trust in London for funding the post graduate's visitation to Brunel University London which made this research work possible.

## References:

- V. Goodship: 'Management, recycling and reuse of waste composites', p. 284-285 ; Oxford, Cambridge, New Delhi, 2010 Woodhead publishing limited.
- J. Karger-Kocsis: 'Polypropylene structure, blends and composites', Volume 1, p. 8-9; London, Glasgow, Weinheim, New York, Tokyo, Melbourne, Madras, 1995, Chapman & Hall.
- J. Karger-Kocsis: 'Polypropylene structure, blends and composites', Volume 2, p. 69-75; London, Glasgow, Weinheim, New York, Tokyo, Melbourne, Madras, 1995, Chapman & Hall.
- M.I. Kohan 'Nylon plastics handbook', p 71-72; Munich, Vienna, New York, 1995, Carl Hanser Verlag
- D.G. Baird, D.I. Collias 'Polymer processing', p. 1-8; New York, 1998, John Wiley & Sons
- Ter-Petrosyan and others 'Material science for builders', p. 51-57, Yerevan, 2005, Nairi.
- <http://en.wikipedia.org/wiki/Tuff>
- J.D.L. White, N.R. Riggs "Volcaniclastic Sedimentation in Lacustrine Settings", p. 11, 268; Oxford, 2001, Blackwell Science.
- G. Heiken, K. Wohletz 'Volcanic ash', p. 100, 104, 162; Berkeley, Los Angeles, London, 1992, University of California Press.

H. Williams, A. McBirney "Volcanology", p. 134-135; San Francisco, CA, 1979, Freeman, Cooper & Co.

A. Rudin, "Polymer science and engineering", Second Edition, p. 13, USA, 1999, Academic Press.

P.C. Powell, A.J. I. Housz "Engineering with polymers", p.36-37, Great Britain, 1998, Stanley Thornes Ltd.

Y. Mouton "Organic materials in civil engineering", p.30, Great Britain and USA, 2006, ISTE

## ANATOMY OF CASSAVA LEAVES

*Eli Carlos de Oliveira, DSc*

*Édison Miglioranza, PhD*

University State of Londrina, Brazil

---

### Abstract

Leaves are the organs in which occurs mainly photosynthesis enabling the transformation of radiant energy into chemical energy. Anatomical properties in leaves are indices used in taxonomical studies the importance of anatomical features on the studies support morphological evidence for separating taxa of plants *Manihot* at the generic level. The present study is aiming to introduce an internal description of leaves of cassava plants to determine its characteristics and thus contribute to other research that may need this description. The observation was surface replicas of the leaf made from transparent materials and scanning electron microscopy (SEM) were compared for their ability to present an accurate picture of the leaf. According to the observations, we can infer that, cassava is presented as a very rustic plant by adapting to different environments. The completion of the anatomical study of leaf *Manihot esculenta* IAC 576-70, showed that the sheet, the body responsible the synthesis of carbohydrates and chief of tuberization root has important morpho-anatomical features, such as presence papillae on the abaxial epidermis by increasing the surface forming a crown around the stomata, thereby contributing to the same remain open for longer in areas with water deficit.

---

**Keywords:** Abaxial and adaxial surface, *Manihot esculenta* Crantz, Papillae cells, electron microscopy

### Introduction

Cassava belongs to the *Euphorbiaceae* family, one of the largest within the dicots. In this family, are found 290 genera and approximately 7,500 species distributed throughout the tropical and subtropical regions of the globe. The tubers, part of the root system and the leaves are used as food sources. It is an important staple in many developing countries of Africa, South and Central America, India and Southeast Asia (Al Afas et al, 2006).

The cassava plant is a perennial that, under cultivation, grows to a height of about 2,4 m. The leaves are large and palmate and have five to seven lobes borne on a long, slender petiole. The leaves grow only towards the end of the branches. They are dark green above and light green below. The gender *Manihot esculenta* Crantz is an herbaceous plant when woody when young and old, presents shrub and canopy branched averagely. The main stem suffers nearest branch of base and the branches are covered with numerous scars from the leaves lapsed.

Anatomical properties are indices used in taxonomical studies for more than hundred years (Radford et al., 1974). Studies indicated the importance of anatomical features on the palaeobotanical and taxonomical studies. Kantachok et al. (2007) stated that leaf anatomical data support morphological evidence for separating taxa of plants *Manihot* at the generic level. Ali et al. (2009) focused on the anatomical adaptation of leaves in the genus *Eucalyptus* from the Faisalabad region. The present study is aiming to introduce an internal description



of leaves of cassava plants to determine its characteristics and thus contribute to other research that may need this description.

### Materials and Methods

Fresh material of specie *Manihot esculenta* Crantz of cultivate IAC 576-70 of cassava was collected from crop in area experiment in Brazil in state of São Paulo. The leaves were prepared by macerating in Jeffrey's solution, and therefore mounted in safranin-stained glycerine jelly. For sectioning, fresh material of leaves, petioles and stems was fixed at least 48 hours in formalin acetic acid alcohol solution (FAA) and preserved in 70% alcohol, then dehydrated in ethyl alcohol series, sectioned on a rotary microtome and stained in safranin and fast green and then mounted in balsam (JOHANSEN, 1940; DITCHER, 1974; MELVILLE, 1976).

To observation of parts anatomical was performed using an optical microscope eyepiece lens 15x and objective lens 40x was used, which provided 600x magnification and a field of view of 0.39mm<sup>2</sup>. The images used for analysis were captured by a capture system composed of a microscope equipped with camera AxioCam ICc3 and Bel View software. Image processing and analysis was performed with public domain software Image J 1.43a, version 64, with the measurement of five fields replicated for each analyzed leaf (NORTH, 1956).

### Results and Discussion

Anatomical analysis of the limbo of IAC 576-70, in cross section, revealed that the epidermis cells adaxial with format predominantly rectangular in between the ribs area. The outer periclinal walls are straight and covered with cuticle and anticlinal walls are slightly winding (see Figure 1A). On the abaxial surface, the epidermis forming papillae cells with an only more or less conical dome surface (see Figure 1B). The papillae are distributed throughout the epidermis that face but on the primary ribs secondary and have a more rounded shape with smaller domes projection.

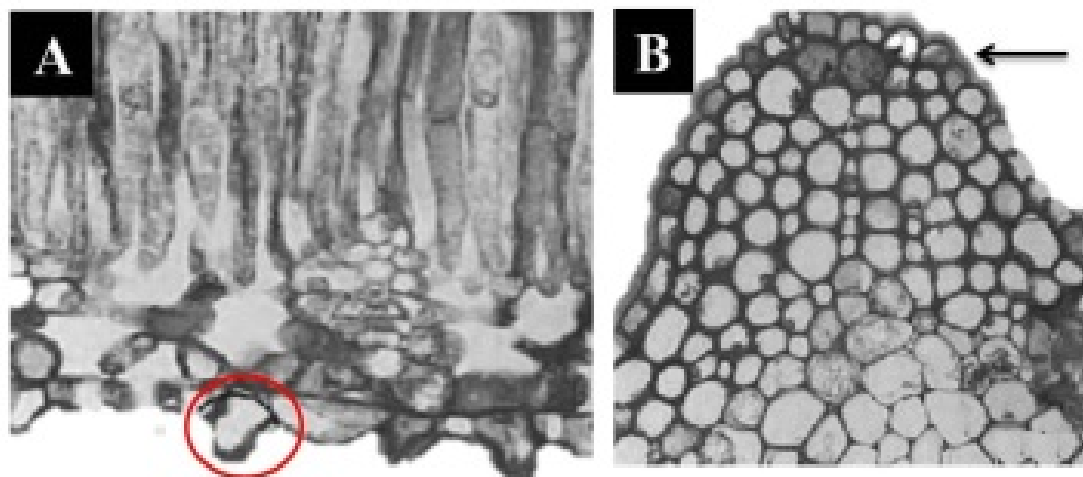


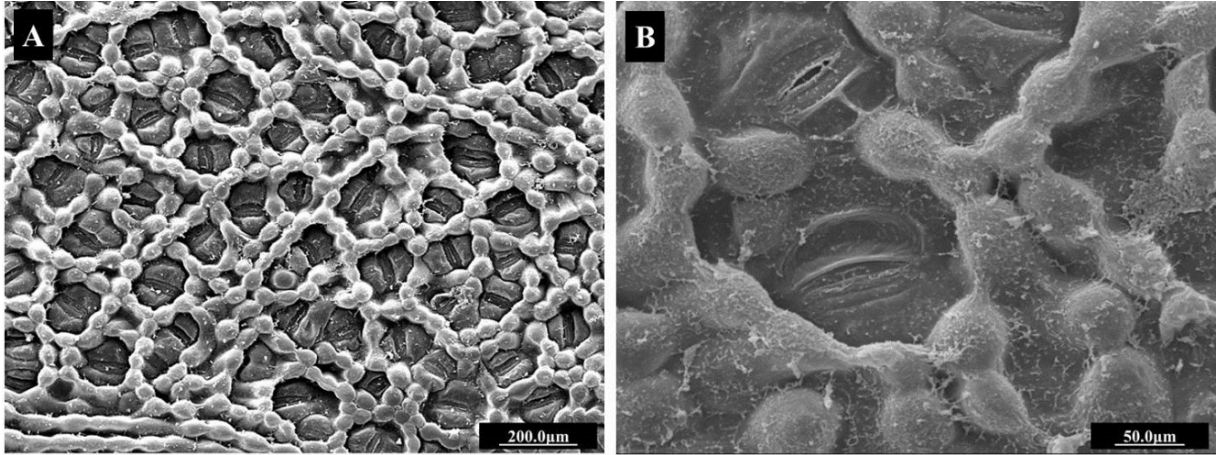
Figure 1 – General appearance of the leaf blade. Observe epidermal cells of rectangular shape on the adaxial surface and papillae on the abaxial face (circle) (A) (22µm). Detail of the rib region primary leaf blade. Observed in the abaxial epidermis, cells rounded contour and cuticle (arrow) (B) (25µm).

On primary and secondary veins, external periclinal cell walls in adaxial epidermis possess rounded contour. In beams of smaller caliber, the epidermal cells on the adaxial little, however, alter the abaxial presented slightly papillose.

With the use of scanning electron microscope, cells forming papillae with a more or less conical dome was observed on the abaxial surface of leaves (see Figure 2A). These

papillae are distributed throughout the epidermis of this surface. However, beside the primary and secondary ribs, they have a round shape, with smaller domes, in front view, these cells form a crown around the stomata (see Figure 2B).

Figure 2 – Epidermis cells of the leaf upper side with papillae (A). Papillae cells form a crown around the stomata (B).



Similar features were found in the epidermis of the adaxial *Manihot caerulescens* described by Mendonça (1983). In *Manihot glaziovii*, Mendonça (1992) noted the occurrence of rectangular cells, with walls often pointed external periclinal, resembling sometimes with papillae. In *Manihot esculenta*, the papillae cells are present only on the abaxial surface and occur in every area of the leaf blade where there venation network. These results are similar to those obtained by Oliveira and Miglioranza (2013), who observed the presence of papillae partially surrounding the stomata.

Works such as Mantovani and Vieira (1997) reported that the presence of papillae on the abaxial epidermis can contribute to improving the reception of light on plants growing under the canopy of tropical forests. Whereas *M. esculenta* is a plant grown in full sun, the presence papillae on the abaxial side seems to have the primary function of protecting stomata, since spread like a crown around them. However, prove the function of the papillae as lenses converge the lights for chlorophyllian tissues, needs further studies.

Hairs unicellular, unbranched, short and thin type, also were found in the epidermis. These are distributed sparsely in both faces, especially on the primary and secondary veins (see Figure 3). According to Mantovani and Vieira (1997), the family *Euphorbiaceae*, occur many types of hair that vary in density and shape, including glandular hairs, non-glandular types and thorns.

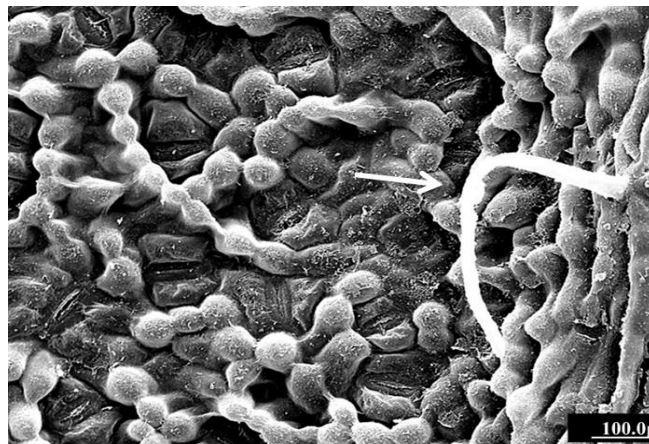


Figure 3 – Aspect abaxial showing the presence of single hair located on the main rib (arrows) of the sheet.

The sheet is amphistomatic *M. esculenta* and the stomata, the type paracitic (see Figure 4), is present mainly on the abaxial surface surrounded by papillae, which form a crown around her. The stomata of the face adaxial are located slightly below the other epidermal cells, and front view, are present only near the upper ribs review, which is in accordance with the descriptions Oliveira and Miglioranza (2014), who also reported the presence of stomata, usually on the face abaxial, but rarely occur on both sides *within Euphorbiaceae*.

The largest amount of stomata on the abaxial surface, surrounded by buds may favor the control opening and closing of stomata on the leaf and so increase their photosynthetic capacity. This seems possible because it turns out that stomata present on the abaxial surface of *M. esculenta* are closed in the presence of dry air, which allows the plant to survive for long periods of water shortage and maximize the use of water. Furthermore, the leaves demonstrated considerable ability to recycle the CO<sub>2</sub> from your breath.

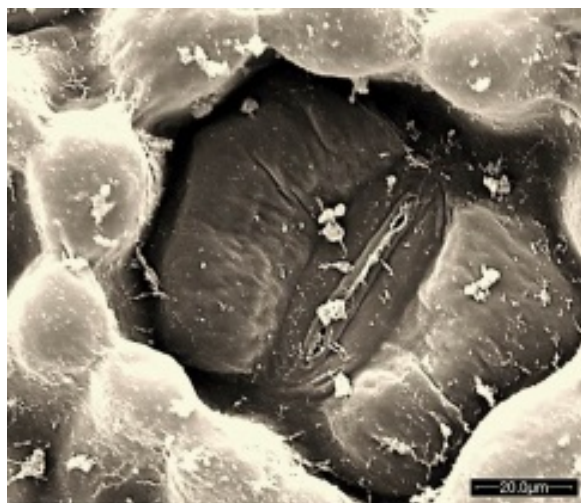


Figure 4 – stomata, the type paracitic present on the abaxial surface surrounded by papillae cells, which form a crown around her.

## Conclusion

Cassava is presented as a very rustic plant by adapting to different environments. The completion of the anatomical study of leaf *Manihot esculenta* IAC 576-70, showed that the sheet, the body responsible the synthesis of carbohydrates and chief of tuberization root has important morpho-anatomical features, such as presence papillae on the abaxial epidermis by increasing the surface forming a crown around the stomata, thereby contributing to the same remain open for longer in areas with water deficit.

## References:

- Al Afas, N.; Marron, N.; Ceulemans, R. Clonal variation in stomatal characteristics related to biomass production of 12 poplar (*Populus*) clones in a short rotation coppice culture. *Environmental and Experimental Botany*, 58: 279-286, 2006.
- Ditcher, D. L. Approaches to the Identification of Angiosperm Leaf Remains. *Botanical Review*, Vol. 4, No. 1, pp. 1-157, 1974.
- Johansen, D. A. *Plant Microtechnique*, McGraw Hill, New York, 1940.
- Mantovani, A., Vieira, R. C. Leaf surface of two understory shrubs *Rudgea decipiens* Müll. Ar. and *Rudgea macrophylla* Bent. (*Rubiaceae*). *Rodriguesia*, Rio de Janeiro, v.45/49, n. 71/75, p.7-13, 1997.
- Melville, R. The Terminology of Leaf Architecture, *Taxon*, Vol. 25, No. 5-6, pp. 549-561, 1976.

- Mendonça, M. S. Estudo de plantas laticíferas. I. Aspectos anatômicos e distribuição de vasos laticíferos em *Manihot caerulea* Pohl. Acta Amazônica, Manaus, v.13, p.501-17, 1983.
- Mendonça, M. S. Estudo de plantas laticíferas. II Aspectos anatômicos e distribuição de vasos laticíferos em *Manihot glaziovii* Muller Arg. Acta Amazônica, Manaus, v.22, p.309-21, 1992.
- North, C. A. Technique for measuring structural features of plant epidermis using cellulose acetate films. Nature, 178: 1186–1187, 1956.
- Oliveira, E. C.; Miglioranza, E. Dimensões e densidade estomática em diferentes variedades de mandioca. Revista Cultivando o Saber, v. 6, p. 201-213, 2013.
- Oliveira, E. C.; Miglioranza, E. Stomatal density in six genotypes of cassava. International Journal of Engineering ,Science and Innovative Technology, v. 3, p. 305-308, 2014.
- Radford, A. E. W.; Dikson, C.; Massey, J. R.; Bell, C. R. Vascular Plants Systematics, Harper and Row, New York, 1974.

# NUMERICAL INVESTIGATION OF HEAT TRANSFER ENHANCEMENT IN A CIRCULAR TUBE USING RIBS OF SEPARATED PORTS ASSEMBLY

*Farhan Lafta Rashid*  
*Prof. Dr. Arkan Altaie*  
*Ass. Prof. Dr. Moayed R. Hasan*  
University of Technology-Iraq

---

## Abstract

The paper deals with numerical investigation for the influence of separated ports assembly ribs on heat transfer in a steel tube of 50 cm long, outside diameter of 60 mm and inside diameter of 30 mm with constant outside surface temperature of 1000, 1200 and 1400 K°. The renormalization group k- $\epsilon$  model is used to simulate turbulence in ANSYS - FLUENT 14.5. The ribs assembly (5x5 mm triangle passage) were fitted in the tube and separated by 8cm pitch. Results of temperature and velocity distribution along the tube center line for the case of tube with internal ribs were compared with that of plain tube, these results show that the use of internal ribs enhance the heat transfer rate and found to possess the highest performance factors for turbulent flow.

---

**Keywords:** CFD, heat transfer enhancement, cooling enhancement, internal ribs, turbulators and turbulent flow

## Nomenclature

E: Empirical constant in turbulence model (9.793)  
g: Gravity acceleration, m/s<sup>2</sup>  
k: Thermal conductivity, W/m K  
P: Mean pressure, Pa  
T: Temperature, K  
ui: Velocity vector, m/s  
u' : Root-mean-square of the turbulent velocity fluctuations  
x, y, z: Coordinates

## Greek Symbols

$\mu$ : Dynamic viscosity, Pa·s  
 $\rho$ : Density, kg/m<sup>3</sup>  
 $\tau$ : Shear stress

## Introduction

Heat transfer enhancement is a subject of considerable interest to researchers as it leads to saving in energy and cost. Because of the rapid increase in energy demand in all over the world, both reducing energy lost related with ineffective use and enhancement of energy in the meaning of heat have become an increasingly significant task for design and operation engineers for many systems [Veysel, 2008].

Heat transfer enhancement by inserting ribs is commonly used application in tubes. Ribs improve the heat transfer by interrupting the wall sublayer. This yields flow turbulence, separation and reattachment leading to higher heat transfer rates. Due to the existence of ribs effective heat transfer surface increases. Many researches have been carried out on heat

transfer enhancement achieved by different ribs [Buchlin-2002, Tanda-2004, Jordan-2003, San-2006, Lu-2006, Tanda-2001].

Yakut et al. [K. Yakut, 2004] investigated the role of conical-ring turbulator on heat transfer enhancement and friction factor by judging fluid flow in tubes when a uniform heatflux was maintained varied pitch ratios were used. It was observed that the turbulator with the smallest pitch ratio offered highest heat transfer enhancement and thermal performance factor.

Durmus [A. Durmus, 2004] employed conical turbulators with four variations in conical angles viz. 5°, 10°, 15° and 20° for heat transfer enhancement. Apparently, the heat transfer rates as well as friction coefficients increased with increasing turbulator angles.

Kumar and Saini [Kumar, 2009] presents the performance of a solar air heater duct provided with artificial roughness in the form of a thin circular wire in arc shaped geometry has been analyzed using CFD. The effect of arc shaped geometry on heat transfer coefficient, friction factor, and performance enhancement were investigated covering the range of roughness parameter (from 0.0299 to 0.0426) and working parameter (Re from 6000 to 18000). Different turbulent models have been used for the analysis and their results were compared. Renormalization group (RNG) *k-e* model based results have been found in good agreement and accordingly this model was used to predict heat transfer and friction factor in the duct.

Eiamsa-Ardet al. [Eiamsa, 2009] presents the applications of a mathematical model for simulation of the swirling flow in a tube induced by loose – fit twisted tape insertion. Zimparov [Zimparov-2004, Zimparov-2004] investigated a simple mathematical model following the suggestions of Smithberg and Landis has been created to predict the friction factors for the case of a fully developed turbulent flow in a spirally corrugated tube combined with a twisted tape insert.

In this paper, the effect of fitting a new design of ribs (separated ports assembly) in a pipe with internal cooling air flow and constant wall surface temperature will be investigated.

**CFD modeling**

In this investigation a 3-D numerical simulation of the conjugate heat transfer was conducted using the CFD code FLUENT 14.5. The CFD modeling involves numerical solutions of the conservation equations for mass, momentum and energy. These three equations are used to model the convective heat transfer process with the following assumptions, (a) steady 3-D fluid flow and heat transfer, (b) incompressible fluid and flow, and (c) physical properties of cooling fluid are temperature dependent. These equations for incompressible flows can be written as follows:

**- mass conservation:**

$$\frac{\partial(u_i)}{\partial x_i} = 0 \dots\dots\dots(1)$$

**- momentum conservation:**

$$\frac{\partial(u_i)(u_j)}{\partial x_j} = -\frac{\partial p}{\partial x_i} + \frac{\partial}{\partial x_j} [\mu(\frac{\partial(u_i)}{\partial x_j} + \frac{\partial(u_j)}{\partial x_i}) - \rho(u_i' u_j')] + \rho g_i \dots\dots\dots(2)$$

**Energy Conservation**

$$\frac{\partial}{\partial x_i} ((u_i)(\rho E + p)) = \frac{\partial}{\partial x_i} (K_{eff} \frac{\partial T}{\partial x_i} + u_j (\tau_{ij})_{eff}) \dots\dots\dots(3)$$

**Boundary conditions**

The boundary zone location is specified in the GAMBIT itself; the inlet, outlet and the wall condition location is specified.

Ribs

**Fluid entry boundary condition**

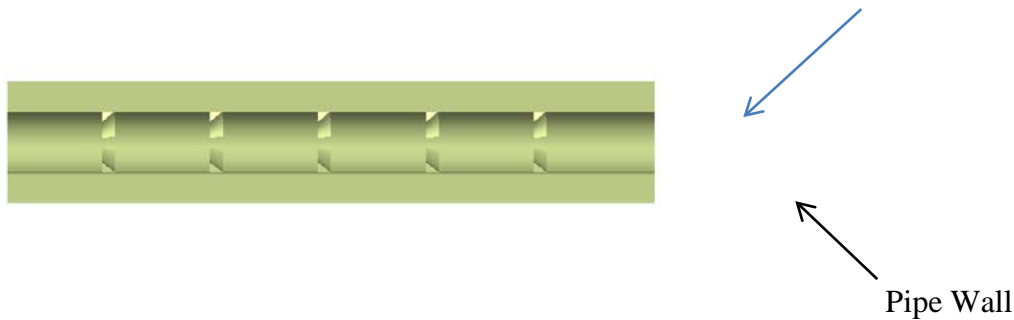
The inlet flow velocity is 10 m/s with constant temperature of 300 K°.

**Wall Boundary Conditions**

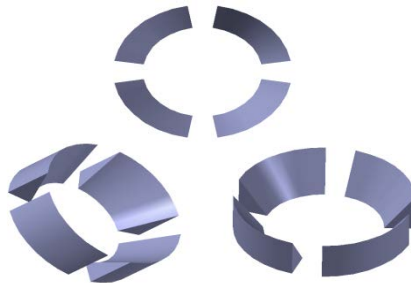
The pipe wall is provided with wall boundary condition, a constant heat flux is provided for plain and ribbed tubes. The outside surface wall temperature is varied from 1000 to 1200 and 1400 K°.

**Geometry of The Test Section**

The test section shown in fig. (1) is steel tube with outside diameter of 60 mm and inside diameter of 30 mm at which the coolant air flow in , and having steel separated ports assembly(5x5 mm triangle passage) .The test section was drawn using AUTO CAD 2013.



(A)



(B)

Figure (1) Geometry of the Test Section, A: Tube with ribs , B: Ribs

**Results and Discussion**

Figures (2) , (3) and (4) show the contours of temperature distribution along the whole test section geometry at constant surface wall temperatures of 1000 , 1200 and 1400 K°, respectively.

Figures (5), (6) and (7) show the contours of velocity distribution along the whole test section geometry at constant surface wall temperatures of 1000 , 1200 and 1400 K°, respectively.

Figure (8).shows the temperature distribution along the pipe center line for two cases,one without ribs and the other with ribs at surrounding surface temperature of 1000K°. It shows that the pipe with ribs has highest outlet air temperature. This means that the pipe with ribs ,has highest surface area resulted in enhancing the heat transfer.

Figure (9).shows the temperature distribution along the pipe center line for two cases,one without ribs and the other with ribs at surrounding surface temperature of 1200K°.

It shows that the pipe with ribs has highest outlet air temperature. This means that the pipe with ribs ,has highest surface area resulted in enhancing the heat transfer.

Figure (10).shows the temperature distribution along the pipe center line for two cases,one without ribs and the other with ribs at surrounding surface temperature of 1400K°. It shows that the pipe with ribs has highest outlet air temperature. This means that the pipe with ribs ,has highest surface area resulted in enhancing the heat transfer.

Figure (11) shows the velocity distribution along the pipe center line for two cases , one without ribs and the other with ribs at surrounding surface temperature of 1000 K°. It shows that the pipe with internal ribs having more velocity distribution than the case of plain pipe. This because of the swirls generated from the use of separated ports ribs.

Figure (12) shows the velocity distribution along the pipe center line for two cases , one without ribs and the other with ribs at surrounding surface temperature of 1200 K°. It shows that the pipe with internal ribs having more velocity distribution than the case of plain pipe. This because of the swirls generated from the use of ribs separated ports ribs.

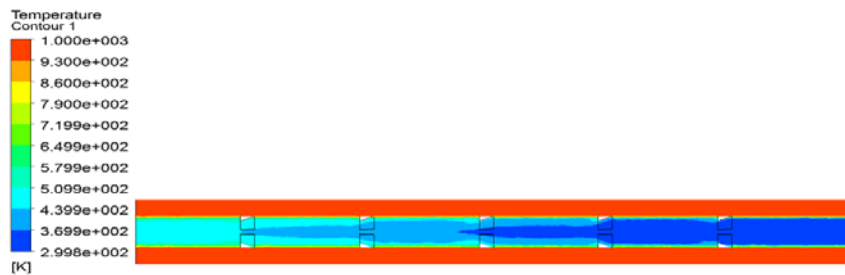
Figure (13) shows the velocity distribution along the pipe center line for two cases , one without ribs and the other with ribs at surrounding surface temperature of 1400 K°. It shows that the pipe with internal ribs having more velocity distribution than the case of plain pipe. This because of the swirls generated from the use of separated ports ribs.

**Conclusion**

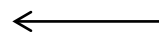
Numerical simulation has been presented on heat transfer characteristics for the flow of cooling air in heated tube under steady state turbulent flow.The CFD predictions for the case of tube with ribs were compared against the tube without ribs.

The following conclusions can be drawn from the present study:

1. CFD predictions were shown to reproduce the enhancement in heat transfer for the use of internal ribs, with respect to the plain tube.
2. Based on CFD analysis, higher thermal hydraulic performance were obtained for the tube with ribs than the tube without ribs.
3. tube with ribs gave more velocity distribution than the tube without ribs.
4. The temperature of the plain pipe was found to be approximately un affected for cases of 1000, 1200 and 1400 K°. While when ribs are used , the effect was to increase the temperature by 370 , 225 , and 75K° for the cases above, respectively.

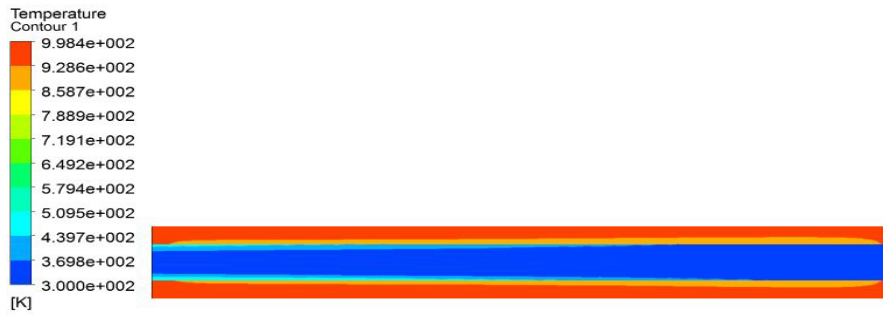


**Flow Direction**



(A)





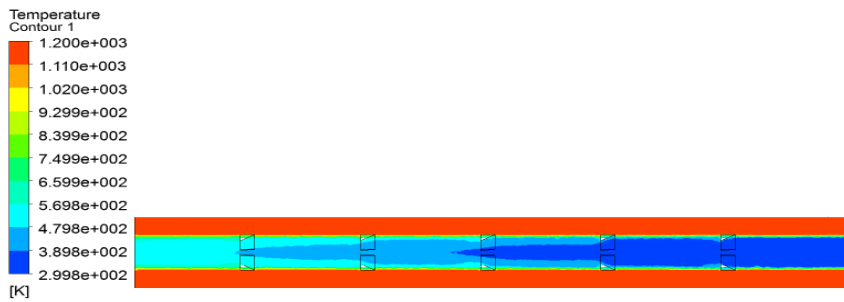
Flow Direction



(B)

Fig.(2) Contour of Temperature Distribution at Constant Surface Temperature ( $1000\text{ k}^{\circ}$ )

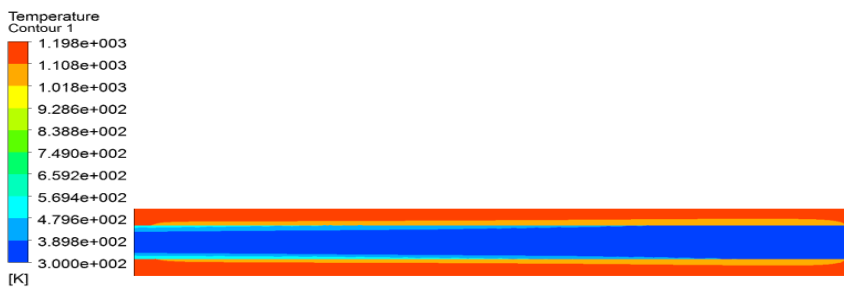
A: With Ribs  
B: Without Ribs



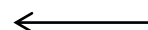
Flow Direction



(A)



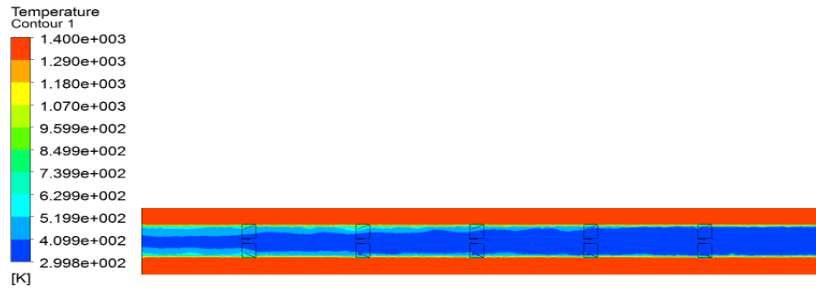
Flow Direction



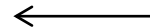
(B)

Fig.(3) Contour of Temperature Distribution at Constant Surface Temperature ( $1200\text{ k}^{\circ}$ )

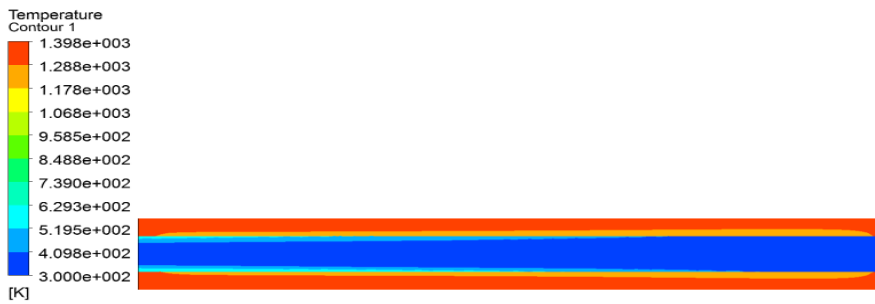
A: With Ribs  
B: Without Ribs



**Flow Direction**



(A)



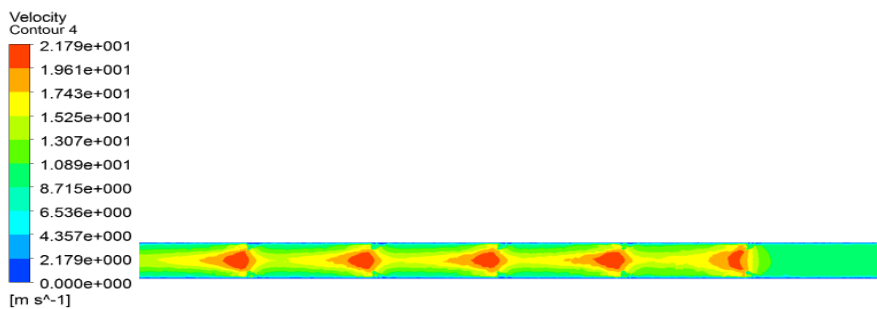
**Flow Direction**



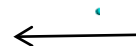
(B)

Fig.(4) Contour of Temperature Distribution at Constant Surface Temperature (1400k°)

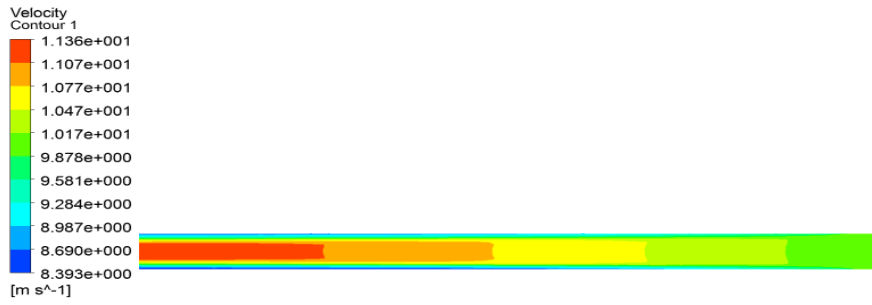
A: With Ribs  
B: Without Ribs



**Flow Direction**



(A)



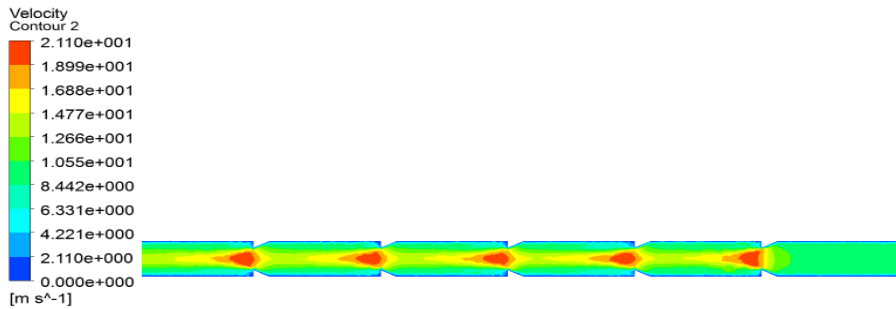
**FlowDirection**



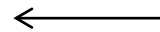
**(B)**

Fig.(5) Contour of Velocity Distribution at Constant Surface Temperature (1000k°)

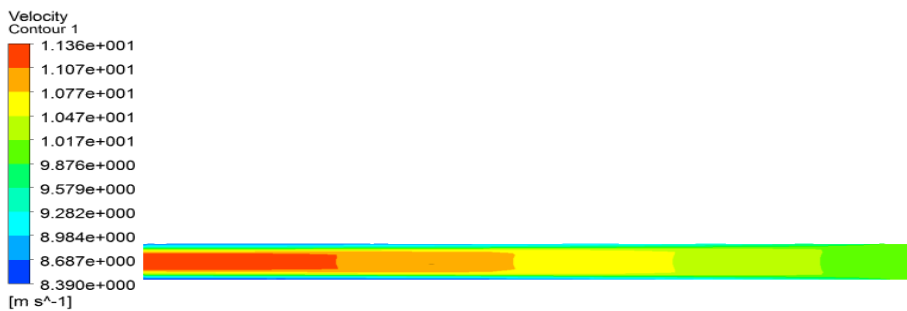
A: With Ribs  
 B: Without Ribs



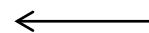
**Flow direction**



**(A)**



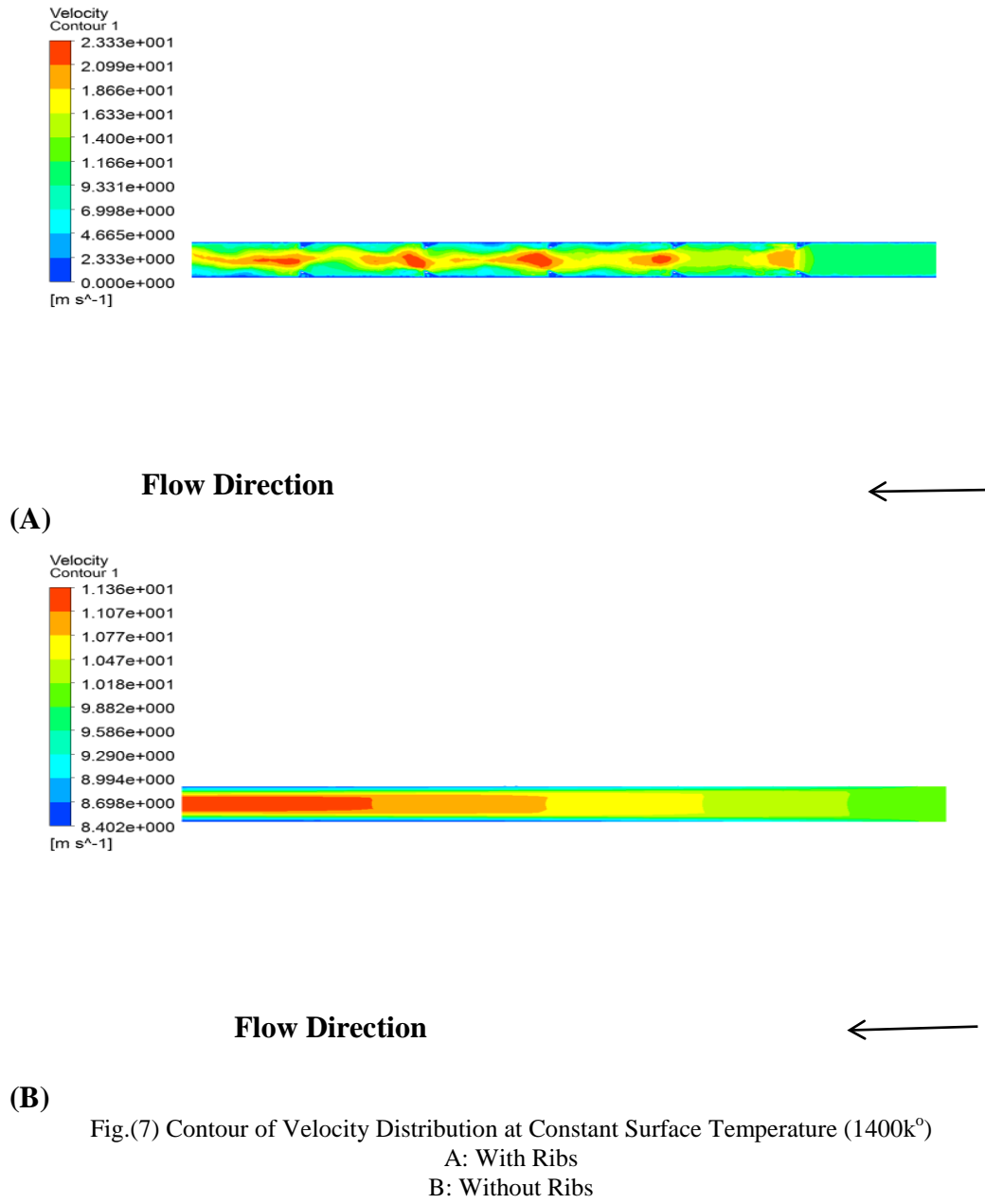
**Flow Direction**



**(B)**

Fig.(6) Contour of Velocity Distribution at Constant Surface Temperature (1200k°)

A: With Ribs  
 B: Without Ribs



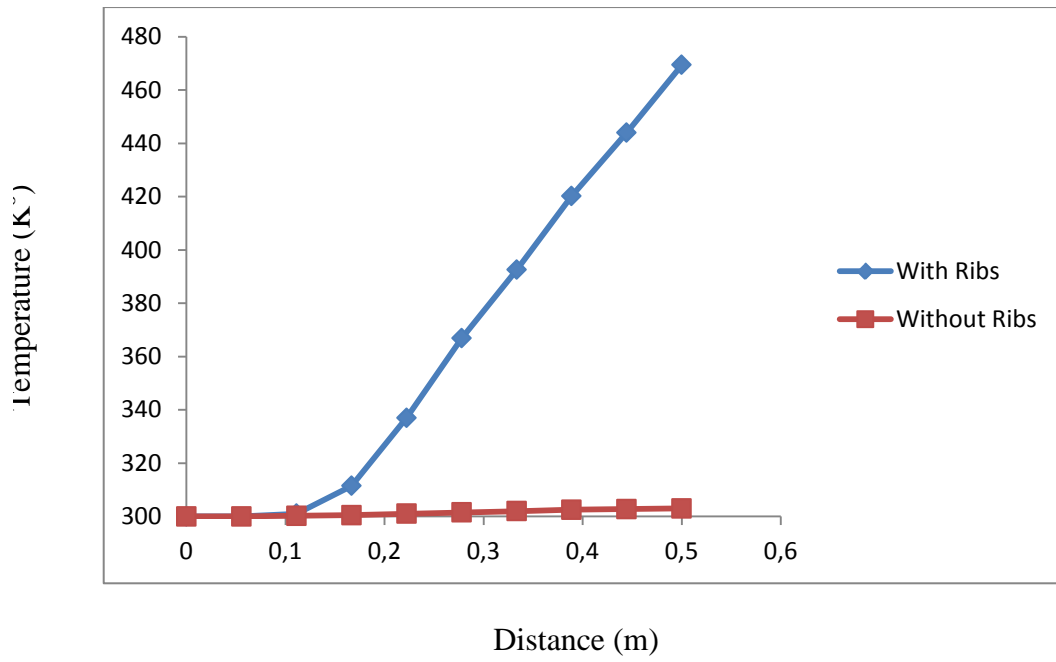


Fig. (8) Variation of Temperature Along the Center line of Tube at Constant Surface Temperature (1000 K<sup>o</sup>)

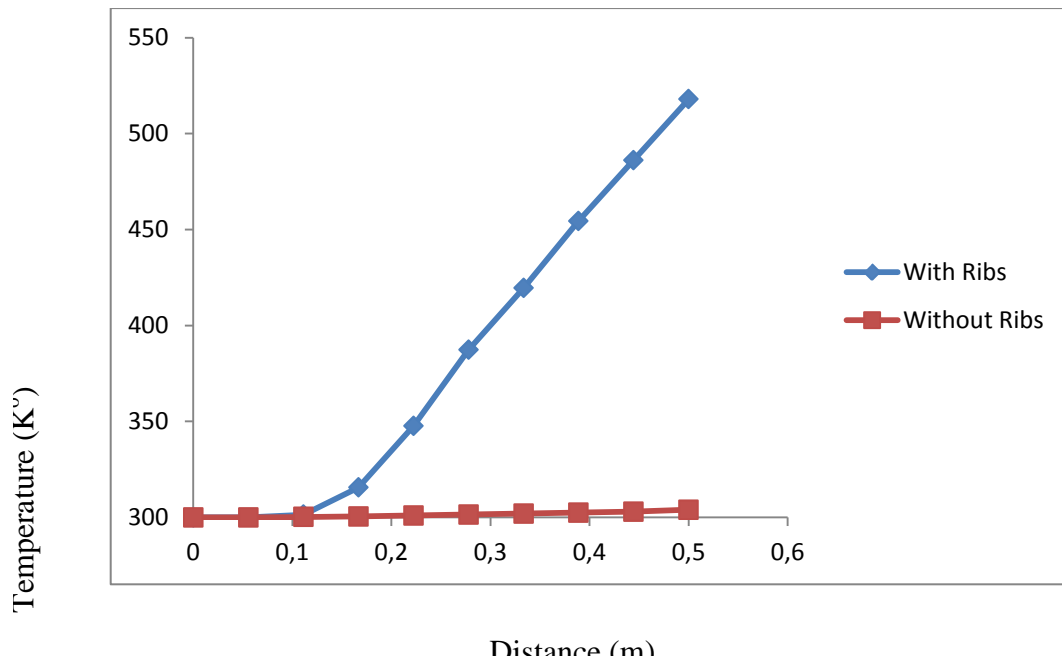


Fig. (9) Variation of Temperature Along the Center line of Tube at Constant Surface Temperature (1200 K<sup>o</sup>)

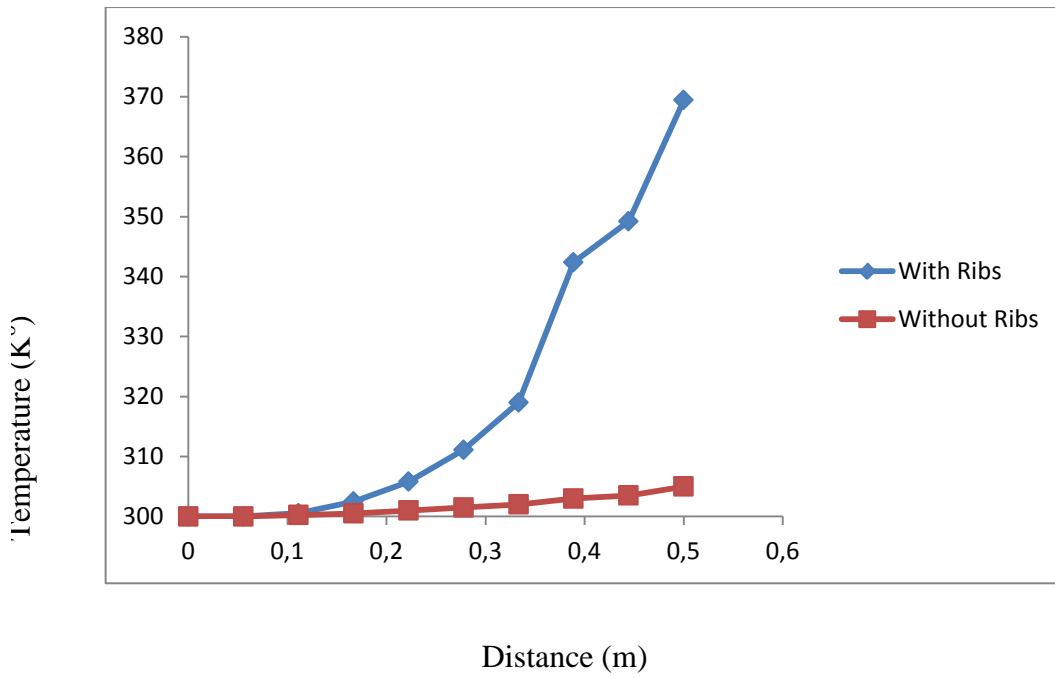


Fig. (10) Variation of Temperature Along the Center line of Tube at Constant Surface Temperature (1400 K°)

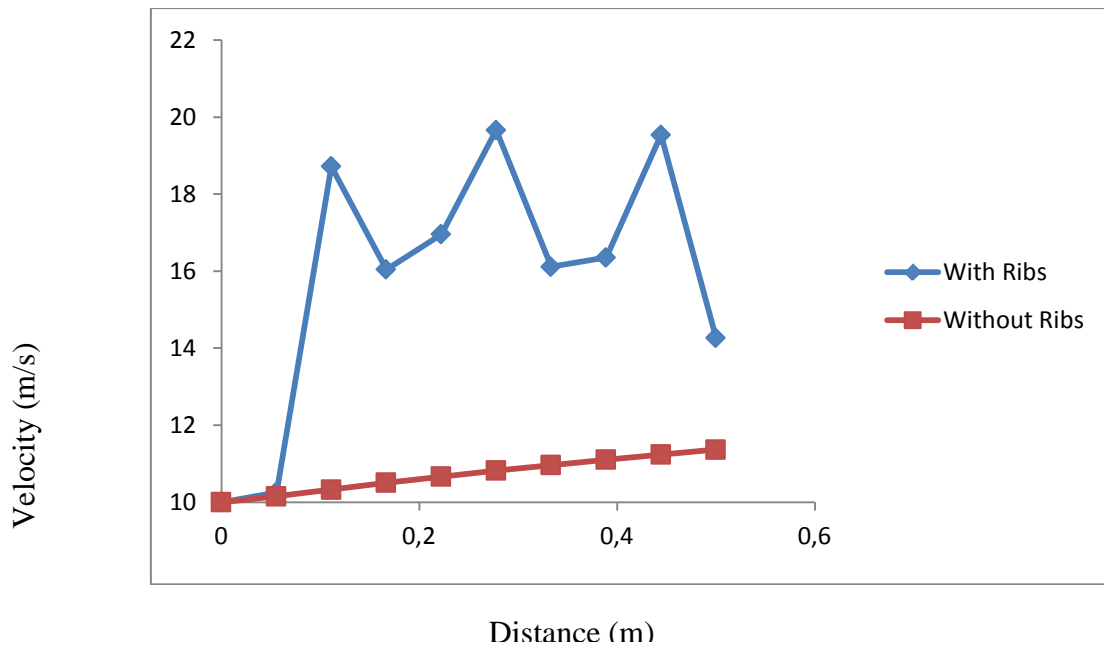


Fig. (11) Variation of Velocity Along the Center line of Tube at Constant Surface Temperature (1000 K°)

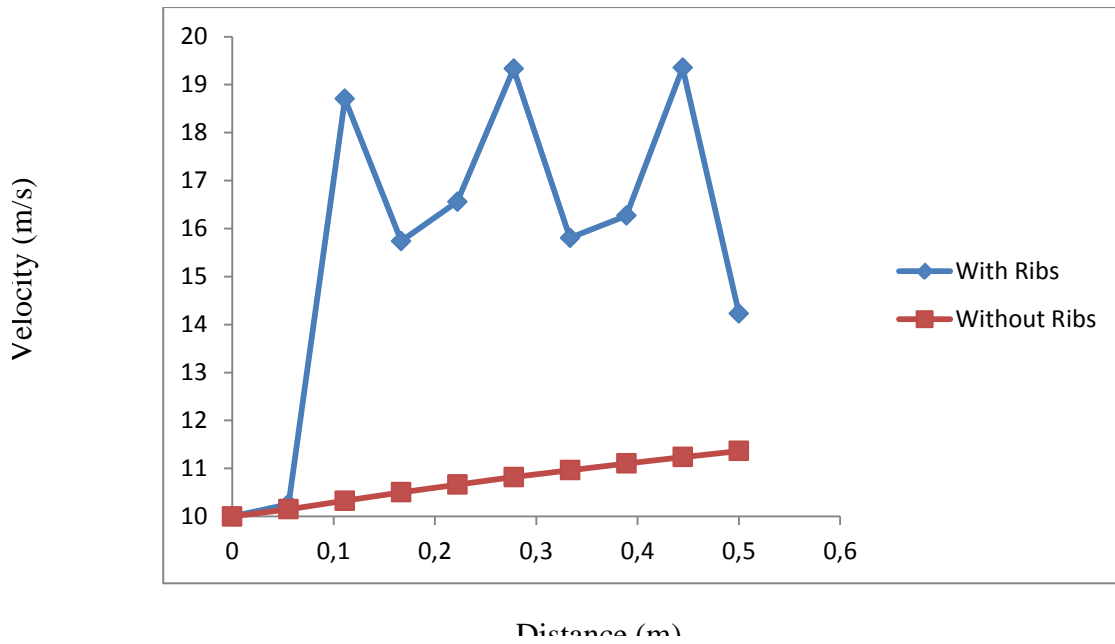


Fig. (12) Variation of Velocity Along the Center line of Tube at Constant Surface Temperature (1200 K<sup>o</sup>)

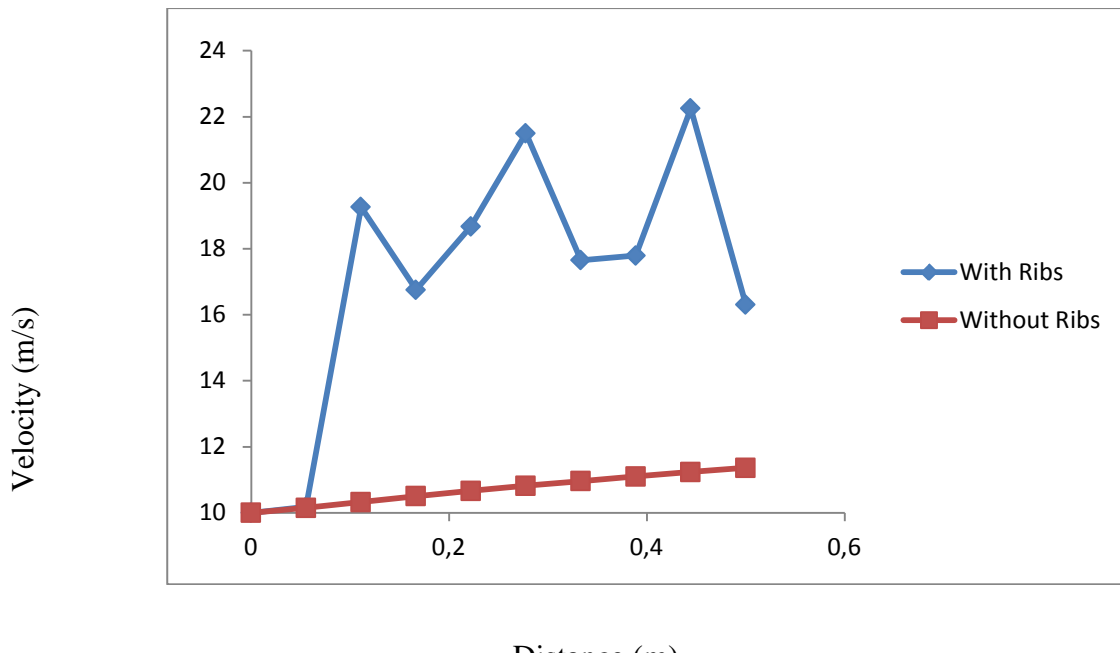


Fig. (13) Variation of Velocity Along the Center line of Tube at Constant Surface Temperature (1400 K<sup>o</sup>)

**References:**

A. Durmus, Heat transfer and exergy loss in cut out conical turbulators, *Energy Conversion and Management* 45 (2004) 785–796.  
 Buchlin JM. , Convective heat transfer in a channel with perforated ribs. *Int J ThermSci* 2002;41:332–40.  
 Eiamsa-Ard, S., *et al.*, 3D Numerical Simulation of Swirling Flow and Convective Heat Transfer in a Circular Tube Induced by Means of Loose Fit Twisted Tapes, *Int. J. Communications in Heat Mass Transfer*, 36 (2009), 9, pp. 947-955.

- Jordan SA. ,The turbulent character and pressure loss produced by symmetric ribs in a circular duct. *Int J Heat Fluid Flow*2003;24:795–806.
- K. Yakut, B. Sahin, S. Canbazoglu, Performance and flow-induced vibration characteristics for conical-ring turbulators, *Applied Energy* 79(2004) 65–76.
- Kumar, S., Saini, R. P., CFD Based Performance Analysis of a Solar Air Heater Duct Provided with ArtificialRoughness, *Int.J.Renewable Energy*, 34 (2009), 5, pp. 1285-1291.
- Lu B, Jiang PX. ,Experimental and numerical investigation of convection heat transfer in a rectangular channel with angled ribs. *Exp. Therm. Fluid Sci.* 2006;30:513–21.
- San JY, Huang WC. ,Heat transfer enhancement of transverse ribs in circular tubes with consideration of entrance effect. *Int J HeatMass Transfer* 2006;49:2965–71.
- Tanda G. ,Heat transfer in rectangular channels with transverse and V-shaped broken ribs. *Int J Heat Mass Transfer* 2004;47:229–43.
- Tanda G. ,Heat transfer and pressure drop in a rectangular channel with diamond-shaped elements. *Int J Heat Mass Transfer*2001;49:3529–41.
- VeyselOzceyhan et al.,Heat transfer enhancement in a tube using circular cross sectional rings separated from wall,*Science Direct, Applied Energy* 85 (2008) 988–1001.
- Zimparov, V., Prediction of Friction Factors and Heat Transfer Coefficient for Turbulent Flow of Corrugated Tubes Combined with Twisted Tape Inserts, Part 1 – Friction Factors, *Int. J. Heat and Mass Transfer*, 47 (2004), 3, pp. 589-599.
- Zimparov, V., Prediction of Friction Factors and Heat Transfer Coefficient for Turbulent Flow of Corrugated Tubes Combined with Twisted Tape Inserts, Part 2 – Heat Transfer Coefficient, *Int. J. of Heat and Mass Transfer*, 47 (2004), 2, pp. 385-393.



## HUMANITY IN CONTEXT OF PROFESSIONAL LIFE

*Vasil Gluchman, Prof., PhD*

Institute of Ethics and Bioethics, University of Prešov, Prešov (Slovakia)

---

### Abstract

Author understands humanity as all the forms of behaviour leading to the protection and maintenance, i.e. development of human life. On the basis of the differences in the objects of our behaviour and conduct, he distinguishes between humanity as a natural-biological quality and a cultural (moral) quality. The moral value of the first kind of behaviour is determined by our biological or social relations to our close ones. In the second case, the moral value of our behaviour to strangers is a pure manifestation of our morality and culture.

---

**Keywords:** Humanity, human nature, moral value, professional life

### Introduction

Contemporary genetics, neurology, biology, zoology, ethology, etc., present ever-new knowledge of genetic similarity between humans and the animal realm; the similarity between human brain activity and behaviour or conduct and the brain activity and behaviour of many representatives of the animal realm, especially primates or mammals, but also some other kinds of animals.

Paola Cavalieri holds the opinion that contemporary scientific knowledge shows that there is no reason for the existence of a categorical difference between humans and non-humans. The decoding of genome of humans and other animal species has proved quite clearly the existence of evolutionary continuity between the humankind and other animal species. Thus, according to her, moral philosophers are not right if they still persist in claiming the moral superiority of the human species.<sup>115</sup> Theresa S. S. Schilhab holds a similar position when stating that contemporary empirical research rejects the preference of the contrast between the humans and apes capable of self-reflection and the mentally inferior animals lacking the concept of Self.<sup>116</sup> On the basis of the examination of the similarities in human and animal behaviour, Marc Bekoff has concluded that humans are not necessarily morally superior to animals.<sup>117</sup>

So, is humanity a specifically human quality that separated man from nature; by which man overcame his animality, i.e. his biological and natural determination, as Kant expressed it? And what is actually humanity?

### A Concept of Humanity

According to common sense morality, we often understand humanity, on the one hand, as the respect for, and acceptance of human being, and, on the other hand, as the support of the effort to develop its strengths and abilities. Let us think about these individual aspects of humanity and decide to what extent it is really possible to perceive them as adequately expressing the meaning of the concept of humanity. On the common sense

---

<sup>115</sup> Cavalieri 2002, pp. 78-79.

<sup>116</sup> Schilhab 2004, p. 123.

<sup>117</sup> Bekoff 2004, pp. 515-516; 2006, p. 80.

morality level humanity is first of all the respect for human being. It means that in the case of others we respect their ontological or metaphysical status of human beings, i.e. that they are above all the bearers of the morphological signs belonging to human being (physiological similarity with people). This results in the duty to behave towards them as to the members of the same species; that is as to the beings that are equal to us. In the case of the support of efforts at the development of someone's powers and abilities it usually means the creation of the economic, social, mental, cultural, intellectual, educational and professional conditions for this human being's achievement of full development.

Taking into account only the points made so far, we could conclude that our respect for the newborn, our satisfaction of its needs, its rearing and education is nothing unique, nothing that is only characteristic of human species. A very similar, in some cases almost identical, behaviour can also be found in animal species, especially mammals. We could pose a question whether such behaviour in people is a sign of humanity at all since the existence of this behaviour in the animal realm indicates that it rather has biological than purely moral or cultural (including professional) roots that could be used as evidence of our own uniqueness. Michael Stingl and John Collier hold an opinion that affection and the partial relationships that are built on it create a basic feature of human life, as well as the life of other primates. Then, in their opinion, we can suppose that these partial relationships will play a very important role in the theory of moral capacity based on evolutionary biology.<sup>118</sup>

Let us think what could be a really unique, completely specific feature of behaviour in people as the members of the same species that does not exist in the behaviour of the members of the rest of the animal realm? On what basis could we speak of humanity as a moral value having its origin and source not in the biological or natural, but in cultural evolution? The initial thesis of our thinking about humanity, i.e. humanity as the respect for human life, appears to be more a natural or biological than solely moral (or professional) factor. Undoubtedly, it is true that morality has its biological basis related above all to the value of human life.<sup>119</sup> Bekoff believes that the origin of virtue and morality is older than human species.<sup>120</sup> However, if we want to emphasize our uniqueness, or difference from the rest of the animal realm, we have to find something typically human in the behaviour of people, something that we could use as the basis for the value of humanity. What could that be?

The criteria of human life can be biological, social and mental qualities or capacities of human being. The biological qualities especially include the already mentioned morphological and functional signs. The social capacities comprise speech and communication capacity and the capacity to form certain social contacts, interpersonal relationships, mobility of an individual, the ability to take care of oneself, moral as well as professional judgement and the ability to plan the future. The mental qualities and capacities include, in our opinion, the existence of consciousness, self-awareness, abstract thinking, free will, moral and professional thinking. These criteria comprise the objectively existing qualities, capacities of human being, i.e. their presence or absence, and not their quality or quantity. The minimal criteria for the definition of the real human life, as different from the pure vegetative state of human organism, have to comprise at least some social and mental qualities or capacities. If a human life does not comprise any of the social and mental qualities or capacities, it only exists on the biological level of human organism and it can be treated accordingly in an effort at its maintenance.

Another frequently mentioned aspect of humanity defined as a moral value is that man helps another man either with the realization of his goals and intentions or in the case of

<sup>118</sup> Stingl and Collier 2005, pp. 14-15.

<sup>119</sup> Bekoff 2004; Ridley 1996, 2001; Ruse 1998; Waller 1997; Wright 1994.

<sup>120</sup> Bekoff 2004, pp. 515-516.

his misery, or suffering. Are these uniquely human forms of behaviour or can they also be found in the animal realm? If we think about the help with the realization of goals and intentions, we can find something similar in the animal realm in the case of the cooperation of various members of the same species during hunting. We could point out that while man can help the other person unselfishly, animals cooperate in hunting to acquire food in an easier way. A sceptic could claim that even altruistic behaviour of people is not completely unselfish since what these people acquire is at least the good feeling that they helped someone and that is the sole reason why they do it. According to sceptics, only the conduct based on the Kantian pure duty, which excludes any empirical explanation of why we perform the duty, can be accepted as purely unselfish and altruistic. Despite these objections of the sceptics, we can probably perceive altruistic help with the realization of others' goals and intentions as something that goes beyond the limits of the purely biological or natural dimension of our behaviour and conduct. It is especially true if this altruistic help is given to strangers since this feature of behaviour does not exist in the animal realm. Humans can offer assistance to the strangers that they meet in the street, if they need it, or to the strangers in foreign countries, whom they will never meet, if they need aid because of wars or natural disasters that struck the given part of the world.<sup>121</sup> In this case we can state that it is a form of behaviour of man towards another man that transcends the natural dimension and is a result of the cultural evolution, including the moral and professional development. A sceptic can argue that this aid is usually provided on the international level and that it can include also motives that may not be completely unselfish and spontaneous. This can be true, but what I have in mind is the behaviour of the individuals who help others independently from state institutions and with the intention to help the people who need it. An example can be the aid provided for the countries and people suffering the aftermath of earthquakes or floods, but also the aid provided for the children in foster homes. Such behaviour is exclusively human and that is why we can perceive it as a manifestation of humanity, as a moral value that humanity comprises.

However, what about the conduct or help based on the expected reciprocity? Can we also say that such conduct transcends our natural or biological frame and results from our cultural evolution? Can we say that such conduct corresponds with the moral and professional dimension of humanity? Can reciprocity be found in relations among animals? Certainly we can find it in members of the same species, especially if they belong to the same herd, flock, or pack.<sup>122</sup> In no case it is something that we can perceive as calculative behaviour, as it is usually called if it appears in human relationships, but it is something quite natural in the animal relations because it is expected that every member take part in the maintaining of the life of the herd, flock or pack. A lot of biologists speak in this respect about so called reciprocal altruism, according to which animals in danger try to save, or protect the members of their herd, flock or pack against predators by drawing attention to themselves, so that others could escape safely.<sup>123</sup> This even leads to show that also in the animal realm there exists the self-sacrifice for the good of others of the same species that are members of the same herd, flock or pack. Consequently, not even man's capacity for self-sacrifice for the good of others is a completely human quality. Despite the positive value that it comprises, it cannot be considered a typically human quality that is a result of cultural evolution and a purely moral factor. Rather the contrary is true. It becomes clearer and clearer

---

<sup>121</sup> For clarification, and the preservation of the continuity of the text, I want to explain that in the following pages the concept 'stranger' will be used in the above-defined meaning.

<sup>122</sup> Boesch 2002; Schuster 2002.

<sup>123</sup> for the discussion about the altruism of humans and animals see, for example, Brosnan and de Waal 2002; Collier and Stingl 1993; Dawkins 1976; Fehr, Fischbacher and Gächter 2002; Hill 2002; Narveson 2000; Price 2003; Ridley 1996, 2001; Rottschaefer 1998; Stich 2007; Wilson, E. 2004; Wright 1994.

that a lot of manifestations of human behaviour that we intuitively or on the common sense morality basis consider human are results of biological or natural evolution and they also exist in members of other animal species. Michael Ruse believes that the features of altruistic behaviour akin to moral behaviour can also be found in higher primates.<sup>124</sup> Similarly, Lang and Sober and Strier conclude that if we accept man or human species as part of nature, then we have to accept that a number of manifestations of human behaviour are comparable with the manifestations of behaviour in other species, although there can exist qualitative variability.<sup>125</sup> On the other hand, for example, Catherine Wilson states that behaviour of animals, including the socially living ones, as e.g. ants or chimpanzees, is not moral, although in many cases they behave comparably to humans. According to her, we cannot ascribe to them any moral beliefs or agency. In her opinion, despite the existence of the cooperation among animals, we cannot call their society moral because our idea of morality is based on the ability to abstract and generalize.<sup>126</sup> However, Marc Bekoff believes that we can find in animals such manifestations of behaviour that evidently have a moral dimension, e.g. honesty. In his opinion a lot of animals, especially mammals, have the sense of honesty because it helps them survive in their environment.<sup>127</sup>

If we are to summarize the so far developed ideas about humanity, then we have to state that a great majority of the manifestations of man's behaviour that we usually call humane have mainly biological or natural dimension that we have in common with other animal species, especially mammals and primates. These manifestations of behaviour include the ones that are related to the protection and maintenance of our own life, the life of our children, relatives, friends and acquaintances. In relation to these people (if we respect and support their lives, interests and goals) we behave essentially in the same way as members of various animal species, especially mammals and primates, behave towards their close ones. Such behaviour, despite the fact that it is very needed and desired, can in no case be seen as uniquely human; as something that can create a basis for the humankind's claim to a special status in relation to other mammals and primates. The basis of our behaviour is biological or natural. People, however, ascribed a moral value to it and it could be discussed whether it was right. Specifically human behaviour that is not based on biological or natural but exclusively moral basis is our behaviour related to the protection of variously disabled forms of human life. It refers in the same way to our behaviour towards strangers if it is aimed at the protection and maintenance of their life, property, physical, mental and professional integrity, their goals and intentions helping to protect and maintain life.

Consequently, we can try to conclude the so far presented thinking about humanity and on this basis define the active and passive forms of the realization of humanity. The active form means the direct involvement of moral agent through his participation in the activity developed for the benefit of the strangers in need of help. The passive form of the realization of humanity means that our behaviour expresses our compassion with the strangers affected by disaster. Especially in the case of the latter form an important role is played by moral feelings. Usually this passive form of humanity forms the basis, or is the condition for the realization of the active form of humanity, i.e. for the providing of assistance to those people who need it. Compassion with the suffering often (though not always) leads to the acting for the benefit of these people. Of course, the active help is always more valuable than mere compassion, but we should not minimize the value or potential of the humanity comprising compassion. Our capacity to forgive comprises a similar potential of being humane. Forgiveness, just like compassion, can be the initial point for our further

---

<sup>124</sup> Ruse 1998.

<sup>125</sup> Lang 2002, p. 668.

<sup>126</sup> Wilson, C. 2004, pp. 3; 21.

<sup>127</sup> Bekoff 2004, p. 506.

acting, the active realization of humanity in the form of assistance to others. The passive humanity can also be reflected in not acting, i.e. not causing harm to other person despite the fact that the moral agent could do it while realizing his rightful intentions and goals. This passive form of humanity can be seen as a certain minimal level of humanity related to the fact that if the moral agent cannot help other man, he at least expresses his compassion, or at least does not act in the way that could harm the other in the realization of his rightful intentions and aims. The active form of the realization of humanity can be divided into positive and negative. The positive form means a direct assistance to a stranger who needs it in the realization of his positive intentions and goals. The negative formulation means to prevent other person from the realization of harmful aims, intentions that could affect some stranger.

My thinking, developed so far, has brought me to the conclusion that it is possible to respect humanity from the metaphysical or ontological perspective, i.e. to perceive someone as a human being on the basis of his morphological and functional signs belonging to human beings. This, however, does not say anything about the moral or professional aspect of humanity. We can only latently create conditions for the formulation of a definition of the moral value of humanity. From the ethical, moral or professional perspective, humanity has to be realized and not only respected because it implies acting to the benefit of the strangers in need. It is latently present also in the passive form of humanity, i.e. in the feeling of compassion with the suffering or misfortune of strangers or in the case of forgiving someone. The moral and professional value of humanity can be realized only through our behaviour and conduct in relation to strangers.

I think that we have to distinguish between the generic behaviour and conduct of humans that, despite having a biological-natural basis, also comprises positive moral dimension related to the protection and maintenance of human life from the behaviour that too has a biological-natural basis, but comprises a negative moral dimension. In the animal realm the protection and maintenance of life, on the one hand, or its destruction, on the other hand, have no moral dimension, or effect. Both manifestations of behaviour, protective and destructive, are the natural manifestations of animal behaviour and do not evoke any wider reaction among the members of the animal realm. Their effect is temporary and impact limited to the local area. In the case of human society the reaction to such behaviour is wider and, owing to the media, can cross the local borders in which certain kind of behaviour happened very quickly, especially if this behaviour represses or destroys human lives.

That is why I suggest that we speak about humanity in all the cases in which human life is protected and maintained (including professional life) since it brings positive consequences for human life; with the specification that if it is the protection and maintenance of one's own life, the lives of our close ones, friends or acquaintances, it is the humanity based on a biological-natural foundation that, however, has also its moral as well as professional dimension and effect. On the contrary, the manifestations of the protection and maintenance of life in relation to strangers represent the real moral and professional value of humanity, i.e. they are the results of our cultural evolution, our moral and professional development. In this way we accept all the positive manifestations of our behaviour in relation to other people. Especially, we emphasize the value of helping, the protection and maintenance of the handicapped forms of human life and the strangers who need it because such behaviour transcends our biological-natural dimension, or the basis that we have in common with many other representatives of the animal realm.<sup>128</sup>

---

<sup>128</sup> Bruce N. Waller in this respect speaks about the morality of care and the morality of duty. In his opinion, human rationalistic morality is an improved animal morality of care. Ethics of care is in its essence valid because affection, care, trust and generosity form a moral basis. The attitude based on rational principles is an important means of the widening, improving and supporting of moral behaviour when affection reaches its

In the first case we understand humanity as a generic, natural-biological, quality typical of the behaviour of the members of human species, while in the second case we understand it as a moral as well as professional quality, which despite having features of similarity with the first quality, differs in respect to the object of its realization. Despite the fact that in the first case we understand humanity as a biological-natural quality of man, this understanding of humanity cannot be identified with the biologism of humanity because my understanding of humanity is related only to the behaviour leading to the protection and maintenance of human life. If this understanding of humanity is not to be influenced by speciesism, then we have to accept that in the animal realm, especially in mammals and primates, the protection and maintenance of one's own life, the life of offspring and other members of the herd, flock or pack is a natural-biological quality typical of their species, and that we can call it animality and see it as equal in its forms or manifestations of behaviour to humanity as a natural-biological but not moral quality typical of human species.

To summarize our points, we can state that humanity is understood as all the forms of behaviour leading to the protection and maintenance, i.e. development of human life (including professional life). On the basis of the differences in the objects of our behaviour and conduct, we distinguish between humanity as a natural-biological quality and a moral quality. The moral value of the first kind of behaviour is determined by our biological or social relations to our close ones. In the second case, the moral and professional value of our behaviour to strangers is a pure manifestation of our morality. In the first case the protection and the maintenance of life is a result of our basic value orientation, including our moral values that result from this orientation. In the second case our behaviour and conduct for the benefit of strangers brings an additional moral and professional value. The basic form of humanity resides, then, in the protection and maintenance of one's own life and the lives of our close ones, relatives, friends and acquaintances. It is the alpha and omega of our behaviour, which creates the basic natural-biological framework for our morality. It also creates the foundation for the basic rights and duties related to the protection and maintenance of human life. On the other hand, the protection and maintenance of the life of strangers is the moral and also professional surplus value by which we create a new, higher quality in our behaviour in relation to other people. In this case we can really speak about humanity as a moral and professional quality, or value. It is something that is really specifically human and which deserves respect and admiration. By such behaviour man proves that he can, at least to certain extent, transcend the natural-biological framework of his determination.

## Conclusion

This can be achieved through the moral principles and particular moral as well as professional norms that define some ways of pursuing humanity in the individual and social life of moral communities (including professional life). I do not think that humanity as a moral quality is unachievable and abstract moral ideal that is too far from moral practice of the moral agents. I mean that humanity as an additional moral and professional value is the expression of actual requirements and interests of the individuals and humankind in general. Human beings hope for their rational existence and survival through the application of humanity, its principles and respect for human dignity. Human existence also depends on the solution of environmental issues which represents an external condition for the preservation of human life in general. However, what is important is the fact that the moral agent should try to perform humanity in his life.

---

limits. The moral basis of the morality of duty resides in care and affection. The affection is rooted in biology, supported by direct and indirect reciprocity and exists prior to rationality. The rational morality of duty is an adaptive complement of the morality based on affection and care (Waller 1997, pp. 353-354).

Humanity is one of the most significant moral and professional principles on which the human society is based as a society of the co-operating individuals (including professional life). We can see that the future of humankind is possible only if we accept and apply the principle of humanity as one of the fundamental principles. There are not only the basic duties of mankind towards the preservation of the future existence of humankind, but there is also a danger of the environmental disaster. It is so urgent that it is necessary to overcome narrow anthropological views on the future of the world and its life.

The idea of the preservation of human existence must be associated with the respect for and the application of humanity as moral and professional quality and it is only possible response to the future of humankind. The international co-operation of states and nations is the means of fulfilling humanity in ordinary life of the individual and whole human society (including professional life). The co-operation brings a perspective of preservation of human life. One of the most significant conclusions of this reasoning is an idea that the meaningful existence of the moral agents, communities and whole humankind is possible only through acceptance and application of humanity. I do not think that it is an abstract and unachievable goal for most people during their lives. To respect and apply humanity in our lives, we do not need necessarily be the saints. Being human is enough. That is why I think we can justify the attribute human and moral being by our action regardless the unfavourable character of contemporary period which perhaps tend to stimulate opposite position. Despite this, I think no other alternative than the acceptance and application of humanity in the world is possible.

I conclude with Thomas Garique Masaryk's quotation: "[H]umanistic ideal, [authentic] humaneness, is the foundation of all strivings of our time-particularly those that prevail at present in our national life. It is this which Kollár means when he says: 'When you cry, Slav, may it always mean Man'"<sup>129</sup>

*This paper is supported by the Slovak Research and Development Agency, contract No. APVV-0432-10.*

### References:

- Bekoff, M. Animal Passions and Beastly Virtues: Cognitive Ethology as the Unifying Science for Understanding the Subjective, Emotional, Empathic, and Moral Lives of Animals. *Zygon* 2006, 41(1): 71-104.
- Bekoff, M. Wild Justice and Fair Play: Cooperation, Forgiveness, and Morality in Animals. *Biology and Philosophy* 2004, 19(4): 489-520.
- Boesch, Ch. Cooperative Hunting Roles Among Tai Chimpanzees. *Human Nature* 2002, 13(1): 27-46.
- Brosnan, S. F. and Waal, F. B. M. A Proximate Perspective on Reciprocal Altruism. *Human Nature* 2002, 13(1): 129-152.
- Cavaleri, P. The Animal Question. Why Non-Human Animals Deserve Human Rights. New York: Oxford University Press, 2002.
- Collier, J. and Stingl, M. Evolutionary Naturalism and the Objectivity of Morality. *Biology and Philosophy* 1993, 8: 47-60.
- Dawkins, R. The Selfish Gene. Oxford University Press, New York, 1976.
- Fehr, E. Fischbacher, U. and Gächter, S. Strong Reciprocity, Human Cooperation, and the Enforcement of Social Norms. *Human Nature* 2002, 13(1), 1-25.
- Gluchman, V. Human Being and Morality in Ethics of Social Consequences. Lewiston: Edwin Mellen Press, 2003.
- Hill, K. Altruistic Cooperation during Foraging by the Ache, and the Evolved Human Predisposition to Cooperate. *Human Nature* 2002, 13(1): 105-128.

---

<sup>129</sup> Masaryk 1971, p. 61.

- Masaryk, T. G. *Humanistic Ideals*. Lewisburg: Bucknell University Press, 1971.
- Lang, Ch., Sober, E. and Strier, K. Are human beings part of the rest of nature? *Biology and Philosophy* 2002, 17: 661-671.
- Narveson, J. Discussion-Review: Evolutionary Biology, Altruism, and Moral Theory. *Biology and Philosophy* 2000, 15(2): 259-274.
- Price, M. E. Pro-Community Altruism and Social Status in a Shuar Village. *Human Nature* 2003, 14(2): 191–208.
- Ridley M. *The Origins of Virtue: Human Instincts and the Evolution of Cooperation*. New York: Viking, 1996.
- Ridley M. *The Cooperative Gene*. New York: The Free Press, 2001.
- Rottschaefer, W. A. *The Biology and Psychology of Moral Agency*. Cambridge: University Press, 1998.
- Ruse, M.. *Taking Darwin Seriously: A Naturalistic Approach to Philosophy*. Amherst, NY.: Prometheus, 1998.
- Schilhab, T. S. S. What Mirror Self-Recognition in Nonhumans can tell us about Aspects of Self. *Biology and Philosophy* 2004, 19: 111-126.
- Schuster, R. Cooperative Coordination as a Social Behavior. Experiments with an Animal Model. *Human Nature* 2002, 13(1): 47–83.
- Stich, S. Evolution, Altruism and Cognitive Architecture: A Critique of Sober and Wilson's Argument for Psychological Altruism. *Biology and Philosophy* 2007, 22: 267-281.
- Stingl, M. and Collier, J. Reasonable Partiality from a Biological Point of View. *Ethical Theory and Moral Practice* 2005, 8: 11-24.
- Waller, B. N. What Rationality Adds to Animal Morality. *Biology and Philosophy* 1997, 12: 341–356.
- Wilson, C.. *Moral Animals. Ideals and Constraints in Moral Theory*. Oxford: Oxford University Press, 2004.
- Wilson, E. O. *On Human Nature*. Cambridge: Harvard University Press, 2004.
- Wright, R. *The Moral Animal: Why We Are, the Way We Are: The New Science of Evolutionary Psychology*. New York: Pantheon Books, 1994.



# EVALUATION OF THE CONDITION DEHYDROGENASE CYCLE OF TRICARBOXYLIC ACIDS WHILE ALLOTRANSPLANTING FETAL TISSUE MUSCLE TO RATS

*A.A. Yanchukova*

*S.A. Petrov*

Odessa National University I.I. Mechnikov

---

## **Abstract**

The purpose of our research was to study dehydrogenase CAC (citric acid cycle) activity at allotransplantation of embryonic muscular tissue and operation without replanting.

For this purpose, the following enzymes were investigated: piruvate degidrogenase,  $\alpha$ -ketoglutarate dehydrogenase, suktsinatdegidrogenase, laktatdegidrogenase, malatdegidrogenase, izotsitratdegidrogenase. So, allotransplantation leads to activation of oxidizing processes in the investigated muscular tissue of an adult individual.

---

**Keywords:** Allotransplantation, cycle of citric acids, degidrogenase, embryo

## **Introduction**

Embryonic tissues has special (characteristic) morphological and biochemical features. They consist, generally, from the blast and the stem cells that have low antigenicity and high proliferative and energy potential (Grishchenkov.I., 2004; Masur U.I., 1995).

Exactly these properties led to the wide use of embryonic tissues in experimental and clinical medicine for transplantation with the purpose of regeneration stimulation, as on the basis of the transplanted fabrics creates the model for regeneration processes (D. S. Sarkisov et al., 1991).

Regeneration processes not only provide restoration of fabrics defect at their damage, but also are a structural basis of cellular and fabric functions restoration (Tiboni G. M., et al, 1997). According to this fact the intensity and nature of regeneration processes significantly influence to the resistance of an organism. One of the main ways to influence regeneration processes is the transplantation of embryonic tissues.

The wide use of fetal tissue transplantation in medical research led to a number of issues related to the definition of its effect on the course of various diseases and the study of the metabolic processes flow (particularly of energy exchange) in the graft.

Thus, the study of the fetal tissues metabolism has a dual purpose - on the one hand is to identify of biochemical features of embryonic tissues energetic exchange, on the other - the definition of the metabolic relationships of embryonic transplants and tissues of the recipient, which can be used in the medicine practice.

## **Materials and methods**

The purpose of our research was to study dehydrogenase CAC activity at allotransplantation of embryonic muscular tissue and operation without replanting.

We have been investigated such enzymes: pyruvate dehydrogenase,  $\alpha$ -ketoglutarate dehydrogenase, succinate dehydrogenase, lactate dehydrogenase, malate dehydrogenase, isocitrate dehydrogenase.

Fetal thigh muscle tissue was transplanted by homologous adult individual.

The same procedure was carried out with an abdominal muscle tissue of the embryo. Indications were taken at 1<sup>st</sup> – 3<sup>rd</sup> and 7<sup>th</sup> day after allotransplantation. Muscle tissue served as control, and was not subjected to surgery.

The activity of investigated dehydrogenase were determined by Gabler method (Gabler S., 1961) in modification by Kiessling and Lundquist (Kiessling K.N, et al, 1961). Statistical results analyze was performed using Student's method (Rokitsky P.F, 1972).

## Results and Discussion

Allotransplantation of femoral muscle tissue does not lead to significant changes in the activity of pyruvate dehydrogenase in the femoral muscle of adult individual.

In the femoral muscle tissue of the embryo there was observed a significant decrease of the pyruvate dehydrogenase activity.

Table 1. Activity of CAC enzymes at allotransplantation of embryonic femoral muscular tissue (nMol ferritsionid/g tissue).

Tissue Enzymes	Thigh muscle tissue of adult rat				Thigh muscle tissue of the embryo			
	Control	1st day	3 <sup>rd</sup> day	7 <sup>th</sup> day	Control	1st day	3 <sup>rd</sup> day	7 <sup>th</sup> day
Pyruvate dehydrogenase	50±3	40±5	60±7	60±8	90±2	50±1*	80±1*	80±1*
$\alpha$ -Ketoglutarat-dehydrogenase	20±1	50±2*	60±8*	80±5*	70±1	50±2*	50±1*	90±1*
succinate dehydrogenase	10±2	50±1*	80±2*	70±1*	80±2	30±1*	60±2*	70±2*
lactate dehydrogenase	20±5	70±7*	60±2*	60±1*	85±1	70±3*	50±1*	70±3*
malate dehydrogenase	20±5	50±1*	50±5*	50±1*	80±8	60±4	50±1*	60±2*
isocitrate dehydrogenase	20±4	60±5*	70±1*	70±1*	80±4	50±2*	60±1*	100±10

t<sub>≥2,3</sub>- significantly relative to the control

Investigating of  $\alpha$ -ketoglutarate dehydrogenase activity it is possible to note a significant increasing as in femoral muscle of adult individual, as in the femoral muscle tissue of the embryo at the 7<sup>th</sup> day of research.

Activity of a suktsinatdegidrogenase increases in femoral muscular tissue of an adult individual while in femoral muscular tissue of an embryo there was a recession of this activity. The same picture was observed with activity of a laktatdegidrogenase and malatdegidrogenase.

Analyzing the activity of an izotsitratdegidrogenase at allotransplantation of embryonic femoral muscular tissue it is possible to note the reliable increase of it in femoral muscular tissue of an adult individual. In femoral muscular tissue of an embryo at 1<sup>st</sup> -3<sup>rd</sup> days of research the activity of an izotsitratdegidrogenase decreased concerning the control, but right to the 7<sup>th</sup> day it increased to control results.

Activity of piruvatdehydrogenase at allotransplantation of fetal abdominal muscle was increased by day 7 of research, as abdominal muscle tissue of adult individual as in abdominal muscle tissue of an embryo (Table 2).

Table 2. Activity of CAC enzymes at allotransplantation of embryonic abdominal muscle tissue (nMol ferrizionid/g tissue)

Tissue Enzymes	Thigh muscle tissue of adult rat				Thigh muscle tissue of the embryo			
	Control	1st day	3 <sup>rd</sup> day	7 <sup>th</sup> day	Control	1st day	3 <sup>rd</sup> day	7 <sup>th</sup> day
Pyruvate dehydrogenase	60±1	40±1*	50±2*	90±3*	30±1	60±1*	30±5	70±3*
α-Ketoglutarat-dehydrogenase	60±5	50±1	60±8	70±5	40±2	50±4	60±1*	60±5*
succinate dehydrogenase	40±3	60±7*	50±1*	50±2*	60±5	40±1*	70±4	80±1*
lactate dehydrogenase	50±5	60±1	50±1	90±2*	50±1	50±5	50±4	60±5
malate dehydrogenase	60±4	60±6	50±1*	80±9	50±1	50±3	50±1	80±7*
isocitrate dehydrogenase	40±2	50±3*	70±1*	60±4*	60±5	40±3*	70±5	40±1*

t≥2,3- significantly relative to the control

Regarding α-ketoglutarate dehydrogenase - significant change in the activity occurred only in the abdominal muscle of the embryo right to the day 7 of research.

In the abdominal muscle tissue of adult individual with allotransplantation of embryonic muscle tissue there was a significant increase in the activity of succinate dehydrogenase, lactate dehydrogenase and isocitrate dehydrogenase concerning to the control at day 7 of research.

Activity of a malate dehydrogenase at day 7 of research authentically didn't differ from the control. In the abdominal muscle tissue of the embryo the activity of succinate dehydrogenase and malate dehydrogenase was significantly increased at 7 day of research concerning to the control.

During operation without replanting, the activity of pyruvate dehydrogenase significantly decreased concerning the control, both in tissue the femur and the abdominal muscle tissues at day 7 of the research (Table 3).

Activity of α-ketoglutarate dehydrogenase, succinate dehydrogenase and isocitrate dehydrogenase in the femoral muscle of adult rat significantly increased concerning to the control at day 7 of the research.

In the abdominal muscle tissue of adult individual there was a significant decrease of α-ketoglutarate dehydrogenase, lactate dehydrogenase, malate dehydrogenase and isocitrate dehydrogenase activity at the 7 day of the research. Succinate dehydrogenase activity was not significantly changed in the abdominal muscle tissue of adult individual.

Table 3. Activity of CAC enzymes during operation without replanting (nMol ferrizionid/g tissue)

Tissue Enzymes	Thigh muscle tissue of adult rat				Thigh muscle tissue of the embryo			
	Control	1st day	3 <sup>rd</sup> day	7 <sup>th</sup> day	Control	1st day	3 <sup>rd</sup> day	7 <sup>th</sup> day
Pyruvate dehydrogenase	50±1	50±2	64±7	28±3*	60±1	47±5*	64±8	29±2*
α-Ketoglutarat-dehydrogenase	20±1	53±1*	58±5*	33±5*	60±1	43±5*	55±5	33±4*
succinate dehydrogenase	10±2	42±8*	50±5*	32±2*	40±1	38±5	50±6	31±7
lactate dehydrogenase	20±5	45±8*	53±2*	32±3	50±5	52±1	63±1*	30±4*
malate dehydrogenase	20±5	43±5*	33±5	23±2	60±1	49±8	36±1*	24±3*
isocitrate dehydrogenase	20±4	47±5*	60±5*	31±2*	40±1	47±8	80±4*	28±1*

t≥2,3- significantly relative to the control

So, allotransplantation leads to activation of oxidizing processes in the studied muscular tissue of an adult individual.

Pyruvate dehydrogenase activity in the femoral muscle of adults with no replanting operations decreased, and at Pyruvate dehydrogenase activity in the femoral muscular tissue of

an adult individual during operation without replanting decreased, and at the femoral allograftembryonic muscle tissue remained unchanged.

Consequently, allotransplantation has a positive effect on the activity of pyruvate dehydrogenase. Activity of  $\alpha$ -ketoglutarate dehydrogenase, suktsinatdegidrogenaze and izotsitratdegidrogenaze increased as well as at allotransplantation of embryonic femoral muscular tissue, as during operation without replanting. According to this fact we can say that, allotransplantation not affect changes in the activity of such enzymes.

Since animals exposed a surgery without replanting, malatedehydrogenase and lactate dehydrogenase activity in the femoral muscle tissue remained virtually unchanged, and allotransplantation led to an increasing of these enzymes activity, we can claim that allotransplantation has a positive effect on their activity.

Allotransplantation of emrional abdominal muscle tissue has a positive effect on the activity of all enzymes researched in the abdominal muscle of adult individual at day 7 of the research.

### References:

- Masur O. E. The activity of enzymes energy metabolism of embryonic transplants. - Autoedition. cand. dis. - Kiev.-2008. – 19p.
- Rokitsky P.F. Biological statistics. - Minsk: High school. - 1972. – 318p.
- Gabler C. Studies on the physiological function of thiamine//J. Biol. Chem.-1961. - V.12. - p. 3112-3120.
- Kiessling K.H., Lundquist I.I. Thiamine diphosphate in grouing tissues//Exp. Cell. Res. - 1961. - V.26, No. 1. - p.189-197.
- Grishchenko V.I., Yurchenko T.N., Prokopyuk O.S. New cryobiological technologies of receiving cellular and tessue fetopletsentar transplants and their use in medicine//Transplantology. - 2004.-№ 3. - Page 123-129.
- Features of the immune answer at transplantation of fetal tissues / Masur U.I., Fedechko Y.M., Dibas B. V., Masur O. E., Pavlovsky M.P// Clinical surgery – 1995. - No. 12. – Page 23 – 25.
- Allotransplantation of the cultivated fibroblast at not healing wounds after an autodermoplastik / D. S. Sarkisov, E. V. Glushchenko, Sh. R. Gurukov, etc.//Bulletin of experimental. biology and medicine. – 1991. – T. 111, No. 5. – C. 542-544.
- Tiboni G. M., Bucciarelli T., Amicarelli F. Spatial distribution of glutathione, glutathione-related and antioxidant enzymes in cultured mouse embryos//Archives of Toxicology. – 1997. – V. 72, No. 1. – P. 38-44

# **CONTENTS OF FAD (FLAVIN ADENINE DINUCLEOTIDE) AND TOTAL AMOUNT OFFLAVIN AT ALLOTRANSPLANTATION OF EMBRYONIC MUSCLE TISSUE AT RATS**

*S.N. Kobylnik*

*S.A. Petrov*

Odessa National University I.I. Mechnikov

---

## **Abstract**

The article presents the results of the determination of FAD and common flavin at allotransplantation of embryonic muscle tissue and determination of it without replanting. In this case, fetal tissue allotransplantation does not affect the number of common flavins. In the abdominal muscle tissue the number of common flavins increased during surgery without replanting. Number of FAD as at allotransplantation as during surgery without replanting increased in the femoral muscle of adult rat, therefore allotransplantation had no effect on the researching parameter. In the abdominal muscle tissue of adult rat at surgery without slackening, the amount of FAD did not happen any changes, but during allotransplantation of embryonic muscle tissue the amount of FAD increased, therefore it can be assumed that allotransplantation leads to increasing of FAD synthesis from riboflavin in the abdominal muscle tissue of adult rat.

---

**Keywords:** Allotransplantation, riboflavin, abdominal and thigh muscle tissue

## **Introduction**

At the present time – researching of changes in the various biochemical processes during allotransplantation of embryonic tissues cause a great interest. Accumulated right to nowadays information and knowledge of the key biochemical reactions that provide vitamin metabolism processes gave us advantages in assessing the viability of the graft, and allows widely to characterize the degree of engraftment or death and uncover the mechanisms of biochemical graft adjustment [1]. The widespread use of embryonic tissues transplantation and cells in medicine to promote research a number of issues that relate to the determination of their influence on the course of various diseases and the study of metabolic flow at the processes in transplants. [2]

In this case, study of the fetal tissues metabolism has a dual purpose - on the one hand is to identify the biochemical characteristics of the vitamin metabolism of embryonic tissues, on the other - the definition of the metabolic relationships grafts and tissues of the recipient. [3]

The aim of this work was to investigate the processes of changes in the balance of riboflavin in muscle tissue before and after allotransplantation of embryonic muscle tissue and surgery without replanting.

## **Materials and researching methods**

Experiments were carried out on the basis of the Biochemistry Department laboratory ONU I.I. Mechnikov. Allotransplantation was performed at white outbred rats - male,

weighing 180-360 g. In this research all requirements of the European Convention on the protection of animals that used for experimental purposes - were complied. Surgery was performed under sterile conditions. Source of fetal tissue were taken from embryos of adult pregnant rat females with gestational 3.5-4 weeks. The abdominal muscle tissue from embryos was removed and performed spiking to an adult homologous tissues of adult rat. A similar procedure was carried out with the thigh muscle tissue.

Operative (surgery) field was treated with Jodobac. Sutured tightly wound surface by a simple surgical suture. Impose a sterile bandage.

### Method for determination of FAD and the total amount of flavin

Based on the method of determination of flavins by Yudenfreund our modification [4]. Statistical data processing was performed using Student's t test. [5]

### Results and discussion

During determining the level of RF + PSK with allotransplantation of fetal tissue can be noted - a slight increasing of their number (amount) in the femoral muscle of adults right to day 7 of the experiment. In the femoral muscle of the embryo such results were observed at the 1<sup>st</sup>-3<sup>rd</sup> and right at the day of the experiment, also on the day 7, the monitoring indicator reached the reference value. In the abdominal muscle tissue of the embryo at 1<sup>st</sup>-3<sup>rd</sup> days after allotransplantation there was a slight increase of the RF + FMN amount and right today 7 was decreasing to control level. In the abdominal muscle tissue analyzed index decreased to the control values to the day 7 of the experiment. (Table. 1)

Table 1. Number (amount) of RF + FMN at allotransplantation of embryo tissue (mkg/g of tissue)

	Control without replanting	1 <sup>st</sup> day	3 <sup>rd</sup> day	7 <sup>th</sup> day
Femoral muscle of adult	10±2*	12±2	16±6	16±8
Femoral muscle of the embryo	8±2	8±2	12±2	8±2
abdominal muscle tissue of the adult rat	11±2	9±2	10±4	6±0,1
abdominal muscle tissue of the embryo	9±1	12±3	11±6	8±3

\*P<sub>1</sub> ≤ 0,05 – significantly relative to the control

\*\*P<sub>2</sub> ≤ 0,05 – significantly regarding the adult to embryo

Considering the results of the general amount of flavins research – we should note that in the formed muscle tissue at the first day of the experiment there was a slight increase, and on the 3<sup>rd</sup> and 7<sup>th</sup> days - decrease to baseline. In the abdominal muscle tissue amount of total flavins on day 1<sup>st</sup> increased slightly in both embryonic and in adult tissue, on the third and seventh day recorded rate decreased. (Table. 2)

Table 2. Number (amount) of RF + FMN + FAD at allotransplantation of embryo tissue (mkg/g of tissue)

	Control without replanting	1 <sup>st</sup> day	3 <sup>rd</sup> day	7 <sup>th</sup> day
Femoral muscle of adult	11±1	16±5	11±4	13±2
Femoral muscle of the embryo	9±2	15±5	9±3	6±1**
abdominal muscle tissue of the adult rat	10±2	13±2	8±2	9±1
abdominal muscle tissue of the embryo	9±1	12±2	8±2	10±3

\*P<sub>1</sub> ≤ 0,05 – significantly relative to the control

\*\*P<sub>2</sub> ≤ 0,05 – significantly regarding the adult to embryo

Number (amount) of FAD on the first day of the experiment in all researched tissues increased, and by the third days decreased from control values. By day 7, this figure exceeded the reference value in all studied tissues, except the femoral muscle of the embryo. (Table. 3)

Table 3. Number (amount) of FAD at allotransplantation of embryo tissue (mkg/g of tissue)

	Control withoutreplanting	1 <sup>st</sup> day	3 <sup>rd</sup> day	7 <sup>th</sup> day
Femoralmuscleofadult	4±1	8±4*	2±0*	10±5*
Femoral muscle of the embryo	3±1	12±6*,**	1±0*	2±0*,**
abdominal muscle tissue of the adult rat	2±1	7±2*	4±1*	4±1*
abdominal muscle tissue of the embryo	2±0	7±1*	2±0**	8±4*,**

\* $P_1 \leq 0,05$  – significantly relative to the control

\*\* $P_2 \leq 0,05$  – significantly regarding the adult to embryo

During the surgery without replanting fetal tissue there was a significant increase in the number (amount) of common flavins to day 7 studies from control values in the abdominal muscle tissue during surgery. (Table. 4)

Table 4. Number (amount) of common flavins without replanting (mkg/g of tissue)

	Control withoutreplanting	1 <sup>st</sup> day	3 <sup>rd</sup> day	7 <sup>th</sup> day
femoral muscle tissues	11±1	9±3	9±1	14±2
abdominal muscle tissues	10±2	12±3	6±1	16±1*

\* $P_1 \leq 0,05$  – significantly relative to the control

Evaluation of RF + FMN during sham surgery demonstrated a reduction of this parameter on the third day of research relative to the control as in the femoral as in abdominal muscle tissues. (Table. 5)

Table 5. Number (amount) of RF + FMN without replanting (mkg/g of tissue)

	Control withoutreplanting	1 <sup>st</sup> day	3 <sup>rd</sup> day	7 <sup>th</sup> day
femoral muscle tissues	10±1	6±2	5±1*	9±1
abdominal muscle tissues	11±2	11±4	3±1*	10±2

\* $P_1 \leq 0,05$  – significantly relative to the control

Determining the number of FAD, showed a slight decrease in its content at the third day of the experiment in the femoral and abdominal muscle tissue on the 7th day, the number of studies FAD increased significantly towards the control values. (Table. 6)

Table 6. Number (amount) of FAD during surgery without replanting (mkg/g of tissue)

	Control withoutreplanting	1 <sup>st</sup> day	3 <sup>rd</sup> day	7 <sup>th</sup> day
femoral muscle tissues	4±1	4±1	5±1	9±1*
abdominal muscle tissues	7±2	8±2	2±0,1	7±1

\* $P_1 \leq 0,05$  – significantly relative to the control

Based on these results we can conclude that the fetal tissue allotransplantation results on the 1st and 7th day of the experiment to the accelerated formation of FAD RF + FMN, which is obviously due to the increasing of metabolic needs of the tissue after allotransplantation

Allotransplantation of fetal tissue not affected. In the abdominal muscle tissue the amount of common flavins increased during surgery without replanting. Number (amount) of FAD in allotransplantation during surgery without replanting increased in the femoral muscle of adults, therefore allotransplantation had no effect on the studied (researched) parameters. In the abdominal muscle tissue of adults during surgery without slackening any changes in the amount of FAD did not happen, and at allotransplantation of embryonic muscle tissue amount of FAD increased, therefore it can be assumed that allotransplantation leads to increasing of FAD synthesis from riboflavin in the abdominal muscle tissue of adults.

### **References:**

- 1 Petrovich et al. 1994; Ermakova et al., 2004; Prats et al. 2005
- 2 Govallo V.I. Transplantation of tissues in the clinic. - M.: Medicine, 1979 - 288 p.
- 3 Khalmuradov A.G. Membrane transport of coenzyme vitamins and coenzymes / Khalmuradov A.G., Totkiy V.N., Chagovets R.V. - B.: Sciences. Dumka, 1982 - 280 p.
- 4 S.Yudenfrend. Fluorescent methods in biology and medicine.-M.-World; 1969 - 163-167p.
- 5 Rokitsky P.F. Biological statistics. - Minsk: High School, 1967 – 326p.



# THE MECHANISMS INHIBITING PYRUVATE- AND OXOGLUTARATE DEHYDROGENASE COMPLEXES IN MUSSELS

*Olga O. Semenova, PhD Student*

Ukrainian Scientific Research Institute of Transport Medicine, Ukraine

*Oleksander K. Budnyak, Assoc. Prof., PhD*

*Sergiy A. Petrov, Full Prof.*

Odessa I.I. Mechnikov State University, Ukraine

---

## Abstract

Activity of purified pyruvate dehydrogenase and 2 - oksoglutarate dehydrogenase multienzyme complexes was studied and a quantity of free SH-groups in them being influenced by chlorides of cadmium, copper and lead was determined. The conducted research proved a considerable activity impairment of dehydrogenases of oxoacids and of the free SH – groups level.

---

**Keywords:** Heavy metals, activity of multienzyme complexes, SH-groups level

## Introduction

The world scientific literature contains a considerable bulk of data describing a study of the impact which heavy metals produce on marine aquatic organisms, particularly on mussels, and accumulation of certain substances in their body tissues, survival of marine aquatic organisms, impact on their physiological functions and activity of various enzymes, etc. (Bren' 1999; Soldatov et al., 2005; Gostyukhina, 2005). However, the influence of heavy metal compounds upon the activity of the purified dehydrogenase of the Krebs cycle was studied in the individual works only. Therefore, the purpose of our work was to study the activity of purified pyruvate dehydrogenase (PDC) and 2 - oksoglutarate dehydrogenase (OGDC) multi-enzyme complexes isolated from the hepatopancreas of mussels, and the level of free SH - groups in them being influenced by chlorides of such heavy metals as cadmium, copper and lead (Cu, Cd, Pb).

## Materials and methods

We selected the Black Sea mussels *Mytilus galloprovincialis* Lam. Black morphs of 4-5 cm size. The adaptation period equalled 5 days and afterwards the mussels were used for experiments. Effects of various concentrations (0.1, 1.0 and 10.0 mg/l) of Cu, Cd and Pb chlorides upon the activity of purified mussel hepatopancreas according to (Roche & Cate, 1977) dehydrogenase oxoacids of Krebs cycle (the activity was determined by Potassium ferricyanide method (Kiessling & Lunquist, 1962), and the concentration of SH - groups - by the method using the Ellman's reagent (Orehovych, 1977). The obtained data was statistically processed according to S. Glantz (Glantz, 1998).

## Results

The results of the research are presented in Table 1.

As follows from Table 1, the activity of purified PDC and OGDC reduced pro rata when exposed to the increasing concentrations of CdCl<sub>2</sub> and PbCl<sub>2</sub>; as regards the action of

CuCl<sub>2</sub> in the incubated environment, the activity of both enzyme complexes was strongly inhibited at all concentrations, especially of the OGDC at 1 mg/l concentration.

Having obtained the data that confirmed a considerable inhibition of the PDC and OGDC activity by heavy metal chlorides, we decided to clarify a possible mechanism of this phenomenon. It is well known that many heavy metals found in tissues of humans and mammals can inhibit activity of a diversity of enzymes due to blocking their SH-groups that participate in the catalytic process either directly or indirectly.

Table 1. Activity of purified pyruvate dehydrogenase complex (PDC) and 2-oxoglutarate dehydrogenase (OGDC) multienzyme complexes and concentration of SH-groups in hepatopancreas of the Black Sea mussels *Mytilus galloprovincialis* Lam. being influenced by Cu, Cd and Pb chlorides in 0.1, 1.0 and 10 0 mg / l concentrations

		PDC		OGDC	
		Activity, nM K <sub>3</sub> [Fe(CN) <sub>6</sub> ]/mg protein/min	SH-groups, nM/mg protein	Activity, nM K <sub>3</sub> [Fe(CN) <sub>6</sub> ]/mg protein/min	SH-groups, nM/mg protein
Control	-	263.19±5.72	67.76±3.54	266.46±1.39	75.46±3.77
Cd mg/ml	0.1	210.55±8.55*	47.37±1.09*	243.26±10.83	52.69±0.40*
	1	124.73±8.86*	21.05±0.96*	168.59±6.28*	33.50±0.40*
	10	88.11±7.24*	13.82±0.40*	101.83±7.66*	14.31±0.61*
Cu mg/ml	0,1	35.47±6.35*	8.68±0.32*	202.53±7.80*	44.50±0.64*
	1	26.32±7.60*	7.10±0.34*	16.97±6.83*	1.76±0.24*
	10	32.04±6.85*	7.90±0.32*	43.00±3.72*	11.38±0.52*
Pb mg/ml	0,1	127.02±7.53*	31.25±0.52*	168.59±7.80*	31.44±0.84*
	1	107.57±5.91*	24.67±0.74*	118.80±10.83*	26.67±0.40*
	10	34.33±9.34*	8.88±0.40*	61.10±6.28*	17.24±0.40*

Note: \* significant difference from control group equals  $p \leq 0.05$ .

Therefore it was necessary to investigate whether a similar phenomenon takes place in case of enzymes of the mussel tissue. To this end, we determined the number of SH-groups in the purified enzymes of the control group and in the presence of the cadmium, copper and lead salts (Table 1). According to the obtained data, the salts of all investigated heavy metals reduced the content of SH-groups in the enzymes in a dose-dependent manner, following the almost similar regularities that govern the changes in their activity.

## Conclusion

The conducted study has proved that at the level of the purified enzymes of PDC and OGDC copper exhibited the highest inhibitory activity as compared to other studied metals – cadmium and lead. Inhibition of the PDC and OGDC activity occurs due to blocking SH-groups of enzymes.

## References:

- Bren' N.V. (1999) Use of the invertebrates for monitoring pollution of aquatic ecosystems with heavy metals (Review). *Gidrobiol. journal.* **35**: 75 – 87.
- Glantz S. Medical and biological statistics. Transl. from Eng. – Moscow, Praktika, 1999. - 460 p.
- Gostyukhina O.L. (2005) Condition of the enzyme system of antioxidant protection in Black Sea mussels *Mytilus galloprovincialis* Lam. under conditions of the natural oxidative stress: brown morpha. *Scientific proceedings of Ternopol National Ped. University, series "Biology". Special issue: Hydroecology* **27**: 52 – 54.

Soldatov A. A., Aleksandrova O. L., Golovina [et al.] (2003) Enzyme system of antioxidant protection in Black Sea mussels *Mytilus galloprovincialis* Lam. with pigmented and depigmented tissue structures. *Dop. NNNU*. **5**: 162 – 166.

Modern methods in biochemistry / edit. by V.N. Orekhovych. – M: «Meditsina», 1977. – p. 227-228.

Kiessling K. H., Lunquist C.G. (1962) Thiamin diphosphate in growind fissues. III. Pyruvate oxidation in liver mitochondria from young and from thiamine diphosphate deficient adult rats. *Experim. Cell. Kes.* **26**: 189-197.

Roche I.E. Cate R.J. (1977) Purification of porcine liver pyruvate dehydrogenase complex and characterization of its catalitic and regulatory properties. *Arch. of Biochim. and Biophys.* **183**: .664-677.

## CONDITION OF GLUTATHIONE (GSH) METABOLISM SYSTEM AT ALLOTRANSPLANTATION OF EMBRYONIC MUSCLE TISSUE AT RATS

*O.V. Kulibaba, Graduate Student*

*S.A. Petrov, Dr.B.S. Prof.*

Odessa national university I.I. Mechnikov

---

### Abstract

This article presents the results of determination of the of reduced glutathione content, glutathione reductase and glutathione peroxidase during allotransplantation of the embryo muscle tissue. During the research there was carried out 2 kinds of surgery: 1st - allotransplantation of embryo muscle tissue; 2nd - surgery without replanting. To obtain embryos we used female rats from gestation 3-4 weeks. We took an abdominal muscle tissue from embryo that was hemmed to homologous tissue of the adult rat. The same procedure was carried out with femoral muscle tissue. It was found that allotransplantation of the embryo muscle tissue leads to an increasing of restored glutathione at day 7 of experiment in femoral and abdominal muscle of adult rat, leads the increasing of glutathione glutathione reductase activity in all researched tissues on day 7 of the experiment, except the femoral muscle of the adult rat. At experiment day 7 during surgery without replanting glutathione increased in femoral and abdominal muscle tissue, and activity of glutathione reductase increased only in the abdominal muscle, while activity of glutathione peroxidase in the abdominal muscle tissue decreased.

---

**Keywords:** Allotransplantation, reduced glutathione, glutathione reductase, glutathione peroxidase, femoral and abdominal muscle tissue, embryo

### Introduction

Allotransplantation of embryonic tissue is one of the actual directions in modern theoretical and medical biochemistry, which is developed for stimulation and restoration functions (Shumakov V.I., 2002). Allotransplantation of embryonic tissue is considered as a possible alternative for traditional, conservative treatment methods, as well as the methodological base of experimental development (Stankov D.S.).

This fact underscores the urgency of the problem in experimental and clinical biochemistry, and perspectives of embryonic tissues transplantation (Bjorklund A., 1998).

One of the most important issues, that has medical and biological importance is the question of functioning and increasing of vital activity of the graft (transplant). In this matter, it is known that after transplantation of fetal tissue, the graft grows and differentiates, sprouting by blood vessels, thus forming conditions for oxygenation and energy supply of the activity (Gaillard A., 2000).

The main device (mechanism) of the answer on the stress-factors activity in cell is activation of the peroxide oxidation of lipids (LPO) processes (Baraboi V.A., 1992). The most important system of the cell protection from oxidative destruction is an antioxidant system (Lushak V.I., 2007). Antioxidant protection represents multicomponent complex of different links and their systems, that provides connection or restoration of free radicals, breaking chain of free radical oxidation process (Vladimirov Y.A., 1972).

One of the important antioxidant cell system is glutathione system. This system contains from renovated glutathione (GSH) and some enzymes connected with it - glutathione peroxidase, glutathione reductase, glutathione transferase, and also NADP. GSH is a key metabolite in the glutathione system, and it has independent antioxidant GSH value inactivates  $\text{OH}^-$ ,  $\text{O}_2$ ,  $\text{H}_2\text{O}_2$ , lipid hydroperoxides, involved in the stabilization of membranes and protection of cell DNA (Menshikov E.B., 1993).

### Materials and methods

The main aim of our research was to define amount of glutathione, glutathione reductase and glutathione peroxidase activity during allotransplantation of embryo muscular tissues. During our research 2 types of surgery was carried out 2: the first – allotransplantation of embryo muscular tissue; second – without grafting surgery.

Experiments were carried out on the basis of the Biochemistry Department laboratory ONU I.I. Mechnikov. Allotransplantation was performed at white nonlinear rats - male, weighing 180-300 g. In this research all requirements of the European Convention on the protection of animals that used for experimental purposes - were complied.

Surgery was performed under sterile conditions. Operative (surgery) field was treated with Jodobac. Source of fetal tissue were taken from embryos of adult pregnant rat females with gestational 3.5-4 weeks. The abdominal muscle tissue was taken from embryo, and this tissue was stitched to the homologous tissues of adult rat. The same procedure was made with the femoral muscle tissue.

The surgery without replanting was performed for comparing the effect of changes in the number of indices of the surgical exposure. The tissue that was not involved to any surgical procedures was used as control.

Determination of reduced level of glutathione in the tissues was performed by E. Butler method, A. Dubonnet, B. Kelly (Goryachkovsky A.M., 2005). Statistical processing was performed using Student's t test (Rokitsky P.F., 1967). All mathematics calculations were performed using the computer program Excel.

### Results and discussion

From Table 1 the data shows that in determining the level of reduced glutathione at allotransplantation of embryo femoral muscle in the femoral muscle of adult animal, compared with controls, there is a significant increase of this indicator in all research terms. Allotransplantation of embryo abdominal muscle leads to a significant increase in all researched parameters during experience both at adult animal and at embryos.

Table 1. The level of reduced glutathione at allotransplantation of embryonic muscle tissue (mM/g of tissue)

Tissue Day	Femoral muscle tissue of adult animal	Femoral muscle tissue of the embryo	Abdominal muscle tissue of adult animal	Abdominal muscle tissue of the embryo
Control (without replanting)	0,075±0,019	0,674±0,046 **	0,055±0,001	0,860±0,111 **
1 <sup>st</sup> day	0,383±0,109 *	0,710±0,053 **	0,517±0,108 *	0,323±0,014 *
3 <sup>rd</sup> day	0,250±0,029 *	0,781±0,155 **	0,202±0,001 *	0,273±0,026 * **
7 day	0,217±0,017 *	0,559±0,205	0,183±0,017 *	0,255±0,005 * **

Note: \*  $t \geq 2,3$  - significantly relative to control

\*\*  $T \geq 2,3$  - significantly between embryonic and formed muscle tissue

If we compare the results between the formed and embryonic tissue it should be noted that in embryonic muscle tissue such as in femoral the level of reduced glutathione significantly exceed the level of the adult rat. After allotransplantation of embryo femoral muscle we found a significant increase in the amount of reduced glutathione at first and third day of experiments at embryonic tissue and at day 7 this figure decreased almost to the control value.

After allotransplantation of fetal abdominal muscle tissue a significant increasing of the researched (studied) parameter occurred in the embryo tissue on day 3<sup>rd</sup> and 7 of the research.

Table 2 shows data at the level of reduced glutathione during surgery without replanting, this data shows that in the femoral muscle tissue this figure significantly increased relative to the control on day 7 of the research.

Table 2. The level of reduced glutathione during surgery without replanting (mM/g of tissue)

Tissue day	Femoral muscle tissue of adult animal	Abdominal muscle tissue of adult animal
Control (without replanting)	0,075±0,019	0,055±0,001
1 <sup>st</sup> day	0,033±0,003	0,023±0,007 *
3 <sup>rd</sup> day	0,055±0,029	0,037±0,007 *
7 day	0,201±0,002 *	0,220±0,015 *

Note: \*  $t \geq 2,3$  - significantly relative to control

At rat abdominal muscle during surgery without replanting at 1<sup>st</sup> and 3<sup>rd</sup> days of the experiment was discovered a significant decrease in the level of the studied parameters and on day 7 increasing relative to the control.

In this case, our obtained data shows that allotransplantation of embryonic muscle leads to an increasing of renovated glutathione at 7 day of experiment at femoral and abdominal muscle male. At day 7 of experiment during surgery without replanting the level of reduced glutathione increased in femoral and abdominal muscle.

During next series of experiments we studied the allotransplantation effect on the glutathione peroxidase activity at the embryo muscle tissue and adult animals (Table 3)

The data from Table 3 shows that allotransplantation of femoral muscle compared with control, leads to increasing of this figure at day 7 of the research in all studied tissues, except the femoral muscle of the adult rat.

Table 3. Activity of glutathione peroxidase at allotransplantation of embryonic muscle (c.u. / min. /mg protein)

Tissue Day	Femoral muscle tissue of adult animal	Femoral muscle tissue of the embryo	Abdominal muscle tissue of adult animal	Abdominal muscle tissue of the embryo
Control (without replanting)	0,10±0,04	0,03±0,004 **	0,02±0,003	0,02±0,004
1 <sup>st</sup> day	0,08±0,01	0,02±0,003 **	0,20±0,01 *	0,11±0,02 * **
3 <sup>rd</sup> day	0,12±0,01	0,04±0,01 **	0,14±0,01 *	0,10±0,01 * **
7 day	0,16±0,03	0,09±0,01*	0,26±0,04 *	0,18±0,03 *

Note: \*  $t \geq 2,3$  - significantly relative to control

\*\*  $T \geq 2,3$  - significantly between embryonic and formed muscle tissue

If we compare the index of femoral muscular tissue of the adult rat and embryo, it can be noted that in femoral muscular tissue glutathione peroxidase activity in embryonic femoral almost 3 times less than in adult tissue. After allotransplantation at 1<sup>st</sup> -3<sup>rd</sup> day studied parameters at embryonic muscular tissue of the embryo significantly reduced relative to the corresponding figure of the adult rat, but up to day 7 of the experiment glutathione content almost reached the rate of femoral muscle male. In the abdominal muscle the studied

figure is almost the same, as in the adult animal tissue and tissue of the embryo. After allotransplantation this index was increased in embryonic tissues, but was significantly lower than in the abdominal muscle of adult animal at 1<sup>st</sup> -3<sup>rd</sup> day of experiment.

Table 4 shows that surgery without replanting at the femoral muscle on the first day after surgery at 3 times exceeds the control value, but at day 3<sup>rd</sup> -7 of experiment, significant changes wasn't occurred.

Table 4. Activity of glutathione peroxidase during surgery (operation) without replanting (c.u./min/mg protein)

Tissue Day	Femoral muscle tissue of adult animal	Abdominal muscle tissue of adult animal
Control (without replanting)	0,10±0,04	0,02±0,003
1 <sup>st</sup> day	0,31±0,04*	0,67±0,03 *
3 <sup>rd</sup> day	0,17±0,02	0,36±0,05 *
7 day	0,13±0,01	0,28±0,01 *

Note: \*  $t \geq 2,3$  - significantly relative to control

At the abdominal muscle tissue during surgery without replanting was significant increasing of studied parameters, relative to control in all studied periods.

Table 5 shows the results of investigations of glutathione peroxidase activity at allotransplantation of embryonic muscle tissue, it should be noted a significant increasing in the studied parameters, relative to control at 1<sup>st</sup> -3<sup>rd</sup> day of experiment in femoral and abdominal muscle tissue of the embryo.

Table 5. Activity of glutathione peroxidase in allotransplantation of embryonic muscle (c.u./ min./mg protein)

Tissue Day	Femoral muscle tissue of adult animal	Femoral muscle tissue of the embryo	Abdominal muscle tissue of adult animal	Abdominal muscle tissue of the embryo
Control (without replanting)	0,05±0,004 **	0,01±0,001	0,07±0,005 **	0,02±0,003
1 <sup>st</sup> day	0,07±0,008 **	0,03±0,004*	0,10±0,009* **	0,05±0,008*
3 <sup>rd</sup> day	0,05±0,008 **	0,02±0,003*	0,05±0,007 *	0,05±0,002 *
7 day	0,04±0,006	0,02±0,007	0,07±0,010	0,05±0,014

Note: \*  $t \geq 2,3$  - significantly relative to control

\*\*  $T \geq 2,3$  - significantly between embryonic and formed muscle tissue

In the abdominal muscle male on the first day after the operation there was a significant increasing at glutathione peroxidase activity relative to controls at day 3<sup>rd</sup>, this figure was significantly decreased and at the day 7 again returned almost to the control value.

Investigating the glutathione peroxidase activity during surgery without replanting (Table 6), we noticed a significant increasing of this index, relative to control on the first day of the research, both the femoral and abdominal muscles of male.

Table 6. Activity of glutathione peroxidase during surgery without replanting (c.u./min./mg protein)

Тканини Доба	Femoral muscle tissue of adult animal	Abdominal muscle tissue of adult animal
Control (without replanting)	0,05±0,004	0,07±0,005
1 <sup>st</sup> day	0,11±0,015*	0,14±0,015 *
3 <sup>rd</sup> day	0,05±0,008	0,05±0,010
7 day	0,05±0,005	0,02±0,005 *

Note: \*  $t \geq 2,3$  - significantly relative to control

At day 7 of research, the activity of glutathione peroxidase during surgery without replanting it was observed a significant decreasing of this index relative to control at the abdominal muscular tissue of male.

## Conclusion

So, our obtained data indicate that, allotransplantation of embryonic muscle leads to an increasing of renovated glutathione at day 7 of researching at femoral and abdominal muscle male, also it leads to increasing of glutathione reductase activity in all tissues studied at day 7 of the experiment, except for femoral muscle tissue of the adult rat.

At day 7 of research during surgery without replanting, renovated glutathione increased in femoral and abdominal muscle tissue, but glutathione reductase activity increased only in the abdominal muscle, and glutathione peroxidase activity in the abdominal muscle tissue decreased.

In this case, it can be noted that at the femoral muscle and abdominal muscle of adult animal the level of reduced glutathione at allotransplantation of embryonic tissue and during surgery without replanting increases. Therefore, we can assume that these changes affect primarily surgery.

The activity of glutathione reductase at the abdominal muscle of rats increases as at allotransplantation in embryonic tissue, as during operation without replanting. The activity of glutathione peroxidase at allotransplantation unchanged, while the operation without replanting leads to decreasing of this index in the abdominal muscle of rats.

So, we found that *allotransplantation able to normalize only glutathione peroxidase at the abdominal muscle of rats.*

## Reference:

- Shumakov V.I., Onishchenko N.A., Krasheninnikov N.E. Bone marrow as a source of obtaining mesenchymal cells // West transplant. and synth. Org.- 2002. - №4.-S.3-6.
- Stankov D,S., Katunyan P,I,, Krasheninnikov N,E, Neyrotransplantation in Treatment of spinal cord injury // West, transplant and synth. Organs.-2003.-№1.-p.44-45.
- Bjorklund A., Kromer L.F., Stenevi V. Cholinergic reinnervation of the rat hippocampus by septal implants is stimylated by performant path lesion // Brain Kes.- 1998.-Vol.173. -p.57-64
- Gaillard A. Early commintment of emdindval brionic neocortical cells to develop area-spetific thalamic connections // Roder.- Cereb. Cortex.-2000.- Vol.10.- p.443-453.
- Baraboi V.A., Brehman I.I., Golotin V.G. Peroxidation and stress // L .: Science. Leningrad.- 1992-160 p.
- Lushak V.I. Free radical oxidation of proteins and its functional relation to the state of the organism // Biochemistry.-2007-T.72, edition.8.-p.995-1017.
- Vladimirov Y.A., Archakov A.I. Lipid peroxidation in biological membranes // M. Science, 1972-252 p.
- Menshikov E.B., Zenkov N.K. Antioxidants and inhibitors of radical oxidation processes// success of modern. Biol.-1993-T.113, №4- p.442-455.
- Goryachkovsky A.M. Clinical chemistry in the laboratory diagnostic // Moscow, 2005.- 616 p
- Rokitsky P.F. Biological statistic.- Minsk Hign school 1967.- 326 p.



# EXTRACTION AND CHARACTERIZATION OF FREE NON-POLAR LIPID FRACTION OF CHOCOLATE USING A RAPID ANALYTICAL PROCEDURE

*Daniele Naviglio*

Department of Chemical Sciences, University of Naples Federico II,  
Monte S. Angelo Complex, Naples, Italy

*Lydia Ferrara*

Department of Pharmacy, University of Naples Federico II, Naples, Italy

*Monica Gallo*

Department of Molecular Medicine and Medical Biotechnology,  
University of Naples Federico II, Naples, Italy

---

## Abstract

In this work has been developed a new analytical procedure to extract the non-polar component of the lipid fraction of the chocolate, in a simple, rapid and economical way and its subsequent analysis by using a gas chromatograph equipped with flame ionization detector (GC-FID). The interest to isolate the non-polar lipid fraction containing triglycerides, waxes, sterol esters and minor components, such as sterols and liposoluble vitamins from the polar fraction could be of three types: analytical, nutritional and commercial. In analytical scope, the quality parameters of the lipid component of chocolate concern the non-polar component. Moreover, the chemical-physical parameters such as the melting point, refractive index, color, etc. were relative to a mixture of fatty substances was not well defined. From the nutritional point of view, the non-polar lipid fraction is the one that gives the largest contribution to the calorific value of the chocolate and then the separation of the two fractions could be useful to better assess the total caloric intake. For economic reasons, not the least important was considering the possibility of fraudulent additions of polar lipid components to replace the non-polar component more valuable, this alteration was not detectable only by applying the official method. The results obtained by the proposed procedure, combined with those obtained with the official method allowed to obtain more complete information on the composition of the lipid component of chocolate. Consequently, the ultimate goal could be reported this information on the nutrition labels of chocolate, for greater product transparency and greater consumer protection.

---

**Keywords:** Chocolate, lipid fraction, polar fraction, non-polar fraction, GC method, FID detector

## Introduction

Chocolate is a food that can be used either as a finished product or as an ingredient in different types of sweets and ice cream. In the world, the countries that produce cocoa are distributed on three of the five continents such as Africa, Asia and America (Binam and others 2008; Lima and others 2011). The production of cocoa are all of the equatorial belt of the planet, given the climatic requirements of the plant and involving about 45 different countries, with a production of around 4 million and 250 thousand tons of cocoa (Wood and Lass. 2008 ). Its consumption is more and more increasing in industrialized countries due to its hedonistic character. Italy is the fifth largest country in Europe in the production and

consumption of chocolate (Turrini and others 2001; Fold N. 2001). The cocoa beans are compounds for the 50-57% from fat and these lipids are for the most part, saturated with a 35% stearic acid and 25% palmitic acid. Nevertheless, a good portion of lipids also comes by the acid oleic (35%) a monounsaturated fatty acid found mainly in olive oil and is known to have positive effects on the cardiovascular system. Moreover, its main fat, stearic acid, is absorbed in a very moderate body and in part (about 15%) is transformed in the liver in oleic acid. The dark chocolate is a food that does not influence the level of cholesterol in the blood (Hannum and Erdman 2000). In fact, despite its content of sugar, dark chocolate has in any case a relatively low glycemic index, half less than white bread and similar to that of orange juice. Conversely, the situation is different in the case of other types of chocolate (milk, with hazelnuts, almonds, etc.), in which a more or less important part of the content of lipids also comes from the fat of the milk or other ingredients. For this reason, the high content of lipids and sugars make the chocolate caloric food to be consumed in moderation. The interest about the beneficial effects of chocolate obviously does not come by its content in lipids and sugars, but rather by its abundance of polyphenols. In fact, 50 g of dark chocolate contain twice of polyphenols of a glass of red wine and the same amount of a cup of green tea infusion left in long. The main polyphenols in cocoa are the same as those found in large quantities in green tea (catechins) polymers formed by these molecules, proanthocyanidins, may constitute 12-48% by weight of cocoa beans. Because proanthocyanidins are powerful antioxidants, it is not surprising that cocoa possesses similar properties (Steinberg and others 2003; Kris-Etherton and Keen 2002; Taubert and others 2003). Indeed, calculations carried out so far indicate that chocolate, particularly dark chocolate, possesses antioxidant activity out of the ordinary: a cup of hot chocolate generates antioxidant activity equal to five times that of a cup of black tea three times that a cup of green tea and two to a glass of red wine. Consequently, this high content of polyphenols is proposed as the main responsible of the positive impact on the health of the chocolate and from the nutritional point of view are very interesting studies on the bioavailability of polyphenols (Gallo and others 2013). Moreover, polyphenols that have been shown to reduce the risk factors for diabetes type II and cardiovascular diseases, are recently suggested as complementary agents in the management of obesity through several mechanisms such as decreasing fat absorption and/or fat synthesis. In particular, in a recent work the dark chocolate, a high source of polyphenols, and flavanols in particular, has received attention for its possible role in modulating obesity because of its potential effect on fat and carbohydrate metabolism, as well as on satiety (Farhat and others, 2014).

On the other hand, the lipid component, although present in a minor amount compared to carbohydrates, is the component that gives the energy contribution greater average 300 Kcal against 200 Kcal of carbohydrates for every 100 grams of product (Afoakwa and others, 2007). The lipid component assumes an important role as regards the structure of chocolate giving the correct consistency and allowing processing in many different confectionery products. The official method allows to extract the total lipid component that can be subjected to subsequent characterization analysis of the fat, but turns out to be long and laborious (Adamson and others, 1999). In general, the analytical determinations regarding the genuineness of the fat, aimed at exploring the categories of compounds belonging to the free non-polar lipid component, which owns triglycerides, waxes, esters of sterols and minor components that are included in this fraction for their lipophilicity, such as sterols, carotenoids, liposoluble vitamins etc. The fat extracted by the official method is analyzed as such without any prior separation.

The nutritional label of chocolate reports the result as a percentage of fat obtained using the official method. In our opinion, this information is not complete if you do not discriminate between the polar and non-polar fraction. For nutritional purposes, the free and

non-polar lipid component of the fat in chocolate is the one that gives the largest energy contribution to the total fat and therefore it is desirable that the nutrition label of chocolate showing with more detail, not only the weight of the lipid content total, but also the distribution of the fat in its two main components. Finally, for commercial reasons, the differentiation between the two components could be useful to detect possible fraudulent additions fat of polar nature to replace the non-polar component most prized and expensive.

## Materials and Methods

### Reagents and equipment

All reagents were of analytical purity degree: trichloroacetic acid (Carlo Erba, Milan, Italy), n-hexane (Fluka, Buchs, Switzerland), n-pentane (Fluka, Buchs, Switzerland), 1-pentanol (Fluka, Buchs, Switzerland). Sodium ter-pentoxide (Sigma Aldrich)

The benchtop centrifuge was a PK 131 model (ALC International, Milan, Italy), the rotary evaporator was a R-210 (BUCHI, Italy), to bring dry was used the nitrogen cylinder. Chromatographic separation for triglyceride analysis was performed using a gas chromatograph Autosystem XL (Perkin Elmer, Norwalk, CT, USA) equipped with PSS injector and FID detector and connected to the data acquisition system Turbochrom version 4.1.

Chromatographic separation for fatty acids was performed using a gas chromatograph DANI 8521-a (DANI, Monza, Italy) equipped with a PTV injector and FID detector and connected with an integrator HP mod. 8890 A (Hewlett Packard, Palo Alto, CA, USA)

### Chromatographic conditions of triglyceride analysis

Capillary column: 65% phenyl methyl silicone stationary phase HT (TG), RTX 65-TG (Restek, Bellefonte, CA, USA), l = 30 m, id = 0.25 mm; ft 0.25  $\mu$ m

Programmed injector: 70 °C for 12 sec, increase of 999 °C/min up to 370 °C, hold for 5 min.

The temperature was programmed: 250 °C for 2 min., increase of 5 °C/min. up to 360 °C, hold for 5 min.

Detector temperature: 370°C. Flow rate: 1.5 mL/min. Split: 1:80

It was used the system reset of the drift (background) due to the temperature rise by calibrating with three acquisitions of the base line signal in order to allow an integration of the peaks of the triglycerides more simple.

Procedure: 50 mg of fat were weighed in a test tube and add 1 mL of n-hexane; stir until complete dissolution of the fat; inject 0.5 mL of solution into the gas chromatograph. Integrating triglycerides grouped by the total number of carbon atoms

### Fatty acids analysis

Capillary column: stationary phase 90% bis-cyanopropyl phenylsilicone FAME (Restek, Bellefonte, CA, USA), l = 50 m, id = 0.25 mm, ft = 0.25  $\mu$ m

Programmed injector: 50°C for 15 sec., Increase of 999°C/min. up to 270 °C for 3 min.

The temperature was programmed: 70°C for 2 min; increase 8°C/min. up to 250°C, hold for 3 min.

Detector temperature: 270°C. Flow rate 2 mL/min. Split: 1:80

Procedure: 50 mg of fat were weighed in a centrifuge tube, add 1 mL of n-pentane and stirring until complete dissolution of the fat, add 200 mL of 2 N sodium ter-pentoxide in pentanol and stir for two minutes, add 400 mL of 1 N hydrochloric acid and shake for thirty seconds; centrifuge at 2000 rpm for 1 minute; inject 0.5 mL of the upper organic phase.

## Samples

The chocolate samples were purchased in the local market and were known brands. The types of chocolate analyzed were: extra bitter chocolate, dark chocolate and milk chocolate.

## Quantitative analysis of non-polar lipid fraction of chocolate

Procedure: 10 grams of chocolate finely ground (C) were weighed into a 50 mL centrifuge tube; add 15 mL of trichloroacetic acid at 12% (w/v) and stir until the fluidization of the chocolate; add 10 mL of n-hexane and shake vigorously for 3 minutes and centrifuge at 8000 rpm for 5 minutes. Withdraw the supernatant (hexane phase) and transfer to a 50 mL separatory funnel and repeat the extraction with two other fractions of n-hexane and collect the separating funnel and wash the hexane fraction separated with two fractions of 10 mL of distilled water, transfer the hexane fraction in a volumetric flask and dry in rotary evaporator, remove the last traces of solvent under a stream of nitrogen. Weigh the sample to the technical balance by subtracting the tare to obtain the weight of the fat extracted (L).

The determination of lipids was carried out using a simple formula:

$$\text{Lipids (\%)} = L * 100/C$$

## Results and Discussion

### Precision and accuracy of the method proposed

The proposed method was first evaluated for reproducibility: the analysis of samples of the three types of chocolate was repeated 5 times and the results obtained are reported in Table 1. The reproducibility of the proposed method was excellent for the three types of chocolate analyzed and the standard deviation from the average result was a maximum of 1.2%.

Table 1. Reproducibility of the proposed method

Sample	Extra chocolate	Dark chocolate	Milk chocolate
1	28.4%	24.0%	27.3%
2	28.2%	23.8%	27.4%
3	28.1%	24.1%	27.1%
4	28.3%	24.4%	27.4%
5	28.0%	24.2%	27.0%
Average	28.2%	24.1%	27.2%
Waste max %	0.7	1.2	0.7

In order to assess the completeness of the recovery of fat, three portions of chocolate from the three types of chocolate above were extracted respectively with two, three and four fractions of n-hexane. In Table 2 are reported the results of recoveries for the three types of chocolate in function of fractions of hexane added. The results show that the recovery can be considered quantity already from the extraction carried out with three fractions of hexane. While with two extractions the fat loss is about 5%, the difference between three and four fractions allows to recover about 1% remaining making complete the extraction.

Table 2. Fat recovery in function of the number of washings with n-hexane

Fraction number	Extra chocolate	Dark chocolate	Milk chocolate
2	95.4%	96.3%	94.1%
3	99.2%	99.4%	99.1%
4	99.9%	100.1%	99.8%

To evaluate the accuracy of the proposed method the three chocolate samples were subjected to analysis of fat by the official method (Adamson 1999). Analysis were repeated three times and the average result was compared with the average result obtained for the reproducibility tests reported in Table 1. Table 3 shows the percentage difference of three

samples compared to the value obtained with the official method, in perfect agreement with the quantity of fatty substance reported on the label for each sample.

Table 3. Accuracy of the proposed method

Sample	Proposed method	Official method	Label	Waste (%)
Extra chocolate	$28.2 \pm 0.2$	$31.3 \pm 0.2$	31.3	9.9
Dark chocolate	$24.1 \pm 0.3$	$27.0 \pm 0.2$	27.0	10.7
Milk chocolate	$27.2 \pm 0.2$	$29.5 \pm 0.2$	29.5	7.8

The difference between the quantity of fat obtained with the proposed method compared to the official method represents the polar fraction of free lipids, such as phospholipids and glycolipids. To obtain a confirmation of what was assumed, the fat recovered by extraction with the official method was subjected to fractionation on TLC using a preparative silica gel plate and eluting with hexane and ethyl ether 4:1 (v/v) (Fuchs and others 2011). The bands corresponding to the polar lipid fraction was recovered, purified and analyzed for each type of chocolate. The results were corresponding to the difference percentage shown in Table 3 within the limits of experimental errors.

### Analysis of free non-polar lipid fraction

The fat extracted with the proposed method was subjected to qualitative analysis of triglycerides and fatty acids. Figure 1 shows the gas chromatograms of comparison between triglycerides obtained for the fat extracted from dark chocolate with the official method and that obtained by using the proposed method.

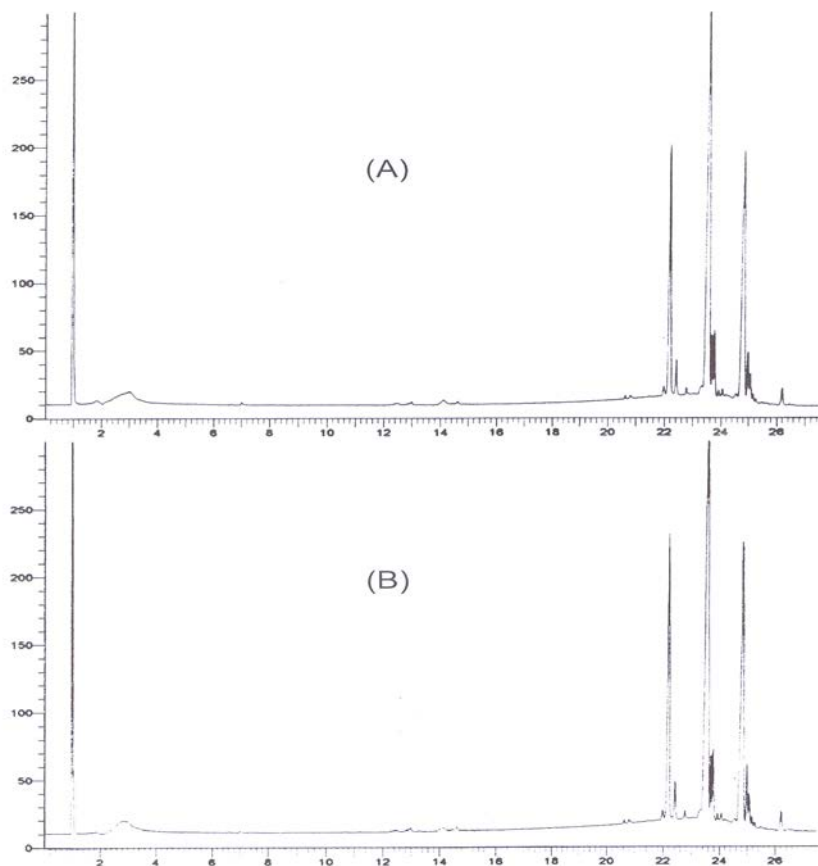


Figure 1. Gas chromatograms of triglycerides obtained by analyzing the fat separated from the same sample of dark chocolate with the official method (A) and with the proposed method (B).

Table 4. Distribution of triglycerides grouped by the same number of carbon atoms in the fat extracted with the official method (A) and in the fat extracted with the proposed method (B)

(A)							
Peak #	Time [min]	Area [uV*sec]	Height [uV]	Area [%]	Norm. Area [%]	BL	Area/Height [sec]
1	6.403	980.70	230.10	0.02	0.00	*BB	4.2621
2	6.608	3571.49	729.75	0.07	0.00	*BB	4.8941
3	7.001	9846.20	2173.04	0.19	0.00	*BB	4.5311
4	12.988	49802.78	2455.80	0.95	0.00	*BB	20.2797
5	14.116	75278.09	3560.24	1.43	0.00	*BB	21.1441
6	20.620	7676.81	2736.61	0.15	0.00	*BB	2.8052
7	20.795	10618.90	2673.08	0.20	0.00	*BB	3.9725
8	22.211	1065016.05	191885.29	20.28	0.00	*BB	5.5503
9	23.583	2461684.50	309441.82	46.87	0.00	*BB	7.9552
10	24.835	1505787.71	189426.62	28.67	0.00	*BB	7.9492
11	26.187	62030.37	12672.39	1.18	0.00	*BB	4.8949
				5252293.60	717984.74	100.00	0.00
(B)							
Peak #	Time [min]	Area [uV*sec]	Height [uV]	Area [%]	Norm. Area [%]	BL	Area/Height [sec]
1	6.671	1495.00	314.97	0.02	0.00	*BB	4.7465
2	7.061	3279.50	697.55	0.05	0.00	*BB	4.7015
3	10.702	3841.50	737.97	0.06	0.00	*BB	5.2055
4	11.234	3952.00	513.65	0.06	0.00	*BB	7.6940
5	13.022	68971.15	3529.88	0.99	0.00	*BB	19.5393
6	14.159	103617.80	4117.39	1.49	0.00	*BB	25.1659
7	20.654	26868.00	3977.43	0.39	0.00	*BB	6.7551
8	22.264	1415505.00	223430.18	20.37	0.00	*BB	6.3353
9	23.628	3252221.00	344247.78	46.79	0.00	*BB	9.4473
10	24.893	1986755.00	236970.95	28.59	0.00	*BB	8.3840
11	26.246	83742.50	15959.55	1.20	0.00	*BB	5.2472
				6950248.45	834497.30	100.00	0.00

In Table 4 are reported the results of the integrations of triglycerides grouped by number of total carbon atoms. As you can see the percentages of clusters obtained for the triglyceride fat derived according to the official method are the same as those obtained for the fat extracted according to the procedure proposed within the limits of experimental error

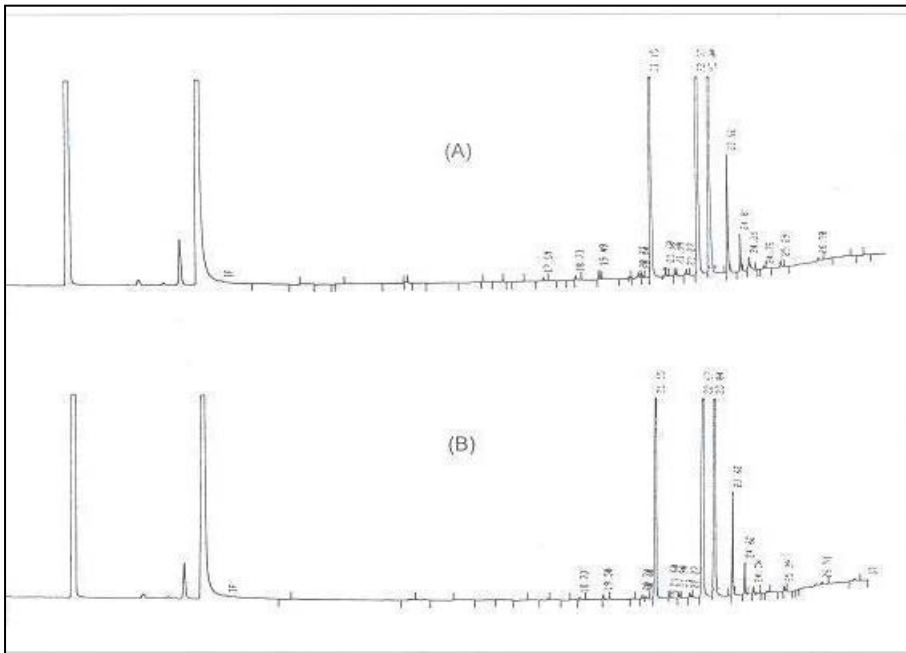


Figure 2. Gas chromatograms pentyl esters of fatty acids obtained by analyzing the fat separated from the same sample of dark chocolate with the official method (A) and with the proposed method (B).

Figure 2 shows the gas chromatograms of pentylic esters of fatty acids obtained as reported in a previous work (Nota and others 1998). The replacement of the alcohol with a longer chain as reagent for the transesterification has no contraindication in the analysis itself; gas chromatographic conditions were identical and the only variable modified was the increase of 20°C in the room both in the initial isotherm that in the final one and consequently also the injector was increased to 20 °C.

In Table 5 are reported the results of the integrations of the fatty acids of the free non-polar lipid fraction of dark chocolate extracted with the official method and with the method proposed. The results are in agreement with each other. The same comparison was also made for the extra dark chocolate and milk chocolate; also for these other two matrices the gas chromatographic analysis of the fat fraction extracted with the two methods leads to the same results, both in terms of triglycerides that of fatty acids. The results obtained from the qualitative analysis of the free non-polar lipid component of the fat of chocolate using the official method and the proposed method indicate that the fat is not in any way compromised by contact with trichloroacetic acid in the proposed procedure

Table 5 . Distribution of fatty acids in the fat of dark chocolate extract with the official method and the proposed method

Fatty acids	Proposed method		Official method	
	Retention time	Area %	Retention time	Area %
Palmitic acid	21.15	26.3	21.15	26.0
Stearic acid	22.67	34.3	22.67	35.8
Oleic acid	23.04	34.2	23.04	33.7
Linoleic acid	23.62	3.0	23.62	3.2
Linolenic acid	24.01	1.0	24.01	1.0
Other		1.2		0.3

### Effect of trichloroacetic acid in separation of free non-polar lipid fraction

The trichloroacetic acid possesses a complexing ability and dehydrating against polar molecules. It combines the characteristic acidity of an organic complexing action due to the trichloroacetate ion size.

The removal of water molecules from the medium allowed to polar substances to join and separate in the solid form. The importance of this action is highlighted by the fact that if the trichloroacetic acid is replaced by trifluoroacetic acid, the latter did not lead to the same results. Additionally, the use of a mineral acid showed that chocolate cold was not immediately fluidized and consequently the addition of n-hexane did not elicit the desired effect of the separation of the free fraction non-polar. Conversely, the addition of trichloroacetic acid to the chocolate had an immediate effect fluidizing with release of fat; in fact, the centrifugation of chocolate dissolved in n-hexane led to the separation of fat as a separate phase in the supernatant; therefore, the addition of hexane was used to help the quantitative recovery of fat as well as to wash the solid matrix.

### Conclusion

Currently, the extraction of total fat for the analysis of the lipid component of chocolate is made with the official method ( Adamson 1999). This method is used by manufacturers of chocolate to determine the lipid content of labeling. It is possible to subject the extracted lipid fraction to fractionation on TLC to differentiate the non-polar lipid component free from that polar, however, this procedure is long and laborious. Using the method proposed in this work it was possible to obtain not only the non-polar lipid fraction separated from the rest of the matrix, but also the free fraction polar for difference with the value obtained with the official method. In this way, this procedure allowed to obtain information on the content of fat in the chocolate more complete and, also, could be used by manufacturers in order to appear on labeling the fat content of the chocolate in two separate

components. Consequently, the quantification of the non-polar lipid fraction of the chocolate was important from the standpoint of economic and nutritional, in addition, the separation upstream from the matrix of chocolate resulted also important from the analytical point of view.

### References:

- Adamson GE, Lazarus SA, Mitchell AE, Prior RL, Cao G, Jacobs PH, Kremers BG, Hammerstone JF, Rucker RB, Ritter KA, Schmitz HH. 1999. HPLC method for the quantification of procyanidins in cocoa and chocolate samples and correlation to total antioxidant capacity. *J. Agric. Food Chem.*, 47, 4184-4188
- Afoakwa EO, Paterson A, Fowler M. 2007. Factors influencing rheological and textural qualities in chocolate – a review. *Trends in Food Science & Technology* 18(6): 290-298.
- Binam JN, Gockowski J, Nkamleu GB. 2008. Technical efficiency and productivity potential of cocoa farmers in west african countries. *The Developing Economies* 46(3):242-263.
- Farhat G, Drummond S, Fyfe L, Al-Dujaili EA. 2014. Dark Chocolate: An Obesity Paradox or a Culprit for Weight Gain? *Phytotherapy Research* 28(6):791-797.
- Fold N. 2001. Restructuring of the European chocolate industry and its impact on cocoa production in West Africa. *Journal of Economic Geography* 1:405-420.
- Fuchs B, Süß R, Teuber K, Eibisch M, Schiller J. Lipid analysis by thin-layer chromatography-A review of the current state. *Journal of Chromatography A* 2011, 1218(19), 2754-2774.
- Gallo M, Vinci G, Graziani G, De Simone C, Ferranti P 2013 The interaction of cocoa polyphenols with milk proteins. *Food Research International* 54(1):406-415.
- Hannum SM, Erdman Jr JW. 2000. Emerging Health Benefits from Cocoa and Chocolate. *Journal of Medicinal Food* 3(2): 73-75.
- Kris-Etherton PM, Keen CL. 2002. Evidence that the antioxidant flavonoids in tea and cocoa are beneficial for cardiovascular health. *Curr Opin Lipidol* 13:41-49.
- Lima LJR, Almeida MH, Nout MJR, Zwietering MH. 2011. *Theobroma cacao* L., “the food of the gods”: quality determinants of commercial cocoa beans, with particular reference to the impact of the fermentation. *Critical Reviews in Food Science and Nutrition* 51(8):731-761.
- Nota G, Naviglio D, Romano R, Sabia V, Spagna Musso S. 1998. Evaluation and improvement of transesterification methods of triglycerides. *Anal. Lett.* 31(14): 2499-2512.
- Steinberg FM, Bearden MM, Keen CL. 2003. Cocoa and chocolate flavonoids: implications for cardiovascular health. *J Am Diet Assoc.* 103:215-223.
- Taubert D, Berkels R, Roesen R, Klaus W. 2003. Chocolate and blood pressure in elderly individuals with isolated systolic hypertension. *J Am Med Assoc* 290:1029-1030.
- Turrini A, Saba A, Perrone D, Cialfa E, D'Amicis A. 2001. Original Communication Food consumption patterns in Italy: the INN-CA Study 1994-1996. *European Journal of Clinical Nutrition* 55:571-588.
- Wood GAR, Lass RA. 2008. *Cocoa*. Tropical agriculture series. Editors: John Wiley & Sons.



## NEW APPROACHES TO SOCIAL POLICY IN GEORGIA

*Otar Gerzmava, Prof.*

Grigol Robakidze University, Tbilisi, Georgia

*Levan Gorgiladze, PhD Student*

Grigol Robakidze University, Tbilisi, Georgia

---

### Abstract

The majority of developed countries and several developing countries have created, and are regularly updating, their national health policies. This is especially important for social and economic development. In Georgia, as in other developing countries, the main objective of the health reform process is a comprehensive policy. It is based on the main priorities of the nation's health problems, and targets specific areas to be addressed and corrected over several years.

---

**Keywords:** Health policy, health reform, Georgia, socioeconomic transition, market economy

### Introduction

#### Demographics and Geography

The country of Georgia is located on the ancient Silk Road between Europe and Asia, between 40' and 47' longitude east and 41' and 44' latitude north, to the south of the Caucasus Mountains and along the southern slopes. The Georgian Republic occupies an area of 69,700 sq km (about 26,900 miles) in the middle of the Caucasian region. Georgia is surrounded by the high mountain ranges of Caucasus along its northern border with Russia, and Turkish highlands along its southern borders, Black Sea to the west and high plateaus to the east, along the border with Azerbaijan (Verulava and Kalandadze 2001).

Georgia's population is approximately 4.4 million and a gross national income (GNI) per capita of \$4,770. The country is strategically located between Europe and Asia and is rich in natural resources. In 2008, it was ranked 93<sup>rd</sup> out of 179 countries in the Human Development Index (HDI). According to World Bank statistics, Georgia is a lower middle-income country (Hauschild and Berkhout 2009).

Georgia is a democratic state with a republican form of government, under the rule of the President of Georgia, the Parliament of Georgia, and the courts of Georgia. The President of Georgia is the head of the state. Georgia is constitutionally composed of three branches of government: Executive, Judiciary and Legislative, all have separate powers from each other. The Parliament of Georgia is the country's highest representative body, executing the legislative power (Verulava and Kalandadze 2001).

#### History of Healthcare in Georgia

In 1921, Georgia was incorporated into the Union of Soviet Socialist Republics (USSR), where it remained for 70 years. From 1921 to 1991, the Georgian health system was part of the Soviet system. The "Basic Law on Health in the USSR and Soviet Republics," also known as the Semashko model, provided the framework for each Soviet republic and was characterized by almost complete public ownership of healthcare services (Gamkrelidze et al.2002).

Planning, organization, control and allocation of nearly all resources were undertaken in Moscow, while few responsibilities were delegated to the Georgian health authorities. Healthcare was meant to be free at the point of delivery, but illegal out-of-pocket payments to health professionals were also common. Hospitals dominated the delivery system with high bed numbers and very large numbers of medical personnel (Gamkrelidze et al.2002).

The physical condition of facilities severely deteriorated, as did medical technology and equipment. That is why, since independence in 1991, the nation has had to reestablish itself and reform many of its governmental structures, including its health care system. Georgia has made a significant effort to adapt health policy and the health system to the new environment. A mandatory social health insurance was introduced after independence, but was abolished after the 2003-2004 Rose Revolution, which brought about fundamental change in the role of government in providing, financing, and managing public services like healthcare (Chanturidze et al. 2009). At present, healthcare and health insurance are privatized (Gamkrelidze et al.2002).

### **Democracy and a Market Economy**

Georgia is in a period of socioeconomic transition from a managed economy to the principles of a market economy. In most countries, in such transition, the health indicators show a dramatic deterioration. According to the morbidity statistics, cardiovascular diseases, malignant neoplasms, and accidents are the primary health problems in Georgia, as in most post-socialist countries. At the same time, infectious diseases are widespread (WHO 2009).

Transition from the socialist system to a market economy was the cause of an economic recession and decline in real gross domestic product (GDP) throughout the Former Soviet Union (FSU) countries. Changes in the method of tax collection and a reduction in the size of the state sector have further diminished the tax base, which has resulted in significant reductions in public revenues (Georgia Article IV Consultation 2013).

In 1991, Georgia emerged as an independent former Soviet state and it experienced economic collapse and civil war. During this rapid transition from a centralized, planned economy to a free market one, economic security and wealth quickly gave way to poverty, unemployment and unrest. Almost instantly, Georgia lost any budget assistance and its preferential access to the former Soviet Union markets, and the economy instantaneously collapsed.

Recently, Georgia has moved away from a state funded and input based financing model to a purchaser-provider split, incorporating a greater use of market mechanisms. Initially, the majority of health care expenses were to be funded through payroll taxes complemented by general and municipal budgets. However, due to the high unemployment rate, a large and growing informal sector, poor fiscal performance and low level of budget revenues undermined government intentions in this respect (Gotsadze et al. 2005c).

The period of 1992-1996 showed a sharp decline in Georgia's economy which resulted in the deepest economic dive among all FSU counties. In 1995, in response to the economic crisis that brought public expenditures for health to a level of less than US\$1 per capita, the government launched an ambitious health sector reform program and introduced a new model for health care financing, combining social insurance, tax revenues and out of pocket payments. Health services are offered through a publicly financed primary care network and the state also finances "essential" hospital care (Jorbenadze et al. 1999). The constitutional guarantee to free health care was removed in 1995, and user fees were allowed formally either to co-finance services in the publicly financed benefit package or to pay for services not covered by public programs (Gotsadze et al. 2005a).

The main principles of health care reform since 2006 have been to make the transition towards complete capitalization of the health sector: private provision, private purchasing,

liberal regulation and minimum supervision. The basis for these decisions was rooted in the country's economic policy, which was to ensure economic growth based on liberalization and private sector development. Mandatory social health insurance, which was introduced in the 1990s, was abolished and private health insurance has been promoted as its replacement. The population living below the poverty line is issued health vouchers for the private insurers of their choice and the state then contracts with the insurer, purchasing a cover package with public funds. The population living above the poverty line is expected to purchase its own cover voluntarily or pay out of pocket for services. With a view to boosting pre-payment for this population, the government developed some limited private insurance packages which were subsidized by the state and promoted as affordable cover (Chanturidze et al. 2009).

Political and economic relations with Moscow have been tense since Georgia gained independence in 1991. Russia's support for separatists in Abkhazia and South Ossetia is a key factor. In August of 2008, these tensions flared up into full-scale conflict involving Georgian, Russian, and South Ossetian soldiers, forcing thousands of people to flee their homes (Hauschild and Berkhout 2009).

In 2007, the government introduced a rapid and extensive program of privatization of public services, including health care. The rationale was that the free market will solve existing problems, including inefficiencies in cost, access, availability, equitable distribution and quality of care. This newly established universal healthcare system will cover around 2.5 million previously uninsured individuals and will cost around 1 percent of GDP. Since March of 2013, emergency health care has been made free of charge for in-patient and out-patient services. From July onwards, individuals previously not covered by state insurance programs benefited from non-emergency services without having to contribute to the insurance scheme. A newly created Social Service Agency negotiates rates and procedures and reimburses medical providers. Most medical services have substantial co-pay which could leave a market for existing private insurance companies. Under the basic scheme, most drugs are not covered, but could be added in the future together with additional medical procedures. From May of 2014 onwards, the Social Service Agency will cover individuals previously covered by state programs whose insurance was operated by private companies. While substantial savings are expected from centralized purchases and negotiations, the reform plans are estimated to add 1 percent of GDP per year to existing health costs, making health the largest reform area (Georgia Article IV Consultation 2013).

The Ministry of Labour, Health and Social Affairs (MoLHSA) remains the key strategic health decision-maker. The Georgian National Health Care Strategy for 2011-2015 was launched in November of 2011. As the current Government has chosen a different approach of moving towards UHC, there has been a plan to elaborate a new National Health Sector Development Strategy and Operational Plan in the coming months (Country Cooperation Strategy 2013).

### **Healthcare Reform**

Healthcare reform is understood as planned changes toward the organization, financing, provision, and regulation of public/private mix for more accessible, efficient, cost effective, fair and quality healthcare goods and services. Clarity and certainty are key features for the success of this endeavor, and State policies should be unambiguous and explicit. Because the issues implicated are complex and many vested interests are involved, conceptual and practical frameworks aiming at renovated, more efficient and effective healthcare will guide the process of reform.

The reform of the Georgian health system was developed during the period from 2006 until today. It was an integral part of the reform process and proceeded from its goals and strategies including development of a democratic society and establishment of corresponding

relations in the shortest period of time with minimal losses. These frameworks should consider the roles of the State at all levels, central, regional, and local (Dzhakeli et al. 2009).

It is hard to find a country where the government is not carrying out health reforms. The continuing increase in health costs due to the use of high technology has resulted in the failure of governments to fulfill their responsibilities in health. This is due to the fact that the governments try to balance between social responsibility and equal access to health services on one hand, and simultaneously try to decrease health expenditures. In this respect, Georgia is no exception. According to the WHO Global Health for All policy, disease prevention, treatment, rehabilitation and care of people with disabilities are elements of a constantly developing strategy. The goal of improved health is to provide all citizens with protection of their right to be healthy, live in a healthy environment, and avoid disease and injury (WHO 2009).

Healthcare reforms are complex and multidimensional endeavors. Partial reforms have limited impact or influence on the whole and may create systemic distortions when not followed by simultaneous changes in reforming delivery and management, and the institutional and legal foundations of the healthcare system (Fuenzalida-Puelma 2002).

Concurrent changes should include amendments in the rule of law, governance, transparency and accountability; in organizational and institutional development; in corporate development; and in the availability and quality of credit. Partial financial reforms often result in deteriorating public healthcare, in the emergence of largely unregulated private healthcare, and on increasing formal and informal out-of-pocket payments (Belli et al. 2004).

While government health spending as a share of GDP is low in Georgia, total health spending is quite high. The agreed plan of health care reform could help reduce Georgia's very high private health costs and improve health outcomes. The proposed reforms would still leave sizeable co-payments for drugs and the future role for private insurers remains unclear. The speed of reform could create implementation risks, in particular at the outset, and the Georgia governments is working closely with the World Bank and WHO to minimize their risks. The government expected the Social Service Agency would achieve major cost savings through centralized procedures and better control of medical services (Georgia Article IV Consultation 2013).

## **Policy**

Health policy is an agreement on the declared approaches and strategies between the State and different political forces concerning the basic directions of maintaining and strengthening the state of health of the nation for the next 10-15 years. As a rule, mechanisms of health reform are key factors for the implementation of changes in public health, and consequently in health policy. Thus, a clearly and precisely developed national health policy becomes the basic driving force for future reforms (WHO 2009).

The problem with access to needed services and inadequate public financing is a problem well recognized by the previous government and attempts have been made to resolve these critical issue. Three major policy documents were developed during 1999-2003 which outlined planned improvements in state health policies. These major documents are Georgian National Health Policy (NHP), Strategic Health Plan for Georgia 2000-2009 (SHP) and Economic Development and Poverty Reduction Program of Georgia (EDPRP). All of these documents are outdated, but are continuously being revised and used by the current Georgian government as a starting point for future policy development (Gotsadze et al. 2005b).

As a democratic society develops in Georgia, the State has declared a socially oriented reform policy. It is necessary to understand the utmost importance of the role of health. The formulation of a national health policy oriented on health maintenance and accessibility of health services is essential (Garey and Lorber 2008).

## Priorities

At the start of the health system reform, priorities were determined by the financial abilities of the country. As a result of the reorientation, institutional arrangements of the system have been completed. A considerable part of medical care is now based on insurance principles. Thus, the determination of priorities of national health has become one of the most important tasks of the national health policy program and insurance programs.

Determination of priorities means that financial, material and human resources must be directed to selected spheres, and the participation and responsibility of different sectors in solving problems related to the health of the population must be considered (Djibuti et al. 2008).

Selection of priorities and development of strategies in Georgia are based on the following fundamental values and principles:

- Health as the main goal of social development;
- Equity and solidarity in health issues;
- Development of person-oriented health;
- Scientific foundation, responsiveness and accounts as ethical bases of measures that should be developed and implemented in health sector; and
- Sustainability of health strategies.

Determination of priorities is one of the most important conditions for implementation of the national health policy. The criteria for selection of priorities are:

- Main causes of morbidity and mortality;
- Maximum coverage of population with priorities; and
- Economic impact of priorities.

Selection of priorities is based upon the following fundamental values and principles:

- Health as the main aim of social development;
- Human oriented health system; and
- Using scientific data, responsiveness and an ethical basis of health system accountability.

The main priorities for maintaining and improving the health of the population of Georgia until 2020 are as follows: improvement of maternal and child health; reduction for morbidity and mortality caused by cardiovascular diseases; improvement of prevention; detection and treatment of ontological diseases; reduction of traumatism; reduction of communicable and socially dangerous diseases; mental health; establishment of healthy lifestyle; and provision of an environment safe for human health (Kvizhinadze and Gerzmava 2013).

## Caucasus Region

The Caucasus is a region at the border of Europe and Asia, situated between the Black and the Caspian Seas. It is home to the Caucasus Mountains which contain Europe's highest mountain, Mount Elbrus. Politically, the Caucasus region is separated between northern and southern parts. The southern parts consist of independent sovereign states. The northern parts are under the jurisdiction of Russia.

Health care in the south Caucasus has suffered as a result of the socioeconomic decline that followed the collapse of the Soviet Union and the ensuing — still unresolved — conflicts between Armenia and Azerbaijan over Nagorno-Kharabakh and between Georgia and its breakaway republics Abkhazia and South Ossetia. As in most parts of the former Soviet Union, these places have increasing cardiovascular mortality, a high burden of mental illness, and spreading infectious diseases such as tuberculosis, sexually transmitted infections, and HIV (Schoen-Angerer 2004).

## Future Directions

Varying aspects of development such as economic development, social development or health development are often considered separately, but they are all parts of the same whole. Economic growth does not always mean progress, while health improvement, as a necessary aspect of human development, always implies social progress. Health is not only considered as medical care. The most important indicators for the improvement of the health of the nation are the establishment of a safe environment, provision of safe food and drinking water, carrying out of reasonable demographic policy, the promotion of a healthy lifestyle, and the elimination of social stress factors (Gotsadze et al. 2010).

The level of the health system reflects the level of socioeconomic development of the country. Improving the health status of the nation is the process of improving the quality of human life and determination of its global goals and values. This is the focus of the entire nation, and is why state goals should:

- Proceed from the cultural heritage of the country;
- Be of importance for the major part of the population;
- Correspond to the level of economic development of the country;
- Reflect the ethnic specificity and experience of the nation;
- Be free from ideological dogmas;
- Reflect the direction of international socioeconomic development; and
- Be scientifically justified.

The new health model must be based on the principles of justice, accessibility and equity. It should concentrate not only on the reduction of morbidity, disability, and mortality, but also on the social, physical and mental welfare of individuals, families and the community as a whole. Right from the beginning, four groups of objectives have been selected in Georgia (Gerzmava et al. 2011):

- Lifestyle and health;
- Risk factors affecting the health of the population;
- Reformation of health systems; and
- Selection of political, administrative and technological forces, needed to accomplish change.

To develop an effective and quality health system in the near future, it is necessary to take the following four basic statements as a foundation to new efforts (Abdushelishvili et al. 2005):

- Outcome-oriented treatment;
- Population-oriented primary health care system;
- More effective and flexible hospital care; and
- Better quality and effectiveness of health.

## Conclusion

It is a paradox of modern times that healthcare systems, created during a period of relative prosperity in the developed world, are facing financial ruin. Compared with the past, the early 21<sup>st</sup> century is a time of scientific advancement, economic progress, and social stability in Georgia. Yet the financial foundations of the healthcare system are deteriorating, and could crumble unless policies are changed quickly. The basic problem is the spiraling cost of healthcare which is expected to continue. The Georgian government and other players are trying to slow that upward spiral of cost and increasing access to care.

A key question is how healthcare systems can be redesigned without damaging the foundation upon which they were originally built. Underpinned by the principle of solidarity the healthcare system is paid for by the population at large, with the risks of medical

expenditure essentially pooled. Most Georgian citizens agree with this shared-risk principle and would resist any efforts to change it and thereby remove the promise of universal healthcare coverage. However, the financial contributions required for healthcare have risen steadily to the point where local and state governments realize that further increases are no longer possible or politically acceptable. Yet the rise in the cost of healthcare systems continues to outstrip economic growth and shows no sign of slowing down.

### References:

- Abdushelishvili NG., Gerzmava NO., Kitovani DV. (2005). Complex study of the problem on accessibility to high quality medical care in the population of Georgia. *Georgian Med News*. 127:91-5.
- Belli P., Gotsadze G., Shahriari H. (2004). Out-of-pocket and informal payments in health sector: evidence from Georgia. *Health Policy*. 70/1:109-23.
- Chanturidze T., Ugulava T., Durán A., Ensor T., Richardson E. (2009). Georgia Health System Review. *Health Systems in Transition*. 11/8: xix.
- Country Cooperation Strategy: At a Glance: Georgia. (2013). World Health Organization. [http://www.who.int/countryfocus/cooperation\\_strategy/ccsbrief\\_geo\\_en.pdf](http://www.who.int/countryfocus/cooperation_strategy/ccsbrief_geo_en.pdf)
- Djibuti M., Gotsadze G., Mataradze G., Menabde G. (2008) Human resources for health challenges of public health system reform in Georgia. *Hum Resour Health*. 6/8. Doi: 10.1186/1478-4491-6-8.
- Dzhakeli IV., Edzhibadze OI., Gerzmava OKh. (2009). Management problems of improving the quality and efficiency of primary health care system of Georgia. *Georgia Med News*. (172-173):96-9.
- European Health for All Database (HFA-DB) (2013). <http://www.euro.who.int/en/>
- Fuenzalida-Puelma H. (2002). Role of the State in Transition Healthcare. *Journal of Health Sciences Management and Public Health*.
- Gamkrelidze A., Atun R., Gotsadze., MacLehose L. (2002). Health Care Systems in Transition: Georgia. *European Observatory on Healthcare Systems*. 4/2:12-13.
- Garey H., Lorber D. (2008). Universal Mandatory Health Insurance in the Netherlands: A Model for the United States? Commonwealth Fund.
- Georgia Article IV Consultation (2013). International Monetary Fund Country Report. 13/264:14.
- Gerzmava O., Lomtadze L., Kitovani D., Kadjirshvili M. (2011). Development of medical tourism in Georgia. Problems and prospective (review). *Georgian Med News*. 199:64-74.
- Gotsadze G., Bennett S., Ranson K., Gzirishvili D. (2005a). Health care-seeking behavior and out-of-pocket payments in Tbilisi, Georgia. *Health Policy Plan*. 20/4:232-42.
- Gotsadze G., Cashin C., Zoidze A., Valdin, J. (2005b). Descriptive Background to Health Care Financing Reform Strategy Development in Georgia. HCF Discussion paper No. 1: 5-16.
- Gotsadze G., Chikovani I., Gogvadze K., Balabanova D., McKee M. (2010). Reforming sanitary-epidemiological service in Central and Eastern Europe and the former Soviet Union: an exploratory study. *BMC Public Health*. 10/440. Doi: 10.1186/1471-2458-10-440.
- Gotsadze G., Zoidze A., Vasadze O. (2005c) Reform strategies in Georgia and their impact on health care provision in rural areas: evidence from a household survey. *Soc Sci Med*. 60/4:809-21.
- Hauschild T., Berkhout E. (2009). Health-Care Reform in Georgia. A Civil-Society Perspective: Country Case Study. Oxfam International Research Report. 13-14.
- Jorbenadze A., Zoidze A., Gzirirshvili D., Gotsadze G. (1999). Health reform and hospital financing in Georgia *Croat Med J*. 40/2: 221-36.
- Kaiser Family Foundation. Health Coverage & Uninsured. [www.statehealthfacts.org](http://www.statehealthfacts.org)

Kvizhinadze N., Gerzmava O. (2013). Peculiarities of medication safety. *Georgian Med News*. 216:56-60.

Schoen-Angerer T. (2004). Understanding Health Care in the South Caucasus: examples from Armenia. 329:562 <http://dx.doi.org/10.1136/bmj.329.7465.562>

Tobias Hauschild and Esme Berkhout (2009). Health-Care Reform in Georgia. A Civil-Society Perspective: Country Case Study. Oxfam International Research Report. 1-46.

Verulav T., Kalandadze, T. (2001). Health Care System in Georgia. 1<sup>st</sup> ed. Tbilisi, Georgia: State Medical Insurance Company of Georgia. 16 p.

WHO (2009). World Health Statistics. World Health Organization.

World Bank (2008a). Georgia Country Brief 2008. Retrieved from: <http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/ECAEXT/GEORGIAEXTN/0,,menuPK:301755~pagePK:141132~piPK:141107~theSitePK:301746,00.html>

World Bank (2008b) World Development Indicators Database. <http://web.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS/0,,contentMDK:20535285~menuPK:11926294~pagePK:64133150~piPK:64133175~theSitePK:239419,00.html>

### The following tables provide comparative data for the Caucasus Region:

Table 1

<b>Population Comparison in Caucasian Region (thousand)</b>			
Countries	1990	2000	2011
Armenia	3,351,600	3,226,899	3,268,468
Azerbaijan	7,020,366	8,048,600	9,309,301
Georgia	5,438,850	4,418,300	4,483,400

*Note.* Adapted from World Bank (2008a) Georgia Country Brief

Table 2

<b>Total fertility rate of the population in the Caucasian Region</b>			
Countries	1990	2000	2011
Armenia	2.63	1.11	1.5
Azerbaijan	2.8	2	2.4
Georgia	2.15	1.5	1.7

*Note.* Adapted from WHO (2009). World Health Statistics. World Health Organization.

Table 3

<b>Real gross domestic product, PPP\$ per capita of the countries in Caucasian Region</b>			
Countries	1990	2000	2011
Armenia	2121.82	2036.3	5789.38
Azerbaijan	3433.41	2208.94	10061.5
Georgia	4433.15	2219.83	5465.08

*Note.* Adapted from Adapted from World Bank (2008a) Georgia Country Brief

Table 4

<b>Total health expenditure as % of gross domestic product (GDP) of the countries in Caucasian Region (WHO estimates)</b>			
Countries	1990	2000	2011
Armenia	-	6.28	4.34
Azerbaijan	-	4.68	5.24
Georgia	-	6.94	9.44

*Note.* Adapted from WHO (2009). World Health Statistics. World Health Organization.



Table 5

<b>Total health expenditure, PPP\$ per capita of the countries in Caucasian Region (WHO estimates)</b>			
Countries	1990	2000	2011
Armenia	-	127.72	249.54
Azerbaijan	-	102.38	523.14
Georgia	-	143.42	537.52

*Note.* Adapted from Adapted from World Bank (2008a) Georgia Country Brief

Table 6

<b>Physicians per 100,000 Population in Caucasian Region</b>			
Countries	1990	2000	2011
Armenia	-	256.9	252.38
Azerbaijan	391.72	360.72	342.75
Georgia	-	378.83	409.64

*Note.* Adapted from Adapted from World Bank (2008b) Georgia Country Brief

# RESIDUAL METAL CONCENTRATIONS IN ENHANCED COAGULATION WITH FERRIC CHLORIDE AND ALUM FOR TOC REMOVAL

*Mohammad Rafiee*

Department of Environmental Health Engineering, School of Public Health,  
Shahid Beheshti University of Medical Sciences, Tehran, Iran

*Alireza Mesdaghinia*

Department of Environmental Health Engineering, School of Public Health,  
Center for Water Quality Research, Institute for Environmental Research,  
Tehran University of Medical Sciences, Tehran, Iran

*Amir-Hossein Mahvi*

Department of Environmental Health Engineering, School of Public Health,  
Tehran University of Medical Sciences, Tehran, Iran

---

## Abstract

Chemical coagulation with metallic salts has traditionally been used in water treatment for turbidity removal. However, coagulation is also capable of some degree of natural organic matter (NOM) removal, with NOM functioning as a precursor to disinfection by-products (DBPs) formation. Enhanced coagulation is thus introduced to most water utilities treating surface water. Jar-test experiments were conducted to compare the effectiveness of alum and ferric chloride in removing DBPs precursors from eight synthetic water samples, each representing a different element of the USEPA's 3×3 enhanced coagulation matrix, and the residual metal (aluminum/iron) concentration in the treated water was assessed. Coagulant type influenced the removal of total organic carbon (TOC) and which was enhanced with increasing coagulant dose. For all the treated samples coagulation with ferric chloride proved to be more effective than alum at similar doses and the mean values of treatment efficiencies were 51% and 32%, respectively. Ferric chloride was therefore considered the better chemical for enhancing the coagulation process. The results of residual metal concentration measurements in treated water showed that iron and aluminum concentrations had been increased as expected but the quality of water concerning the residual metal deteriorated much more in cases of under-dosing. Despite expecting high residual Al and Fe concentrations under enhanced coagulation, metal concentrations were frequently remained low and were not increased appreciably.

---

**Keywords:** Drinking water, enhanced coagulation, DBPs, residual metal

## Introduction

Disinfection byproducts (DBP) are formed during water disinfection when chemical disinfectants such as chlorine react with the NOM. Many of DBPs are halogenated compounds such as trihalomethanes (THMs) and haloacetic acids (HAAs), which are suspected to have adverse health effects (Reckhow *et al.*, 1990; Krasner *et al.*, 1989; Singer and Bilky, 2002). Concerns regarding the potential health effects of DBPs have resulted in a number of regulations developed by US Environmental Protection Agency (Anonymous 1999). This agency has set maximum contaminant levels for total THMs and five of the haloacetic acids (HAA) of 0.08 mg/L and 0.06 mg/L, respectively, under stage 1 of its

disinfectants and disinfection by-products (D/DBP) Rule. In addition, the rule mandates utilities using disinfectants to remove predetermined levels of total organic carbon (TOC) as a means of reducing DBP precursors. The USEPA has recognized either enhanced coagulation/softening as the best available technology (BAT) for controlling precursors of DBPs in stage 1 of D/DBP Rule (Black *et al.*, 1996; Anonymous, 1999, Volk *et al.*, 2000).

Enhanced coagulation is the practice of using coagulant dose in excess of what is normally required for turbidity removal, to achieve a specific reduction of TOC. Enhanced coagulation was selected as the stage 1 treatment of choice because it was effective for the removal of TOC and could be implemented at most water utilities treating surface waters using existing treatment processes. The rational concern behind the introduction of this treatment technique was that only a very small fraction of the DBPs and associated health risks have been identified, thus an increase in precursor removal would reduce overall known and unknown public health risks (Babcock and Singer 1979; Edzwald and Tobiason, 1999; Singer and Bilky, 2002). The enhanced coagulation requirements of TOC reduction are based on the TOC and alkalinity of the source water as shown in Table 1. The TOC removal criteria presented in Table 1 were selected so that a large majority (e.g., 90 percent) of plants required to operate with enhanced coagulation would be able to meet the TOC removal percentages (Anonymous, 1999).

In practicing enhanced coagulation, water systems are not expected to optimize or maximize the removal of DBPs precursors. So as not to be cost prohibitive, systems must meet target percent removals of TOC, where TOC serves as a surrogate for identified and not identified DBPs precursors. The percent removal requirements specified in Table 1 were developed with recognition of the tendency for TOC removal to become more difficult as alkalinity increases and TOC decreases. In higher alkalinity waters, pH depression to a level at which TOC removal is optimal (e.g., pH between 5.5 and 6.5) is more difficult and cannot be easily achieved through the addition of coagulant alone (Miltner *et al.*, 1994; Anonymous, 1999).

NOM removal is higher at low pH values for all coagulants. To achieve the NOM removals designated by the D/DBPs rule, coagulation may be accomplished by increased coagulant dosages, lower coagulation pH values, or both (BellAgy *et al.*, 2000). At several utilities, pH is controlled by the addition of the coagulant. Some utilities, however, focus on independent control of pH through separate addition of acids (Gregory and Duan, 2001; Budd *et al.*, 2004). Meeting the requirements of the Table 1 is termed as step 1 in the D/DBP Rule. Some plants required to implement enhanced coagulation which will not be achieved the removal levels indicated in Table 1, because their water quality characteristics are not unique. These plants require conducting jar or bench scale testing under step 2 procedures to establish an alternative TOC removal requirement. The D/DBP rule will force many water systems to move from conventional to enhanced coagulation and to expand their coagulation objectives to include TOC removal (Anonymous, 1999). The objectives of this investigation, focused at bench scale and for different synthetic waters, were to: 1) Compare the effectiveness of alum and FeCl<sub>3</sub> in removing DBPs precursors and 2) Evaluate the effect of enhanced coagulation implementation on residual metal (aluminum/ iron) concentration.

## Materials and methods

For preparation of synthetic samples with different concentrations of TOC, tap water was first passed through a GAC column and predetermined amounts of commercial humic acid were added to its effluent. It is noted in literature that commercial humic substances have been found to be significantly different from the natural aquatic NOM, although the principal contents are similar (Malcolm and McCarty, 1986).

Reduction of water alkalinity to less than 60 mg/L as CaCO<sub>3</sub> was provided by boiling of treated water and for increasing to more than 120 mg/L as CaCO<sub>3</sub>, soda ash addition was accomplished.

Turbidity adjustment of water samples was finally performed by addition of natural clay screened for 200 mesh.

Water samples were classified into eight groups according to their total alkalinity and TOC levels (Table 2). In other words, eight groups of synthetic water samples each representing a different element of 3×3 enhanced coagulation matrix was involved in this study. Jar tests were all accomplished by use of a standard six phase stirring apparatus at ambient temperature (Table 3). Addition of coagulant (alum or ferric chloride) was done during rapid mixing and doses applied were 5, 15, 30, 45, 60 and 80 mg/L. Doses above 80 mg/L were not chosen since they were not customary for use in actual plants and had not significant efficiencies.

After the end of the jar tests, sampling of the supernatants was conducted by an appropriate tip pipette from the depth of 10 cm below the water surface in the jar, so it was possible to sample the small quantities of settled water for analyses. Residual TOC, DOC, UV, pH, turbidity, alkalinity, and iron as well as aluminum concentrations were measured according to the procedures outlined in Standard Methods (Anonymous, 1998). Besides, the volume and weight of produced sludge were carefully determined.

Analyses of TOC and dissolved organic carbon were conducted at the Research Institute of Petroleum Industry in Tehran, while other parameters were determined at Department of the Environmental Health Engineering, School of Public Health, Tehran University of Medical Sciences, Iran.

Water samples were preserved with sulfuric acid at pH < 2. TOC and DOC were measured using a TOC analyzer (SM5310B, Combustion Infrared), (Anonymous, 1998). DOC measurements were made after filtering the samples through prerinsed 0.45µm membrane filters. A UV spectrophotometer with 1cm light pass was used to measure UV absorbance. As with DOC, samples were first filtered through prerinsed 0.45 m membrane filters. Filtered double deionized water was used to calibrate the instrument. Turbidity measurements were made using a turbidimeter.

Measurements of residual aluminum were made using Eriochrome Cyanine R method according to Standard Methods and residual iron concentrations were measured by atomic absorption spectrometer.

## Results and discussion

Both alum and ferric chloride were used as primary coagulants and the data given in Fig. 1 are representative of the results obtained. Fig. 1 shows the effect of coagulant dose and pH on TOC removal from a water sample with initial TOC and alkalinity of 5.4 mg/L and 110 mg/L as CaCO<sub>3</sub>, respectively. Other results were somewhat similar to this and only this representative sample is discussed here. The mean values of TOC removal were 32% and 51% by alum and ferric chloride, respectively. In the other words, the efficiency of this treatment by FeCl<sub>3</sub> was approximately 19% more ( $P=0.003$ ). The maximum TOC removal rates obtained using alum and FeCl<sub>3</sub> were 88% and 93%, respectively. Furthermore, the alum and FeCl<sub>3</sub> doses needed to meet the TOC removal requirements are illustrated in Fig. 1.

According to Fig. 1 and overall results summarized in Table 4, the results of this research are similar to those found in other studies concerning NOM removal (Black *et al.*, 1996; Volk *et al.*, 2000; Singer and Bilky, 2002). Some investigators have reported that iron was superior to alum salts. For example, mean TOC removal using ferric sulfate was determined to be 65% and much more than results of water coagulation by alum which was reported to be 47% in experiments performed for treating Hillsborough River water

(Gianatasio *et al.*, 1995). On the other hand, results of another study which was performed on influent water to 46 treatment plants indicated that TOC removal was best achieved when alum was used with sulfuric acid (Lind, 1995). Simultaneously, Crozes *et al.*, (1995) and Volk *et al.*, (2000) reported that the efficiency of organic matter removal can be more increased using ferric chloride as compared with alum.

According to above discussion, it appears that colloidal destabilization as well as humates and fulvates formation both were better accomplished by  $\text{FeCl}_3$  in dosages much less than the required amounts of alum (about one half). In addition, standard  $\text{FeCl}_3$  solution (40-45%) is more acidic than 50% alum and so more alkalinity is consumed for formation of ferric hydroxides (Crozes *et al.*, 1995). Consequently, coagulation pH would be much less with  $\text{FeCl}_3$  at similar coagulant doses. More favorable pH is undoubtedly the most important reason for better removal of TOC by iron salts. This indicates that the total coagulant demand can be decreased with  $\text{FeCl}_3$ .

Another explanation for better efficiency of  $\text{FeCl}_3$  could be that iron hydroxides differ from Al hydroxides in specific surface area and surface charge. According to literature, the specific surface area of Fe and Al hydroxides are in different ranges of 160-230 and 200-400  $\text{m}^2/\text{g}$ ; however, due to higher active metal concentration in  $\text{FeCl}_3$  and higher molecular weight of Fe, the total available surface is much more for  $\text{FeCl}_3$  than for alum (Krasner, 1989 and Crozes *et al.*, 1995).

As an overall conclusion, it could be noted that  $\text{FeCl}_3$  was one of the best chemicals for enhancing the coagulation process, since it could meet the TOC removal requirements without need to pH adjustment by acids mainly due to provision of higher acidity that results in higher removal of NOM. Moreover, and as our study clearly showed, the volume and weight of produced sludge were much less for ferric chloride than for alum. Thereby, treatment plants would be confronted to fewer problems with respect to final sludge disposal.

Two typical examples of the relationships between residual aluminum and iron concentrations and applied coagulant dose are shown in Fig. 2 and 3, respectively. As shown in Fig. 2, it may be noted that while residual Al concentration had increased from 0.025 mg/L in raw water to 3 mg/L by increased coagulant (alum) dose of about 15 mg/L, but by further dose increase to 60 mg/L alum, it has decreased to about 1.3 mg/L, and again this concentration had increased to about 2.5 mg/L by further addition of coagulant.

It is obvious that residual Al or Fe concentrations remained in drinking water after enhanced coagulation is a critical factor because these metals are suspected to be harmful to human and other living organisms and may lead to diseases such as Alzheimer's syndrome, osteoporosis, anemia, and anorexia for aluminum (Wen and Fung, 2002) and aesthetic problems (for iron). There was a general trend for residual metal concentrations that underdosing or overdosing of coagulants resulted in significant deterioration of water quality with respect to residual aluminum and iron concentrations, though the effect of under dosing is much more pronounced. It is an outstanding point that residual Al concentration is frequently remained low when coagulant doses required for meeting the TOC removal requirements are applied. In fact, the metal residuals are consistently lower than those obtained under the turbidity removal conditions. Even though more metal was utilized in the enhanced coagulation, more was precipitated. The study confirms the effect of alum dose on residual aluminum concentration as indicated in Fig. 2. Al concentrations were detected as minimum when alum doses required for 40% removal of TOC were added. This level of TOC removal is enough for meeting the requirements of the stage 1 D/DBPs rule. The use of excess coagulant to reach less Al concentration in drinking water is not recommended when excess production of sludge and/or shortened filter runs are experienced. On the other hand, use of fewer doses may not result in sufficient NOM removal and Fig. 3 indicates that NOM concentration sharply increased to its initial amount by reduction of coagulant dose. Similar

results and discussions would also be mentioned about residual iron concentration in drinking water.

Another problem is pH dependency. Based on the literature the solubility of different species of aluminum and iron are least at pHs 6 and 8, respectively. At pH values higher or lower than these pHs of minimum solubility, dissolved Al or Fe levels in settled water will increase. Besides, iron solubility is much less than Al solubility at normal pH of water (Anonymous, 2005). It should be noted that concentrations of iron reported by this study had been determined for unfiltered water samples and reducing pH to less than 2 for preservation objectives may cause re-dissolution of produced fine flocs. Finally, comparison of iron and Al solubility illustrates that iron salts produce non-dissolved forms in a broad pH range and hence they would be regarded as the best choice for coagulating water samples with high pHs. Accordingly, increasing coagulant dose should not always be considered as a trouble since better NOM removal can occur and so much better water quality would be expected.

### References:

- Anonymous, (1998). Standard methods for the examination of water and wastewater. 20th Ed. APHA, AWWA, WEF, Washington, D.C.
- Anonymous, (1999). Enhanced coagulation and enhanced precipitative softening guidance manual. EPA 815-R-99012, office of water, USEPA, Washington D.C.
- Anonymous, (2005). Water treatment: principles and design. 2nd Ed. John Wiley and sons, MWH, 676-79.
- Babcock, D. B. and Singer, P. C., (1979). Chlorination and coagulation of humic and fulvic acids. *JAWWA*, **71** (3), 149-63.
- BellaJy, K., Abbaszadegan, M., Ibrahim, E., Verges, D. and Lechevallier, M., (2000). Conventional and optimized coagulation for NOM removal. *JAWWA*, **92** (10), 44-58.
- Black, B. D., Harrington, G. W. and Singer, P. C., (1996). Impact of organic carbon removal on cancer risks posed by drinking water chlorination. *JAWWA*, **88** (12), 40-9.
- Budd, G. C., Hess, A. F., Shorney-Darby, H., Neemann, J. J., Spencer, C. M., (2004). Coagulation applications for new treatment goals. *JAWWA*, **92** (2), 102-13.
- Crozes, G., White, P. and Marshall, M. (1995). Enhanced coagulation: its effect on NOM removal and chemical costs. *JAWWA*, **87** (1), 78-89.
- Edzwald, J. K., Tobiason, J. E., (1999). Enhanced coagulation: US requirements and a broader view. *Wat. Sci. Tech.*, **40** (9), 63-70.
- Gianatasio, J. M., Hook, M. A. and Hjersted, L. J., (1995). Enhanced coagulation: An operational perspective enhanced ferric sulfate treatment for color and TOC removal at the city of Tampa Hillsborough River Water Treatment Plant. Proc., AWWA WQTC, New Oreland.
- Gregory, J. and Duan, J., (2001). Hydrolyzing metal salts as coagulants. *Pure Appl. Chem.*, **73** (12), 2017-26.
- Krasner, S. K., McGuire, M. J. and Jacangelo, J. J. (1989). The occurrence of disinfection byproducts in US drinking water. *JAWWA*, **81** (8): 41.
- Lind, C. B. (1995). Experiences in TOC removal by polyaluminum hydroxychloride and enhanced coagulants. AWWA Annual Conf., Anaheim, CA (June 17-21).
- Malcolm, R. L. and MacCarthy, P., (1986). Limitations in the use of commercial humic substances in water and soil research. *Environ. Sci. Tech.*, **20** (9), 904-11.
- Miltner, M. J., Nolan, S. A. and Summers, R. S., (1994). Evolution of enhanced coagulation for DBP Coagulation: Critical issues in water and wastewater treatment: proceeding of the 1994 national conference on environmental engineering, Boulder, Co: ASCE.
- Reckhow, D. A., Singer, P. C., (1990). Chlorination byproducts in drinking waters: from formation potentials to finished water concentrations. *JAWWA*, **82** (4), 173.

Singer, P. C., Bilky, K., (2002). Enhanced coagulation using a magnetic ion exchange resin. *Wat. Res.*, **36**, 4009-22.

Volk, C., Bell, K., Ibrahim, E., Verges, D., Amy, G. and LeChevallier, M., (2000). Impact of enhanced and optimized coagulation on removal of organic matter and its biodegradable fraction in drinking water. *Wat. Res.*, **34** (12), 3247-57.

Wen, Po. Cheng and Fung Hwa, Chi., (2002). A study of coagulation mechanisms of polyferric sulfate reacting with humic acid using a fluorescence quenching method. *Wat. Res.*, **36**, 4583-91.

Table 1: Enhanced coagulation: required TOC percent removals (Anonymous, 1999)

Source water TOC (mg/L)	Source water alkalinity (mg/L CaCO <sub>3</sub> )		
	0-60	60-120	>120
2.0-4.0	35	25	15
4.0-8.0	45	35	25
>8.0	50	40	30

Table 2: Studied groups according to TOC and alkalinity

Source water TOC (mg/L)	Source water alkalinity (mg/L CaCO <sub>3</sub> )		
	0-60	60-120	>120
2.0-4.0	+	+	+
4.0-8.0	-	+	+
>8.0	+	+	+

+ : Tested, - : Not tested

Table 3: Jar-test mixing conditions

Parameter	Flash Mixing	Flocculation		Sedimentation
		Phase 1	Phase 2	
Speed (rpm)	100	40	20	-
Time (min)	1	7.5	7.5	30-60

Table 4: Average and maximum removal levels of TOC as a function of coagulant type Univariate tests

Coagulant	No. of Samples	Mean %	Mean difference	Pvalue	Maximum %
Alum	46	32.239	-19.097	0.003	88
FeCl <sub>3</sub>	48	51.335	19.097	0.003	92

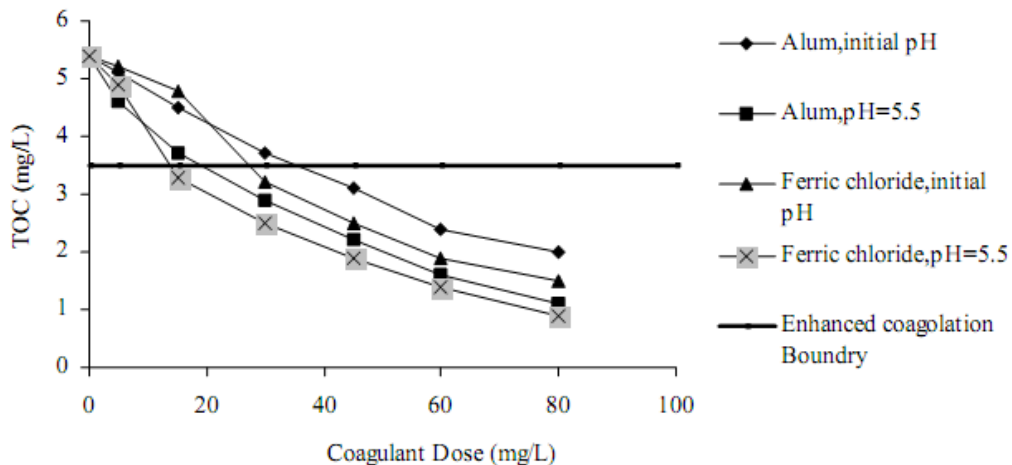


Fig. 1: Effect of coagulant dose on residual TOC [TOC<sub>0</sub>=5.4 mg/L, Alk=110 mg/L CaCO<sub>3</sub>]

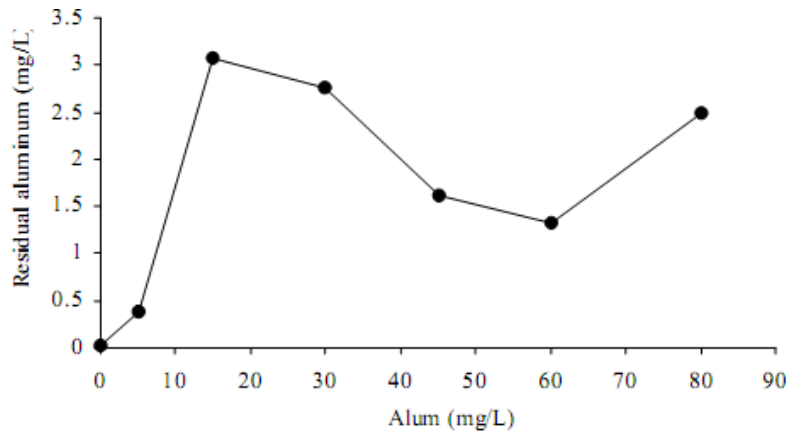


Fig. 2: Effect of Alum dose on residual aluminum concentration  
[TOC<sub>0</sub>=12.4 mg/L, Alk=115 mg/L CaCO<sub>3</sub>]

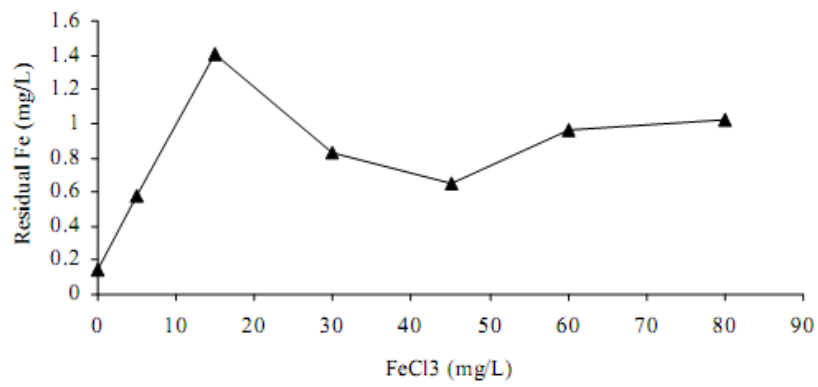


Fig. 3: Effect of FeCl<sub>3</sub> dose on residual iron concentration  
[TOC<sub>0</sub>=5.5 mg/L, Alk=144 mg/L CaCO<sub>3</sub>]



## LEADING CAUSES AND POSSIBLE ENVIRONMENTAL CONTRIBUTORS FOR END STAGE RENAL DISEASE IN AL-MADINAH REGION IN SAUDI ARABIA

*Inass M. Taha*  
*Amr M. El-Shafie*

Internal Medicine Department, Faculty of Medicine, Taibah University

---

### Abstract

To find-out the leading causes and the possible environmental contributors for End Stage Renal Disease (ESRD) in Al-Madinah region, KSA.. 156 patients suffering from ESRD and 160 apparently healthy subjects of comparable age and sex were included. None of the participants was occupationally exposed to lead, cadmium and/or mercury. None affection of the control subjects with renal diseases was confirmed. Patients with undefined leading causes for ESRD (44) and an equal number of the control subjects were subjected to determine their blood levels of lead, cadmium and mercury. The study revealed that the main leading causes of ESRD in Al-Madinah region were hypertension, obstructive uropathy and diabetes mellitus. Environmental pollutants of lead (Pb) and cadmium (Cd) contributed to ESRD in Al-Madinah region particularly in urban areas. Mercury (Hg) was not a pollutant in Al-Madinah region. The study recommended early diagnosis and proper control of hypertension, obstructive uropathy and diabetes mellitus. It also recommended regular environmental monitoring for (Pb) and cadmium (Cd) levels and finds the sources of their elevations and efforts should be raised up to eliminate them.

---

**Keywords:** Environmental Pollutants, ERSR, Al-Madinah Region, KSA

### Aim

The present study was conducted to find-out the most leading causes of ESRD and the role of nephrotoxic heavy metals in patients when no leading causes could be identified in Al-Madinah region.

### Methods

A case control study was done in a private hospital and a charity kidney association that has a kidney dialysis center. 156 ESRD patients and 160 healthy subjects of comparable age and sex were included. A serum sample was taken from each of the patients and control subjects and was tested for lead, cadmium and mercury by using atomic absorption spectrophelometry. Urea and creatinin serum levels were also estimated using standard laboratory techniques.

Data were analyzed using SPSS-14, utilizing Students t test and the Chi square test as an appropriate. The adapted level of significance was 0.05. Correlations coefficient (r) was used to assess the presence of linear correlations.

### Introduction

There has been a marked rise in the prevalence and incidence of end stage chronic kidney disease (CKD) in Saudi Arabia over the last three decades<sup>(1)</sup>.

The first dialysis session in Saudi Arabia took place in 1971 and the first renal transplant in 1979. By the end of 2008, there were 10,203 patients on hemodialysis, 966 on peritoneal dialysis, and 7836 with functioning kidney grafts<sup>(2)</sup>.

The over-all prevalence of CRF was 5.7 %<sup>(3)</sup>. This rise exceeds those reported from many countries. The enormous and rapid changes in lifestyle, high population growth, fast increase in life expectancy, and massive urbanization that has occurred over the last 3 decades combined to make the current CKD status different to what it was<sup>(1)</sup>.

The major factors that influence the CKD status are the very high rate of diabetic nephropathy and shift in age demographics<sup>(4)</sup>. There are no available data about the possible environmental factors that may contribute to this rising prevalence in the general population of the kingdom of Saudi Arabia. Worldwide, one third of the patients with chronic renal failure had no obvious predisposing disease<sup>(4)</sup>. One of the silent leading causes of chronic renal failure is the chronic interstitial nephritis secondary to various nephrotoxins<sup>(5)</sup>.

Heavy metals particularly; lead (Pb), cadmium (Cd) and mercury (Hg) are the most nephrotoxic environmental pollutants<sup>(6)</sup>.

Chronic exposure to cadmium, (an industrial and environmental pollutant that is found in Tobacco smoke , fresh and canned fish and processed vegetable products), can cause both renal proximal tubular damage and decline in glomerular filtration rate (GFR) in humans; this has been confirmed in experimental models<sup>(7,8,9)</sup>.

Cadmium nephropathy is characterized by low molecular weight (LMW) proteinuria due to diminished intrarenal uptake and catabolism of filtered proteins. In cadmium nephropathy, proximal tubular dysfunction persists until renal failure supervenes<sup>(10)</sup>.

Although cadmium nephropathy has been observed in workers exposed to high levels of Cd, recent data suggest that relatively low levels of exposure in people living in polluted industrial areas increase the risk of tubular dysfunction<sup>(7)</sup>.

Lead-induced nephropathy is well recognized in persons with a high level of exposure to lead<sup>(11-14)</sup>.

The usual sources of lead are lead additives in motor fuels, lead water pipes, lead containing paints, smoking besides canned food and drinks<sup>(15)</sup>.

Several epidemiologic studies have demonstrated a positive association between blood lead levels and the rate of the usual decrease in renal function that occurs with age in the general population<sup>(16-18)</sup>.

## **Subjects and methods**

### **Patients**

The present study comprised 156 ESRD patients who were recruited from hemodialysis centers of Madinah National Hospital (MNH), and Al-Azhari Kidney Charity Centre during the period of the study (three months). Only patients on maintenance hemodialysis who were aged 16 years or more and who underwent hemodialysis for 6 months were enrolled in the study. Patients with any obvious chronic autoimmune diseases and those who had been hospitalized or had undergone surgery within the last 3 months before starting of the study were excluded. In addition, a questionnaire was arranged to survey patients who had a history of occupational exposure to lead or previous lead intoxication or those living in lead-contaminated areas also were excluded. Most of the patients has been undergone 4 hours hemodialysis, 3 times per week. Hemodialysis for these patients was carried out using single-use, hollow-fiber dialyzers equipped with modified cellulose, polyamide, or polysulfone membranes. Medical records of the ESRD patients were revised.

## Controls

160 age and sex matched group of controls were randomly selected from those healthy subjects working in the same hemodialysis centers or visitors to MNH accompanying a relative during his / her visit to different patient clinics at MNH. Controls that had chronic illnesses or known to have an occupation that exposes them to environmental toxins were excluded by using the same questionnaires applied for the patient group. A random urine sample from each control subject was tested for albuminuria using Albustix to exclude renal disease subjects.

All subjects included in the study were interviewed for thorough history taking and physical examination.

## Laboratory and Biochemical Procedures

Controlled group was subjected to urine Albustix to test for albuminuria in order to exclude renal disease.

Blood samples from each of the patients were collected in a glass tube from the arterial end of the vascular access immediately after initiating a 2-day hemodialysis at mid-week. From controls, blood samples were extracted from peripheral veins. All samples were centrifuged, and stored at  $-80^{\circ}\text{C}$  for further analysis and measurement of blood lead, cadmium, mercury levels and biochemical data. Both groups were tested for blood hemoglobin, urea, creatinine and albumin. Serum high sensitivity C-reactive protein concentrations were measured by immunonephelometry.

The clearance of urea through dialysis was expressed as  $\text{Kt/V}$ , using the Daugirdas20 method. Abnormal high-sensitivity C-reactive protein level was defined as  $>3.0\text{ mg/L}$ , which corresponded to the level in patients on maintenance hemodialysis with an increased cardiovascular risk. Abnormal serum albumin level was defined as  $<3.5\text{ g/dL}$ .

Blood lead, cadmium and mercury levels were measured using an electro-thermal atomic-absorption spectrometer (Spectra A-200Z; Varian, Lexington, Mass) <sup>(19)</sup>. Because most of lead exists in red blood cells, blood lead level is corrected by Zeeman Background Correction and L'vov platform hemoglobin (corrected blood lead level). In men, corrected blood lead level = blood lead level  $\times 14.0$  /hemoglobin levels, in women, corrected blood lead level = blood lead level  $\times 12$  /hemoglobin levels.

The mean blood levels were stratified into 2 equal groups: low blood lead levels and high blood lead level according to each matter range values.

## Statistical analysis

Data were analyzed statistically by using Student's "t" test and the Chi square ( $\chi^2$ ) test as appropriate. The adopted level of significance was 0.05. Correlation coefficient (r) was used to assess the presence of linear correlation between blood lead, cadmium and mercury levels and each of blood urea and serum creatinine levels <sup>(20)</sup>.

## Results

Table (1) displays characteristics of the studied groups. It shows that no significant difference did occur between patients and control subjects regarding the average age ( $t = 1.495$ ), sex distribution ( $\chi^2 = 0.023$ ) and residence ( $\chi^2 = 0.455$ ).

Table (2) shows leading causes for chronic renal failure among patients and the control subjects. It shows that hypertension, obstructive uropathy and diabetes mellitus were associated with chronic renal failure in significant higher frequency than those in the control subjects ( $\chi^2 = 24.426$ ,  $21.864$  and  $17.661$  respectively) . Polycystic kidney did not occur among the control subjects while 13 chronic renal failure patients (8.4%) suffered from that

disease. Undefined leading causes for chronic renal failure were observed in 28.2% of the patients.

Table (3) shows residence and smoking habit among chronic renal failure patients with undefined leading causes and the control subjects. It shows that more than two thirds of the patients (70.45%) were living in urban areas compared to 36.36% of the control subjects. The difference was statistically significant ( $\chi^2 = 10.276$ ). The table shows also that smoking was reported by 50% of the chronic renal failure patients. Compared with 47.73% of the control subjects, the difference was insignificant ( $\chi^2 = 0.045$ ).

*Table (1) : Characteristics of the studied groups.*

Characteristics	Chronic Renal Failure (n = 156)	Control group (n = 160)	Tests of significance
Age ( years ) : Range Mean $\pm$ SD	28 – 63 44.6 $\pm$ 10.4	28 – 63 44.6 $\pm$ 10.4	t = 1.495
Sex : Males No. (%) Females No. (%)	106 (67.95) 50 (32.05)	110 (68.75) 50 (31.25)	$\chi^2 = 0.023$
Residence : Urban No. (%) Rural No. (%)	48 (30.77) 108 (69.23)	59 (36.9) 101 (63.1)	$\chi^2 = 0.445$

*Table (2) : Leading causes for chronic renal failure among patients and the control subjects.*

Leading causes	Chronic Renal Failure (n = 156)		Control (n = 160)		$\chi^2_1$
	No.	%	No.	%	
Hypertension	35	22.4	6	3.8	24.426*
Obstructive uropathy	29	18.6	4	2.5	21.864
Diabetes Mellitus	29	18.6	6	3.8	17.661*
Polycystic kidney	13	18.4	0	0.0	---
Gout	6	8.4	6	3.7	0.0002
Undefined	44	28.2	138	86.3	108.966*

\* Significance at  $p < 0.05$ .

*Table (3) : Residence and smoking habit among chronic renal failure patients with undefined leading cause and the control subject.*

	Chronic Renal Failure (n = 44)	Control (n = 44)	$\chi^2$
Residence : Urban No. (%) Rural No. (%)	31 (70.45) 13 (29.55)	16 (36.36) 28 (63.64)	10.267*
Smokers No. (%) Non smokers No. (%)	22 (50.00) 22 (50.00)	21 (47.73) 23 (52.27)	0.045

\* Significant at  $p < 0.05$ .

**Table (4) : Averages of blood levels of lead, cadmium and mercury in chronic renal failure patients and the control subjects by residence.**

Heavy metals and Residence	CRF (n = 44)		Control (n = 44)		t <sub>1</sub>	
	n	Mean ± SD	n	Mean ± SD		
Lead :	Urban	31	22.7 ± 3.8	16	13.2 ± 2.3	7.91*
	Rural	13	17.2 ± 3.3	28	10.9 ± 4.1	5.25*
	t		4.82*		3.71*	
Cadmium :	Urban	31	0.9 ± 0.3	16	0.5 ± 0.2	5.44*
	Rural	13	0.7 ± 0.2	28	0.3 ± 0.1	4.37*
	t		2.58*		3.71*	
Mercury :	Urban	31	0.8 ± 101	16	0.6 ± 0.2	0.982
	Rural	13	0.6 ± 0.8	28	0.5 ± 0.2	0.450
	t		0.90		1.41	

t : Tested difference between two arithmetic means in urban and rural residence.  
t<sub>1</sub> : Tested difference between two arithmetic means in CRF patients and control subjects.  
CRF = Chronic renal failure. \* = Significant at p < 0.05.

**Table (5) : Correlations between blood levels of the heavy metals (Lead, cadmium and mercury) and each of serum urea and creatinine levels.**

Heavy metals	Serum urea ( mg/dl )		Serum creatinine (mg/dl)	
	r	t	r	t
	(n = 44)		(n = 44)	
Lead ( ug/dl )	0.543	3.224*	0.501	2.996*
Cadmium ( ug/dl )	0.601	3.534*	0.698	4.036*
Mercury ( ug/dl )	0.21	0.136	0.049	0.315

\* Significant at p < 0.05.

Table (4) displays average of blood levels of lead, cadmium and mercury among chronic renal failure patients and the control subjects according to residence. It reveals that whatever the residence, the averages of the blood levels of lead and cadmium were significantly higher among chronic renal failure patients compared to the control subjects. Averages of blood levels of mercury in chronic renal failure patients did not differ from those of the control subjects whether living in urban or rural areas (t= 0.491 and 0.00 respectively). Averages of blood lead and cadmium levels were significantly among residence in urban areas compared to those in rural areas whether they suffer from chronic renal failure or not.

Table (5) shows correlations between blood levels of the heavy metals (lead, cadmium and mercury) and each of serum urea and creatinine. Blood mercury level did not correlate with neither serum urea nor serum creatinine (r = 0.021 and 0.049 respectively).

## Discussion

The finding that the undefined leading causes for chronic renal failure was encountered in more than a quarter of patients (28.2%), agrees with many authors<sup>(21,22)</sup> but disagrees with others<sup>(23-25)</sup>. Discrepancies in the detectability rates of leading causes of ESRD in different areas or countries are dependent on the comprehensiveness of the diagnostic

approach and facilities as well as awareness with the relevant local environmental hazards<sup>(26)</sup>. According to Nordfors et al. and Choi et al., hypertension and diabetes mellitus are the main leading causes for ESRD in USA<sup>(27,28)</sup>. These data were confirmed by the annual United States Renal Data 2011<sup>(29)</sup>. The present work added obstructive uropathy as a leading cause of equal frequency or even more with diabetes mellitus. This high frequency of obstructive uropathy among patients with ESRD was contrary with the finding of Norris and Agodoa (2005) as well as Warren et al. (2004)<sup>(30,31)</sup>. This might be explained on the basis of the high prevalence of multiple types and sizes of renal stones associated with different pictures of renal strictures in the studied area. a matter that was supported by the observation that more than two thirds of the ESRD (69.23%) were living in rural areas. According to El Minshawy , obstructive uropathy related to schistosomiasis is more powerful renal failure inducer compared to other reasons of obstructive uropathy<sup>(22)</sup>. This might be attributed to an associated immune complex nephritis exerting a synergistic effect towards chronic renal failure<sup>(32)</sup>.

The estimated high frequencies of ESRD with undefined leading causes has triggered thinking of chronic interstitial nephritis which might be incidious, symptomless and often presenting as secondary hypertension or unexplained chronic renal failure<sup>(5)</sup>. Thijssen et al. postulated that environmental pollutants might be the underlying cause for such chronic interstitial nephritis<sup>(8)</sup>. In this work; whether in the urban or the rural residence, the averages of blood lead levels among ESRD patients were not only significantly higher than those of the control subjects, but also far beyond the normal limit (15µg/dl)<sup>(24)</sup>. According to Weeden (1992), blood lead level over 15 µg/dl is associated with lead-induced organ damage<sup>(12)</sup>. The significant positive correlation between blood lead level and each of serum urea and creatinine pointed to amenability of renal tissue to lead-induced damage. This was in line with Kim et al. who reported that the increased body lead burden contributes to a significant portion of chronic renal failure<sup>(18)</sup>.

The finding that urban inhabitants had significant higher averages of blood lead levels compared to rural ones should indicate more environmental pollution with lead in urban areas as none of the studied groups was occupationally exposed to lead. Moreover, frequencies of smokers among urban and rural inhabitants in this study were nearly equal. According to Nuyts et al. and Staessen, leaded-gasoline used for motor running is the main source for environmental pollution in urban areas due to traffic overcrowding. Rural areas are less exposed due to fewer number of running cars<sup>(14,16)</sup>.

In the present study, the significant higher averages of blood cadmium levels among chronic renal failure patients compared to the control subjects, agree with Järup et al. and Ferraro et al.<sup>(7,10)</sup>. This in addition to the significant positive correlation between blood cadmium level and each of serum urea and creatinine reflect the role of cadmium exposure in the occurrence of chronic renal failure. Also, the observed significant higher averages of blood cadmium levels among urban inhabitants compared to rural ones might reflect more environmental pollution in urban areas. This was in line with Francis et al.<sup>(9)</sup> Hallan and Orth incriminated smoking while Milman et al. incriminated the more consumption of tinned fish and vegetables<sup>(33,34)</sup>. However the equal rates of smoking in urban and rural areas excluded smoking from being the main source of cadmium pollution in urban areas.

In this study, the averages of blood mercury levels among chronic renal failure patients and the control subjects were < 1 µg/dl which is the cut-off level for toxicity as determined by WHO (1977)<sup>(35)</sup>. The observed apparently higher mercury levels in chronic renal failure patients compared with control subjects might be explained on the basis that, kidneys in patients with chronic renal failure are not yet able to clear the accumulated body mercury from whatever source resulting in the slight higher blood mercury concentration<sup>(36)</sup>. The slight elevation of blood mercury level is a result not a cause as confirmed by the lack of

correlation between blood mercury levels and each of the serum urea and creatinine (table 5). Therefore, mercury might not be an environmental pollutants in Al-Madinah region.

### Conclusion

The well defined leading causes for chronic renal failure in Madinah Region, KSA., were hypertension, diabetes mellitus and obstructive uropathy. Urban areas were significantly more affecting by environmental pollutions. We attribute pollution in urban areas to heavy traffic by all kinds of cars and preferred use of the majority of population to the canned and preserved food and drinks.

### Recommendations

The following might minimize the occurrence of chronic renal failure:

- 1- The health care strategy should emphasize early case finding and proper control of hypertension, diabetes mellitus and obstructive uropathy.
- 2- There should be regular environmental monitoring of heavy metals particularly lead and cadmium levels.
- 3- Sources of detected pollutants should be periodically investigated and should be treated or eliminated.
- 4- Industrial or service activities associated with environmental pollution with heavy metals should be away from the residential areas
- 5- Lead-free gasoline should be made the only available engine fuel and its use should be generalized.

### References:

- Al-Sayyari AA and Shaheen FA. "End stage chronic kidney disease in Saudi Arabia. A rapidly changing scene". *Saudi Med J.* 2011 Apr; 32(4): 339-46.
- "Annual Report of Saudi Center for Organ Transplantation". (Updated: 2009). Available from URL: <http://www.scot.org.sa>
- Alsuwaida AO, Farag YM et al. "Epidemiology of chronic kidney disease in the Kingdom of Saudi Arabia". *Saudi J Kidney Dis Transpl*; 2010, 21(6): 66-72.
- Flack J and Daniels B. "Ethnicity and renal disease, Lessons from multiple risk factors". *Am. J. Kidney Dis.* (1993); suppl; 21( 4 ): 21-40.
- Goyer R. "Environmentally related diseases of urinary tract" . *Med. Clin. North Am* (1990); 74: 377-387.
- Coat L and Al-Saleh I. "Exposure to heavy metals in Saudi Arabia, relation to renal functioning". *Nephro. Dial. & Transplant.* (1994); 9: 532-38.
- Järup L, Hellström L et al. "Low level exposure to cadmium and early kidney damage: the OSCAR study". *Occup Environ Med* 2000, 57: 668–72.
- Thijssen S, Maringwa J, Faes C, Lambrecht I and VanKerkhove, E. "Chronic exposure of mice to environmentally relevant, low doses of cadmium leads to early renal damage, not predicted by blood or urine cadmium levels". *Toxicology* 2007, 229: 145–56.
- Francis S, Francoise D and Staessen J. "Impact of environmental cadmium pollution on exposed persons". *Arch. Environ. Health* (1992) ; 47(5): 347-53.
- Pietro Manuel Ferraro, Stefano Costanzi, Alessandro Naticchia, et al. "Low Level Exposure to Cadmium Increases the Risk of Chronic Kidney Disease". *Analysis of the NHANES 1999–2006. Disclosures Posted: 08/23/2010; BMC Public Health.* 2010; 10(331) © 2010 Ferraro et al.
- Henderson DA.: "The etiology of chronic nephritis in Queensland". *Med J Aust* 1985; 1: 377-86.
- Wedeen R. "Renal diseases of Occupational origin". *Occup. Med.* 1992; 7(3):449-63

- Wedeen, R.; Mallick, D.; Batuman, V.: "Detection and treatment of occupational lead nephropathy". *Arch Intern Med* 1979; 139: 53-57.
- Nuyts GD, Daelemans RA, Jorens PG et al. "Does lead play a role in the development of chronic renal disease?". *Nephrol Dial Transplant* 1991; 6: 307-315.
- Nolanc C and sheikh Z. "lead and nephropathy". *Toxicology* (1992); 73 (2) : 127-46.
- Staessen JA, Lauwerys RR, Buchet J-P, et al. "Impairment of renal function with increasing blood lead concentrations in the general population". *N Engl J Med* 1992; 327:151-156.
- Payton M, Hu H, Sparrow D and Weiss ST. "Low-level lead exposure and renal function in the Normative Aging Study". *Am J Epidemiol.* 1994; 140: 821-829.
- Kim R, Rotnitsky A, Sparrow D, Weiss S, Wager C and Hu H. "A longitudinal study of low-level lead exposure and impairment of renal function: Normative Aging Study". *JAMA* 1996; 275: 1177-1181.
- Fernandez F and Hilligoss D. "Improved techniques for determination of lead, cadmium and mercury in whole blood". *Atom Spectra & C.* 1994; 3 (4) : 130-131.
- Armitage P. "Statistical Methods in Medical Research" 4<sup>th</sup> edition, Blackwell Scientific Publication, London: (1997).
- El Minshawy O, Ghabrah T and El Bassuoni E. End-stage renal disease in Tabuk Area, Saudi Arabia: An epidemiological study. *Saudi J Kidney Dis Transpl.* 2014; 25(1):192-5 (ISSN: 1319-2442).
- El Minshawy O. End-stage renal disease in the El-Minia Governorate, upper Egypt: an epidemiological study. *Saudi J Kidney Dis Transpl.* 2011; 22(5):1048-54 (ISSN: 1319-2442)
- Hallan SI, Matsushita K, Sang Y et al. Age and association of kidney measures with mortality and end-stage renal disease. *JAMA.* Dec 12 2012; 308(22):2349-60.
- Friedman DJ, Kozlitina J, Genovese G, et al. Population-Based Risk Assessment of APOL1 on Renal Disease. *J Am Soc Nephrol.* 2011; 22(11):2098-105.
- Kidney Disease Statistics for the United States. National Kidney and Urologic Diseases Information Clearinghouse (NKUDIC). Available at <http://kidney.niddk.nih.gov/kudiseases/pubs/kustats/#17>. Accessed September 5, 2012.
- Scragg, R and Dryson, E. Variations in prevalence of chronic renal failure and ESRD. *N. Z. Med. J.* 1995; 104:395-97.
- Nordfors L, Luttrupp K, Carrero JJ, et al. Genetic studies in chronic kidney disease: basic concepts. *J Nephrol.* 2012; 25(2):141-9.
- Choi AI, Rodriguez RA, Bacchetti P, et al. White/black racial differences in risk of end-stage renal disease and death. *Am J Med.* 2009; 122(7):672-8.
- United States Renal Data System. Annual Data Report (2011). Available at <http://www.usrds.org/adr.aspx>. Accessed Sept 6, 2012.
- Norris KC and Agodoa LY. Unraveling the racial disparities associated with kidney disease. *Kidney Int.* Sep 2005; 68(3):914-24.
- Warren J, Pike JG and Leonard MP. Posterior urethral valves in Eastern Ontario - A 30 years perspective study. *Can J Urol.* 2004; 11(2):2210-5 (ISSN: 1195-9479).
- Rihan Z, El-Oraby M and Fouad M. Experience of chronic renal failure at Maadi Armed Forces Hospital. 1984, 1<sup>st</sup> annual congress of nephrology, Egypt.
- Hallan SI and Orth SR. Smoking is a risk factor in the progression to kidney failure. *Kidney Int.* 2011; 80(5):516-23.
- Milman N, Mathissen B and Hansen J. Blood levels of lead, cadmium and mercury in Greenland. *Trace elements and electrolytes*, 1993: 11(1),3-8.
- WHO. Cadmium. *Environmental Health Criteria*, vol. 134. Geneva: World Health Organization, 1992.
- Sampson B, Curtis J and Davis S. Survey of the blood lead and serum mercury concentration in patients in renal dialysis unit. *Nephrol. Dial. Transplant.* 1989; 4(5):375-81.



## **ETHICS OF SOCIAL CONSEQUENCES AND ISSUE OF THE PRINCIPLE OF HUMANITY IN MEDICAL ETHICS**

***Martin Gluchman, PhD***

Technical University of Kosice , Slovakia

***Jan Kalajtzidis, PhD***

University of Presov , Slovakia

---

### **Abstract**

Presented paper is going to introduce contemporary Slovak ethical theory, the ethics of social consequences and the principle of humanity in particular. The ethics of social consequences can be characterized as a contemporary ethical theory, along with its approach as a specific form of consequentialism. Non-utilitarian consequentialism (the position which the ethics of social consequences identifies itself with) is a relatively new form of consequentialism which began to accommodate itself only in the late 20<sup>th</sup> century. It is a form of consequentialism<sup>130</sup> which develops from the critique of utilitarianism (classical consequentialism). This critique comes from different sources, namely from ethical theories which don't classify themselves as consequentialist at one hand (at most times its deontology or/and ethics of virtue), but mostly from consequentialism itself.

---

**Keywords:** Ethics of social consequences, medical ethics, the principle of humanity

### **Introduction**

The ethics of social consequences can be characterized as a contemporary ethical theory, along with its approach as a specific form of consequentialism. Non-utilitarian consequentialism (the position which the ethics of social consequences identifies itself with) is a relatively new form of consequentialism which began to accommodate itself only in the late 20<sup>th</sup> century. It is a form of consequentialism<sup>131</sup> which develops from the critique of utilitarianism (classical consequentialism). This critique comes from different sources, namely from ethical theories which don't classify themselves as consequentialist at one hand (at most times its deontology or/and ethics of virtue), but mostly from consequentialism itself.

### **I.**

Ethics of social consequences can be characterized as consequentialist ethical theory with inclination to act utilitarianism and case oriented approach. The case oriented approach is acknowledged as better way of dealing with specific moral issues of everyday life. Other aspects of ethics of social consequences are: moderate subjectivity, hedonism and partial eudemonism. Even this might signalize certain similarity with utilitarianism, ethics of social consequences can't be associated with it.

---

<sup>130</sup> The term consequentialism cannot be used to entitle one complex ethical theory nowadays. In today's notion (which I identify with) this term is used mostly as a label for a group of ethical theories with similar characteristics and most importantly the same scope (focus on outcomes) - consequences.

<sup>131</sup> The term consequentialism cannot be used to entitle one complex ethical theory nowadays. In today's notion (which I identify with) this term is used mostly as a label for a group of ethical theories with similar characteristics and most importantly the same scope (focus on outcomes) - consequences.

One of the main reasons why not, is that ethics of social consequences doesn't operate with utility and rather uses the concept of positive social consequences.<sup>132</sup> Another very strong argument is, that the ethics of social consequences doesn't advocate the position of agent-neutral (as classical utilitarianism does)<sup>133</sup> and rather defend the agent-relative position. Last but not least, it is the objection against the principle of maximization which can help us to clearly separate the ethics of social consequences from classical consequentialism – utilitarianism.

But there is one similarity with utilitarianism and all of the theories that are characterized as consequentialist – consequences. As well as all of the consequentialist ethical theories, ethics of social consequences is based on consequences. Consequences are understood as an outcome of attitudes, decision making and subsequent acts of moral agent. It must be stressed out, that consequences in consequentialism are just one of the ways how to evaluate the acts. Not the only one, though the most important. Ethics of social consequences is using motives and intentions as additional criterion. Evaluation and subsequent justification of action is in ethics of social consequences based on expected consequences at the beginning – as a preliminary and informative evaluation made before the act. Then the evaluation is done *ex post* – after the act is finished and it's based on actual consequences. Thus evaluation based on expected consequences is used only to verify the decision making and moral reflection of the agent and is connected with agent motives (Kalajtzidis, 2013, pp. 167-168).

The core values of ethics of social consequences are: humanity, human dignity and moral right. Secondary, or auxiliary values closely interconnected with primary once are: responsibility and justice.<sup>134</sup>

Even the responsibility is classified as secondary value in ethics of social consequences, it is still very important topic. One of the reasons why it's interesting, is that even the notion of responsibility is widely prevalent and used, it is still defined very weakly and broadly in its ethical-philosophical notion. The legal notion of responsibility is quite wide as well but still clear.<sup>135</sup> The issue of responsibility in its moral aspect is a different story. It is not the main aim of the paper to introduce this issue, so we will just imply 3 different ways of understanding it. One of the “out of consequentialism” understandings can be found in writings of Bilasová. She claims, that responsibility (in its moral connotation) is a prerequisite of European ethos of 21<sup>st</sup> century. Responsibility of individuals, community and even institutions and countries is strongly interconnected with building of strong, democratic and safe Europe and world in general. The responsible individuals and responsible society is prerequisite of globalization in general and unification of Europe in particular (Bilasová, 2012, pp. 173-174). Entirely different notion of issue of responsibility can be in writings of

<sup>132</sup> Positive social consequences can be characterized as consequences which helps to satisfy the necessity of moral agent, social community or society as such. They are the essential condition of the “good” (Gluchman, 1994, p. 16; Gluchman, 1999, p. 18).

<sup>133</sup> Distinction between theories based on the position they hold towards the agent, comes from Philip Pettit. Pettit claims, that if we refrain from the position that rightness can be achieved only by an agent-neutral position, than we can mark even typically non-consequentialistic theories as consequentialistic (Pettit, 1997, pp.129-130).

<sup>134</sup> All of those values have been elaborated (as a values of ethics of social consequences) within writings of different authors from the field of applied and professional ethics. Within medical ethics and bioethics in the writings of Lešková Blahová (2010, 2009), within business ethics and teaching ethics in the writings of Platková Olejárová (2009, 2013) or within ethics of animals in the writings of Komenská (2013). One of the best is the collection of essays written by team of authors under supervision of Gluchman (2011).

<sup>135</sup> There are many ways of how to organize the issue of responsibility. The most basic one is to distinguish legal and moral responsibility. Then there is possibility to distinguish it with consideration of time: perspective, retrospective. Then there is a problem of action and omission. Is it okay to ascribe the responsibility only for what we did, or even for what we didn't?

Lačný. As well as Bilasová, Lačný is working with the issue of responsibility in its moral meaning but in very different way. He uses the issue of responsibility in the study of corporate social responsibility. Responsibility is understood as a liability. It can be understood as liability of company towards competition, consumers or public (Lačný, 2012, p. 40).

On one hand (in Bilasová) the responsibility is understood as an essential condition to achieve democracy and unity. The responsibility is understood in its metaphysical understanding. On the other hand (in Lačný) the responsibility is understood as an essential condition to achieve better functioning of business. The responsibility is understood as a duty of business towards society. In ethics of social consequences, the responsibility (moral responsibility) is understood at least in three primary ways. Responsibility can be understood as availability, as duty and as guaranty. Availability as an qualification of being moral agent, duty as an ability to be able to act upon required and guaranty as an ability to bear the consequences (Kalajtzidis, 2012, pp. 132-138).

We understand the humanity as protection, support and development of human life that usually brings positive social consequences. That is the reason that the protection of either own life or the lives of our relatives, friends, and on the other hand even strangers and unknown people is undoubtedly the form of behavior and acting bringing positive social consequences (Gluchman, 2008, p. 77). From the point of view of ethics of social consequences, not only the protection of life<sup>136</sup> in any form<sup>137</sup> is assessed, but even the support of own life as well as altruistic voluntarily help towards the development of unknown life (that is, according to me, even more valuable).

As the protection and whatever support of the development of human life brings us positive social consequences, people naturally tend to protect and support life in any forms that results in positive social consequences. Therefore, the idea of producing positive social consequences leads them to the protection or the support of the life of relatives and even unknown people. The reason is not only our awareness of duty to act in order to produce positive social consequences, but predominantly our compassion with suffering people and our need to help to protect and support the life. Thus, people act in this way not only voluntarily, but the reason of their will to help in keeping and supporting lives is the rate of positive social consequences in executing the humanity.

From this point of view, it means that the primary value of positive social consequences can be assign to taking care of the protection and the development of their own life. It can be mathematically expressed, for instance, with the rate/figure 1. Further we go on biological or genetic line as a source of humanity realization, i.e. taking care of the protection and the support of life, higher the value of positive social consequences resulting from our behavior and acting is. Taking care of life of our children could be specified with rate 1,25, parents 1,5, relatives from 1,75 to 2,5, friends from 3,0 to 5,0 and humanity realization in the relation to strangers and unknown people could be specified with the rate from 7,5 and higher (Gluchman, 2008, p. 78 - 79).

Gluchman states that every adult moral agent gains primary value as a human, based on the fact of his existence, but the demand on the respect of his dignity and humanity in the relation to himself, must permanently be confirmed by his acting, more specifically by the character of his acting that should be in accordance with valid and acceptable moral norms (even legal norms to some point – e.g. the right to live) or at least should not be in contrast with it (Gluchman, 1997, p. 156).

---

<sup>136</sup> Preferentially in questions of the physician – patient relationship (mainly in the questions concerning euthanasia, for instance).

<sup>137</sup> Human beings, animals, or plants.

Gluchman reasons that our acting is autonomous if we produce an acting bringing positive social consequences based just on our own free will, we help to protect and develop the life from our own self-determined belief that we are responsible for. The result is “the reward” or assessment in the form of the rate of positive social consequences resulting from our acting. The man is understood in ethics of social consequences as a free rational being able to make decisions freely and responsibly in spite of being determined by particular factors, either objective or subjective, and is able to act creatively and apply his will in practical life (Gluchman, 1994, p. 23).

According to ethics of social consequences, human beings, for instance mentally disabled individuals, have primary equivalent value of human dignity, moral equality based on their homo sapiens origin. They can try to reach the greatest positive social consequences resulting from the accepting and realizing human dignity depending on the degree of disability during their development. However, they never reach the status of moral agents as there is no potential of their moral, mental and psychical development worth of moral agents. In theoretical definition of ethics of social consequences, moral agent acts and makes decisions based on moral values, to be aware of the responsibility for particular consequences of his acting, his moral duty and of what he should do. Human beings without such competences are not able to responsibly make decision, act and do not bear the responsibility for their accomplished achievements. We cannot blame, for instance, mentally disabled and sick human for not being able to perform some act in a way we expect it from him or we cannot blame mentally disabled individuals for negative consequences resulting from his non-targeted negative activity caused by their insufficient competency and inability to being responsible for certain consequences. Though, in spite of that we approach them with respect as they are human beings fulfilling the basic criterion of the life existence (not looking at the state and quality in which particular life is). The fact that the man is not able to do something is not the reason for his condemnation and execration. We would always talk about conscious targeted activity in case of healthy, morally competent individuals, but psychically disrupted man do not act consciously, even though he makes decision by himself freely, because it's really hard to talk about conscious activity in such a human beings.

Thanks to their free will or moral freedom, the man has the possibility of autonomous acting. As we wrote earlier, further we move on biological, or genetic line from ourselves, from the help to ourselves, as a source in approaching the humanity, i.e. care of the protection and the support of our own life with the help to others, higher the value of positive social consequences resulting from our behavior and acting is. Based on mentioned degree of positive social consequences, we can state, that it would be more valuable for the man to help in protecting and developing human lives of strange and unknown people on the ground of greater value share of positive social consequences in such acting such as protection of our own life and lives of our relatives (Gluchman, 2008, p. 79). However, there appears special moral duty towards our the closest relatives, some kind of moral responsibility that partially limits such acting and prohibit our autonomous acting based on our free will in some way in order to prefer acting that is more valuable from the point of view of positive social consequences. Awareness of this moral responsibility, moral duty towards our relatives puts such an acting man into higher place regarding his overall moral maturity of his awareness.

According to ethics of social consequences, we should protect and support the life, but as Gluchman specifies, “while it's about the life minimally corresponding to qualitative criteria of human life” (Gluchman, 2008, p. 82). Well, paramedic (physician, for instance) would not harm sick moral agent who is able to live, from the point of view of the principle of humanity, in accordance with the principle of non-maleficence in comparison to the principles of ethics of social consequences, therefore he approaches the life with respect. He respects the life, because it means the good itself and therefore he tries to heal him.

Consequently, we focus our attention on the comparison of the principle of humanity with biomedical principles formulated by Tom L. Beauchamp and James F. Childress. They formulated four principles of biomedical ethics – respect for autonomy, beneficence, nonmaleficence, justice. The term *beneficence* connotes acts of mercy, kindness, and charity. Forms of beneficence also typically include altruism, love and humanity. We use beneficence to cover beneficent action more broadly, so that it includes all forms of action intended to benefit other persons. Benevolence refers to the character trait or virtue of being disposed to act for the benefit of others. Principle of beneficence refers to a statement of moral obligation to act for the benefit of others. Many acts of beneficence are not obligatory, but some forms of beneficence are obligatory (Beauchamp, Childress, 2009, p. 197). The term merging all these attributes of the principles of beneficence is the good. The good is everything that fulfills the life of the human beings with the feelings of joy, pleasure, safety, happiness, peace, comfort, social confidence and satisfaction within ethics of social consequences. The good is understood as something that helps to fulfill human dignity, agent's social adaptation, adaptation in family life, further in life at work etc. The good is one of morality criterion and the highest moral principle in the terms of ethics of social consequences at the same time (Gluchman, 1995, p. 90). Therefore we could say that moral agent aiming at the beneficence is kind, merciful and human, acts and achieves good, meaning positive social consequences. That is the aim of the existence of each moral agent living his/her own life in cooperation with other individuals in society. At the first sight, we could state that the positive social consequences consisting or performing the good in itself would correspond to the principle of beneficence in some way within the ethics of social consequences.

Beauchamp and Childress consider the principle of autonomy to be the principle of high importance within biomedical ethics. According to them, stated principle presents the autonomous individual acts freely in accordance with a self-chosen plan, analogous to the way an independent government manages its territories and establishes its policies in all the spheres of life. Authors state that a person of diminished autonomy, by contrast, is in some respect controlled by others or incapable of deliberating or acting on the basis of his or her desires and plans. For example, cognitively challenged individuals and prisoners often have diminished autonomy. They integrate two conditions as essential for autonomy: liberty (independence from controlling influences) and agency (capacity for intentional action) (Beauchamp, Childress, 2009, pp. 99-100).

According to the authors, an autonomous person who signs a consent form for a procedure without reading or understanding the form can act autonomously, but fails to do so. Of course, we could re-describe the act as one of placing the trust in one's physician, which could be an autonomous act of authorizing the physician to proceed the act. But it is not an autonomous authorization of the procedure because it is not informed, regarding the procedure. Similarly, somebody who is generally incapable of autonomous decision making can make autonomous choices sometimes. For example, some patients in mental institutions who cannot care for themselves and have been declared legally incompetent may still make some autonomous choices and decisions, such as stating preferences for meals, refusing medications and making telephone calls to their family relatives (Beauchamp, Childress, 2009, p. 100).

We tried to confront the principle of humanity within ethics of social consequences with biomedical principles of beneficence and respect for autonomy as free independent acting in relation to the protection and the development of unknown people or relatives in which the value or positive social consequences rate have been the most significant factor. The acting producing mainly positive social consequences in individual's activity is an influential measure in both principles. Now we are trying to ask how we can confront the principle of humanity in ethics of social consequences with the principle of nonmaleficence.

Beauchamp and Childress characterize the principle of nonmaleficence as a principle obliging us not to harm the others. This term has both a normative and a non-normative use. "X harmed Y" sometimes means that X wronged Y or treated Y unjustly, but it sometimes means only that X's action had an adverse effect on Y's interests. As we use these notions, wronging involves violating someone's rights, but harming need not signify such a violation. People are harmed without being wronged in attacks by disease, natural disasters, bad luck and acts by others to which the harmed person has consented. People can always be wronged without being harmed (Beauchamp, Childress, 2009, p. 152). According to Gert, the principle of nonmaleficence supports several more specific moral rules that moral agent should follow, make decisions and act. This consists the rules and paradigms such as not to kill, not to cause pain or suffering, not to incapacitate, not to cause offense and not to deprive others of the goods of life (Gert, 1988, p. 32).

Thus, we can state that we deal with the principles of favors and the support of others and their harmlessness within the relationship of the principles of nonmaleficence and the principles of beneficence. The obligations not to harm the others are sometimes more strict than the obligations to help them. If the health care provider in particular case cause very small injury (let's say, swelling after the needle injection) than we consider the obligation of the beneficence has been superior to the obligation of nonmaleficence (Davis, 1994, p. 329).  
150

Beauchamp and Childress claim that if nonmaleficence overrides beneficence in some cases, the best utilitarian outcome would be obtained by acting beneficently. If a surgeon, for instance, could save two innocent lives by killing a prisoner on death row to retrieve his heart and liver for transplantation, this outcome would have the highest net utility (according to the circumstances), but the surgeon's action would be morally indefensible (Beauchamp, Childress, 2009, p. 150). According to them, in the given example, the final consequence of overall acting would be valued positively, but the surgeon would have to act against the principles of humanity and human dignity (and also against his own will) that he should keep under all the conditions within the relationship to the life (whether the murder committing crime or human being acting good). We rather hold the view that the physician should primarily show the respect in any life form, trying to reach positive social consequences and secondarily I would look at the perspective of the contribution of the acting, existence of two innocent people in society and their moral growth, development and overall potential contribution to society based on ethics of social consequences. Truly said, prisoner sentenced to death is not perspective moral agent who has not any hope to be the contribution for the society and the potentiality of his further development.

However, if we look at the problem from the point of view of the principle of beneficence, it requires moral agents balance their advantages, risks and costs with the aim to produce the outcomes. Utility also deals with the virtue of beneficence, various forms of the care and optional beneficial ideals. These differences (making the conflicts essential) between beneficence and the respect for the autonomy appear in paternalistic requests accepting the patient's wishes or in public processes accepted for the protection or improvement of individual's health (Hanson, 2009, p. 12). Currently, the paternalism of physicians is less important in favor of patient's autonomy, respect to his/her existence and generally respect to the life of the human beings.

Even Onora O'Neill tends to the move from fully paternalistic model in medical ethics that proposes and points to the fact that this model was not sufficient to provide adequate reasoning/justification to the legitimate trust. The trust is the basic element of ideal relationship between physician and patient. That means more adequate ground for the trust presupposed the patients being in morally more equivalent relationship with the physicians and that meant they would have to be better informed and less dependent (O'Neill, 2002, p.

18). Replacement of paternalistic model by the trust means sharing the information as well as providing the consultation and in this way providing the support to patient's ability to act autonomously. Such a model of the relationship of the physician and the patient presents the best health care – on one hand, the physicians share their knowledge and opinions with the patients and on the other hand the patients are able to act in independent and autonomous way based on such an information (however it's not about a dependant relationship) (McLean, 2010, p. 10).

In this sense, we see the analogy of ethics of social consequences with the principle of nonmaleficence. The goal is not to harm in both cases. There we can see clear analogy between these theories. Specifically it's about the impartiality in relationship to providing the help and the care about the people that need our help or are at risk of their own health state or life. On one hand, ethics of social consequences accepts our effort to protect our own lives and lives of our relatives as natural-biological attribute, but on the other hand, ethics of social consequences offers the help to a stranger as valuably “more advantageous” choice as the further we move on genetic line from the care of our own life towards the care of the life of strange human beings, the greater moral value has our effort to help or preservation of life existence because it is something over our natural-biological determination.

Morality asks for respecting the autonomy of the people and for avoiding harm, but also contributing to the welfare, benefit and overall utility in society. These beneficial acts are included within the term beneficence. The principles of beneficence potentially demand much more than the principles of nonmaleficence because the agents have to take reliable steps to help the others, not just to avoid the harm. Here we can see, for example, clear analogy between active and passive form of humanity in ethics of social consequences. Whereas the active form of humanity expect from us particular kind of acting tending to the protection, eventually the support and the development of the life itself, passive form of humanity can mean for example even not acting, meaning harmlessness of other human being or for example even compassion with other human being in his/her suffering, misery, poverty, need etc. (Gluchman, 2008, p. 86). Beneficence and utility played important roles in particular ethical theories. For example, “even utilitarianism is systematically ordered following the principle of beneficence” (Parfit, 1984, p. 366).

Other principles such as beneficence and nonmaleficence help to cause some of these similar rules, such as tell the truth, respect the privacy of others, protect the confidential information, gain the patient's agreement for the treatment and, last but not least, if we are asked, we help the others to make important decisions. All of these rules are even moral obligations/duties of moral agents (in medical field – health care workers) at the same time and we can find them expressed within ethics of social consequences determination. Primarily, we should care about the patient's autonomy and his rights whereas we care about the consequences by our decisions and acting, specifically we are aiming at achieving prevalence of positive social consequences over negative ones. And we can achieve it only by the respect in relationship to the lives of all human beings. The principle of humanity shows us and encourages us to take care not just about the life of human beings but also about any other form of living life having some significant signs of life.

## **Conclusion**

We came to the conclusion and finding that the principle of humanity is related and dependent on individual biomedical principles. We did the comparison of the principle of humanity within ethics of social consequences with the principle of nonmaleficence and the principle of beneficence. Similarly we came to conclusion that the principle of respect for autonomy necessarily depends on the principle of humanity within ethics of social consequences. Gluchman stated that our acting is autonomous in specific sense. This

(autonomy) depends on the fact that how we are able to dispose with the free will and moral freedom.

The term humanity is not only the protection of life and following the effort to keep it by all means. Life as a moral value should be protected and supported in its development, if it minimally matches qualitative criteria at least. If not, we do not extend the suffering and finish the life, or rather let him die. Other case is the life of a newborn in which we can see the hope and the assumption of his mental and physical development. Therefore, from the point of view of utility, the life of newborn is more beneficial, more potential for us, for humanity, especially regarding the development of rational, cognitive and physical skills and abilities of such an individual.

Personally, we hold the view that physician should primarily show respect to any form of life, seek to do positive social consequences and secondarily, we would see the perspective of acting benefit, existence of two innocent people within society and their moral growth, development and overall potential asset for society based on ethics of social consequences. Truthfully, for instance, prisoner sentenced to death is not perspective moral agent and there is no hope for being the contribution to the society and we cannot find any potential of his further development.

Though the history of human thinking, there were times when philosophers were creating ethical theories – or philosophical systems in abstracto.<sup>138</sup> But this times are over. Today's ethical theories don't want or need to be a theory for theory, ethical theory only as topic of intellectual discussions. What we need is practical ethical theory. Practical in the meaning that it can be put in the use in everyday life, that it can help us to resolve our problems. The one of the ways how this can be achieved, is to be suitable methodological base for applied ethics. We certainly hope, that ethics of social consequences can live up to this demand.

*It is supported by the Slovak Research and Development Agency, contract No. APVV-0432-10.*

### References:

- Beauchamp, T.L., and Childress, J.F. *The Principles of Biomedical Ethics (Sixth Edition)*. Oxford: Oxford University Press, 2009.
- Bilasová, V. *Étos, dejiny, súčasnosť*. Prešov : FF PU, 2012.
- Davis, N.A. The Priority of Avoiding Harm. In: *Killing and Letting Die*. New York: Fordham University Press, p. 298 – 354, 1994.
- Gert, B. *Morality: A New Justification of Morality*. New York: Oxford University Press, 1988.
- Gluchman, V. *Angažovanosť, solidarita, zodpovednosť*. Prešov : UNIVERSUM, 1994.
- Gluchman, V. *Etika konzekvenčializmu*. Prešov: ManaCon, 1995.
- Gluchman, V. *Etika sociálnych dôsledkov v kontexte jej kritiky*. Prešov : LIM, 1999.
- Gluchman, V. *Človek a morálka*. Brno: Doplněk, 1997.
- Gluchman, V. *Etika a reflexie morálky*. Prešov: FF PU, 2008.
- Gluchman, V. and col. *Hodnoty v etike sociálnych dôsledkov*. Prešov: Grafotlač, 2011.
- Hanson, S. S. *Moral Acquaintances and Moral Decisions (Resolving Moral Conflicts in Medical Ethics)*. Dordrecht: Springer, 2009.
- Kalajtzidis, J. Ethics of social consequences as a contemporary consequentialist theory. In: *Ethics & Bioethics*, vol. 3, n. 3-4, pp. 159-171, 2013.
- Kalajtzidis, J. *Etika sociálnych dôsledkov a hospodárska etika. So zameraním na finančný sektor*. Brno : Tribun EU, 2012.

---

<sup>138</sup> Detached from reality.



- Komenská, K. Using animals for research purposes as an ethical problem. In: Animal protection and welfare. Brno : Veterinární a farmaceutická univerzita, 2013.
- Lačný, M. *Spoločenská zodpovednosť podnikov a korporatívne občianstvo – otázky a výzvy*. Prešov : Prešovská univerzita, 2012.
- Lešková Blahová, A. *Bioetika v kontextoch etiky sociálnych dôsledkov : (aplikácia zvolenej paradigmy na vybrané bioetické problémy)*. Prešov : Filozofická fakulta Prešovskej univerzity v Prešove, 2010.
- Lešková Blahová, A. Possibilities of ethics of social consequences application in bioethics contexts. In: Gluchman, V. (ed.) : Bioethics in central Europe: methodology and education. Prešov : Faculty of Arts, Prešov University in Prešov, pp. 87-99, 2009.
- McLean, S. A. M. *Autonomy, Consent and the Law*. New York: Routledge Cavendish, 2010.
- O'Neill, O. *Autonomy and Trust in Bioethics*. Cambridge: Cambridge University Press, 2002.
- Parfit, D. *Reasons and Persons*. Oxford: Oxford University Press, 1984.
- Pettit, P. The consequentialist perspective. In: M. W. Baron – P. Pettit – M. Slote: *Three methods of Ethics*. Oxford : Blackwell publishing, pp. 92-175, 1997.
- Platková Olejárová, G. *Aplikácie eticky sociálnych dôsledkov v ekonomike*. Prešov : FF PU, 2009.
- Platková Olejárová, G. – Klembarová, J. – Komenská, K. *Akademická etika: akademická sloboda a medziľudské vzťahy*. Prešov : Prešovská univerzita, 2013.

## DEVELOPMENT OF THE HEALTH CARE SYSTEM IN ADJARA NEW APPROACH TO MANAGEMENT

*Gogi Batiashvili, Prof.*

*Otar Gerzmava, Prof.*

*Roman Bolkvadze, PhD Student*

Grigol Robakidze University, Tbilisi, Georgia

---

### Abstract

The purpose of this paper is to study urgent pathology expansion peculiarities in the Autonomous Republic of Adjara, taking into account the social background of patients, and information about their working and social conditions. This paper will also study the complex valuation of preventive, curative, and aftercare medical aid potency, together with the framing and implementing of scientifically proven practical recommendations on the basis of the research results. In most cases, these diseases receive practically no conservative treatment and need urgent medical interference, yet patients do not admit themselves to hospitals in sufficient time for treatment because of possible expenses. It is without question that charges for belated treatment of urgent pathology are too high, not only for a patient's family, but for the budget of public health. This situation causes serious problems in the social and medical financing of the growing population. It should be noted that the cause for delay of medical interference is not just a financial problem, but an issue of a low literacy level, peculiarities in the flow of disease, transportation problems, etc.

---

**Keywords:** Health care; Acute care; Long term care

### Introduction

The social-economic-political situation in Georgia makes it difficult to provide the population with accessible medical aid. Additionally, it causes chronization of disease and an increased rate of complicated urgent pathology.

A particularly difficult situation is in the sphere of emergency care. Even though the state program covers urgent aid, either from the central or local budget, the majority of patients still see specialists with delay.

In order to fulfill the purpose of this paper, the following tasks were accomplished:

- Study of how medical aid is used in Adjara (based on 2000-2012 data) and the evolution of its further optimization perspectives.
- Study of the dynamics of urgent pathology according to individual regions and towns.
- Delimitation of links between social-economic, social-hygienic and other factors that have an impact of urgent pathology.
- Study of the causes of disease complications in those patients who were admitted to hospitals. Characterization of organizational measures directed to prevention and complex evolution of their effectiveness.
- Working out a proper and practical recommendation on the basis of the research results.

Peculiarities of urgent pathology in the population of Adjara takes into account age, sex, income, medical activity at work and other social-hygienic factors. With the assistance of a systemic method, a scheme has been developed for preventative, curative and aftercare

effectiveness, in cases of urgent pathology. This scheme allows for scientifically proven regional fulfillment of Public Health programs. The research results provide us with important information about peculiarities of urgent pathology expansion in the population of Adjara. The information enables researchers to evaluate the health condition of the contingent, and to pinpoint the priority problems that detain successful prevention.

The peculiarity of urgent aid for the population of Adjara has been studied both on the level of primary health care clinics and hospitals. Also studied were the main causes of belated admission in hospitals and the specific character of risk factors that have an impact on belated admission.

The principles of adequate and appropriate diagnostics and the treatment algorithm of patients with urgent pathology have been developed to be used in the process of disease prevention in this group.

### **Material and research methodology**

For the research process, materials have been taken from the following sources:

- The Ministry of Labor, Public Health and Social Affairs of Georgia and the Autonomous Republic of Adjara.
- Adjara Autonomous Republic Clinical Hospital and Batumi City Hospital.
- Medical Statistics Department and Public Health Department.

The research process used methods that include medical statistics, demographic, sociological and social-psychological approaches. The representative groups of patients were studied by specially designed questionnaire for those patients that were admitted to hospitals from 2000-2012. A total of 200 cases were documented.

A special map consisting of four parts and 40 questions had been designed for research purposes. The map addressed the study of the demographic characteristics of the inquired contingent which included their health condition, social status, evolution of social-psychological peculiarities, frequency of use of Health Care institutions before hospitalization, etc. During the research process, special attention was given to the reasons for belated hospitalization of the patient, their anamnesis, and the content of the interference and its outcome, etc.

The approach isolated items inquiring about social and household problems of the contingent as a separate block. In order to get a more trustworthy result, the information received from the regional polyclinic was compared with the data received from hospitals.

The process of working with medical documents was carried out according to different parameters: age, sex, disease diagnose date, first apply to doctor, etc. Analysis of documented materials was carried out in accordance with a special scheme, on the basis of expert evaluation. The study was carried out in accordance with appropriate criterion such as social-economic situations, the effect of risk-factors, etc.

The results of the study were tabulated with the help of modern, highly technological methods. Relative quantities ( $p$ ), average error ( $m$ ) for the evolution of plausibility of the results, and limits of credibility  $p \pm m$  95% of relative precision  $p \pm 2m$  were collected. The research was carried out in its entirety by using a highly technological mathematical methodology. The research was conducted using software that used a standard format database.

In order to determine the links between signs, we have used the method of correlation analysis ( $k_{xy}$ ). The analysis of materials was also carried out with the help of a single factor dispersion complex. While comparing the health index of patients with different sexual and age structures, we have also used the method of standardization which gives us the possibility to eliminate the impact of unequal structure in the case of index generalization.

## Results

The process of developing and constructing modern medical institutions was started in Adjara from 1930. New branches of medicine were developed that had positive effects on the improvement of medical aid for the population. The number of dispensary-policlinic establishments was increased greatly.

Table 1. Main characteristics of development Public Health services in Adjara

	1940	1950	1960	1970	1980	2012
Quantity of Doctors (of all branches)	270	514	907	793	1028	1540
Average medical staff	524	1011	2411	3049	3602	1463
Quantity of hospitals	12	26	41	39	39	18
Quantity of hospital beds	877	1157	2160	3305	3895	929
Quantity of dispensary-polyclinic establishments	100	94	75	79	73	58

By 1970, it was possible to supply almost all inhabited locality with medical aid both in the mountain and seaside zones. Serious attention was paid to providing the high-mountainous areas of Adjara with appropriate staff.

During the USSR collapse and the formation of new, independent Georgia, an economic crisis was followed by the destruction of the financial and monetary-credit system. The industry was paralyzed and the traditional economic connections were broken off. The economic problems were aggravated by internal political disagreements, inspired by social-political movements and civil war, and by application of criminal forces that naturally negatively influenced the health condition of the population.

For years, supplying hospitals with the necessary amount of beds to provide care was considered to be one of the main tasks of policy in the public health service. At the same time, less attention was paid to the technical provision of beds. The introduction of new technologies was possible only with the construction of new hospitals. According to the existing rules, the staff and technical equipment in hospitals depended on a planned number of beds what led to the opening of large hospitals. With insufficient financing, the maintenance of these hospitals became almost impossible.

As a result, nowadays, there is only a small quantity of stationary hospitals that have conditionally met modern technological standards located on the territory of Georgia. The data given in the table points to the lowest average annual loading on hospital beds, bed-delay and bed-circulation (see table).

Table 2. Hospitalization and lethality in stationary medical establishments of Adjara (2012 data)

	Parameter of hospitalization On 100 000 inhabitants	Death %	
Adjara	9214	1,6	
Mountainous Georgia	5580.4		1.9

Hospitalization rates per 100,000 population in Western Europe are three times greater than in Adjara and the USA rate is four times greater. The analysis of these data shows that the problem of bed-fund optimization is extremely acute for Adjara as well as for Georgia as a whole what is proved by the following data (see Table 3).

Table 3. Parameters of bed-fund usage in Adjara (2012 data)

	Number of Beds	Load on Beds	Delay	Circulation
Adjara	929	239	6.1	38.8
Mountainous Georgia	1784	118.7	8.6	13.7

A similar situation is seen in services. In spite of the fact that during past years the situation was appreciably improved, for the most part bed utilization is low (see Table 4).

Table 4. Efficiency of beds usage in Adjara (2000-2012 data)

		Number of beds	Load on beds	Delay on beds	Circulation on beds
2000	Batumi	139	12.78	6.84	87.46
	Keda	25	3.48	5.72	19.92
	Kobuleti	55	6.02	7.15	42.75
	Shuakhevi	25	6.16	6.52	40.44
	Khulo	15	14.93	99.60	99.60
	Adjara	259	9.93	67.61	67.61
2012	Batumi	777	264,15	6,4	41,2
	Keda	20	101,65	3,9	25,8
	Kobuleti	72	117,7	4,0	29,3
	Shuakhevi	20	106,7	4,1	25,7
	Khelvachauri	22	65,7	6,3	10,3
	Khulo	18	156,3	4,2	32,3
	Adjara	929	239,3	6,1	38,3

As the data given in the table testifies that the efficiency of bed use in Adjara is questionable what undoubtedly points to the necessity of urgent optimization of this service. It is sufficient to note that annual loading on 55 beds of a structure in a Kobuleti hospital does not exceed 19-38 days, in Keda - 18-22 days, in Shuakhevi - 45 days, etc. The situation is analogous in Batumi where annual loading on 150 beds does not exceed 100 days. It is clear that in high-mountainous areas and the resort zone enough beds should be kept and at the same time it is necessary to increase intensity of their use. For example, in the Khulo area annual loading on 20 available beds is 90-100 days. The reference of patients in other hospitals (including Batumi) is much lower than from Shuakhevi and Keda.

As it is visible, in some hospitals (for example, in Batumi, Kobuleti, Shuakhevi) the number of experts exceeds the necessary quantity or amount; that in itself reduces activity and the quality of work in branches. It is indisputable that the environment has a huge influence not only on the health of the people, but also on their reference to medical establishments.

These similar tendencies are appreciable in the A.R. of Adjara. It is important to note that such situations are quite often not caused by real rates of growth of urgent pathology and socioeconomic character, but relates to accessible medical aid when a patient's deterioration of health is accompanied by contact with the medical worker, i.e., a rural ambulance station, polyclinic, first aid or hospital. The behavior of today's patient and the members of his or her family have strongly changed. Even when medical contact fails to improve the condition of the patient, the contact does not occur with the doctor or the patient's health is seriously compromised.

The results of the carried out research testify that the existing situation has caused not only low medical usage by the population, but also fear of the expected charges, difficulty in communicating with medical establishments (absence of telephone communication, transport, roads etc.), low level of sanitary conditions, etc.

As the analysis of the data testifies, most patients will delay seeing medical specialists. In spite of the fact that the fees of such care are covered under the state program, the patients do not believe in realization of promised privileges and as a last resort they agree to hospitalization.

As the data given in the table shows, late hospitalization also strongly depends on the late understanding of the danger of diseases by the patient and members of his or her family. It frequently explains inadequate behavior of the patient, not only with separate symptoms, but also at amplification and complication of general symptoms of illness.

Serious attention should be paid to the fact that one of the most prominent diseases is acute appendicitis, simply because of the way in which the urgent operations are carried out. The share of appendectomies grows from year to year, especially in the branches of Batumi, Kobuleti and Khulo. Thus, in 27,1 % of cases (exceeding the international statistical data) patients have arrived after long delays (24 hours or more), with the diagnosis of an acute stomach. From our point of view, the situation does not correspond to the reality and is caused more by economic, rather than medical reasons. These reasons require realization of additional organizational measures for reduction of hyper diagnosed cases and correct estimation of the patient's condition by the doctor.

## Discussion

The results of our research, which concerns the knowledge level (literacy) of the population with urgent diseases, once again proves the necessity to access family and the younger generation as the main component of early preventive maintenance of such diseases. In spite of the fact that the diseases in this group do not undergo conservative treatment and require urgent intervention, most patients come to hospital with delay not so much to avoid financial expenditure, but because of a low level of knowledge (low health care literacy). The majority of patients with an urgent pathology who come to hospital with delay say that the reason of delay was not just inaccessibility or mistake of medical staff, but the carelessness of their own family members to attempt to correct a health problem by their own forces.

Despite these sets of problems, development of primary public health services in structures of the Ministry of Public Health Services of the A.R of Adjara has played a positive role and preservation of medical intervention sources in the high-mountainous areas.

This structure of primary public health services was cancelled in all regions of the country. In our opinion, the decision affects the availability of medical aid for the rural population (see Table 5).

Table 5. The structure of a network working in Georgia outpatient & polyclinical Establishments (2003 data)

	Polyclinic	Dispensary	Village Ambulance Station		Treatment centre	Institute	Women's clinic	Obstetrical centre	
			Independent	Included				Independent	included
Georgia	276	76	453	229	52	20	18	1	381
Adjara	11	0	47	0	16	375	0	1	7

As the table demonstrates, there are less village ambulance stations in Adjara than in other regions because of a reduction of high medical staff from high mountainous areas. At the same time the obstetrical-medical assistant services were not reduced and work effectively. During the research in the territory of Adjara, the regions were allocated with very different levels of late hospitalization in cases of urgent diseases.

It is necessary to note that allocation of medical services in these regions did not consider all risk factors. A number of those risks factors were not isolated which affects the current data. It is necessary to emphasize that the solution of the problem is closely connected to a combination of many risk factors which have been grouped into categories of risk.

Given the aforementioned factors, it is indisputable that to achieve improvements in health care specific principles must be examined. These principles include:

- Integrity of the system is created in which the characteristics of a complete system do not represent the mechanical unity of the properties and its elements but represent their unit interaction with new qualitative properties;
- Designing the structure of systems in which the use of the system is defined not only by action of its parts, but also properties of its structure;

- Mutual relation of structure and environment where during such interaction the system is conducted as an independent component;
- Hierarchy in which each component of the system is considered as a separate system;
- The opportunity of multilateral consideration of the system for an adequate perception of the system in which it is necessary to construct different models, each of which shows certain aspects of the system.

An increasing number of health care professionals are embracing new changes and accepting new principles of medical intervention. In any organization, it is necessary to take into account distribution of information in relationship to the hierarchical levels of hospital management because it makes the work of the chief executive more purposeful. However, in some cases the information that exceeds the framework of his or her competence could be transferred to the manager of a lower hierarchical level in public health service, especially when implementing medical measures which require the revealing of additional reserves, high effective utilization of resources, etc.

Taking into account the above, conditions resulted in a special block-scheme, i.e., a graphic depiction of measures essential for receiving results which will seriously improve prevention and appropriate treatment. Business contacts between employer and employee may enforce labor motivation and improve the quality of work. It should be noted that the studied contingent mostly consists of healthy people who were in difficult situations where their protective mechanism was weak or did not work at all. Employee sponsored health insurance is needed.

In many countries of Europe, as well as in Georgia, reforms of financing and organization of public health service are actively carried out. Similarly, work is being carried out in Adjara. The basis of the reform is accessibility to medical service and its impartial distribution among all social layers of the population. The criterion of evaluation for the reform is not based just on short-term economy of budget of Adjara, but on the main criterion of evaluation of population health conditions.

Additionally, since 2012 the main strategy of development of public health service in Adjara will be determined by the following points:

- Strengthening the role of public health service;
- Strengthening the network of first medical aid;
- Optimization of hospitals and funds for beds;
- Preparation of logistics for formation of a referral system;
- Overcoming the problems connected with lack of resources;
- Determining priorities of public health service;
- Creating the fair system of financing of public health;
- Supporting private sectors in the spheres of public health.

It is clear that multiple changes are needed and must be implemented concurrently to carry out optimization of public health service system in Adjara.

## **Conclusion**

The results of the study of service development in the Autonomous Republic of Adjara confirm that the effect of usage of existing forces is extremely low. It is noted that the spread of acute disease has increased at an extreme rate in the population of Adjara which determines the social and medical importance of this pathology. At the same time, patient's reference to doctors appreciably decreases as a result of the existing social-economic-political factors.

In the ethiopathogenesis of acute disease alongside with traditional risk factors, there are other psychological peculiarities which not only create a premorbid background, but also cause inadvisable aggravation.

Psychopathological and vegetative matters and inadequate reaction to disease has an impact on the progression of disease and the prognosis of treatment.

Personal attitude of patients has an appreciable impact on the process of rehabilitation and sometimes even determines the prognosis.

In cases of acute diseases, inadequate and in most cases belated medicamentous treatment determines belated hospitalization and inadvisable prognosis of treatment.

**References:**

WHO (May 2009). "World Health Statistics 2009". World Health Organization. Retrieved 2009-08-02.

HoggW., *et al.* (2005). "Cost savings associated with improving appropriate and reducing Inappropriate preventive care: cost-consequences analysis" *BMC Health Services Research* 5:20.

Kaiser Family Foundation. "Health Coverage & Uninsured." [www.statehealthfacts.org](http://www.statehealthfacts.org)

Garey Helen and Lorber Deborah. "Universal Mandatory Health Insurance in the Netherlands: A Model for the United States?" Commonwealth Fund, May 13, 2008.



# REMOVAL OF ARSENIC FROM AQUEOUS SOLUTION BY PHOTOCATALYTIC UV IRRADIATION

*Mahsa Jahangiri-rad, PhD Student*

Department of environmental health engineering, Tehran medical sciences branch,  
Islamic azad university, Tehran, Iran

---

## Abstract

The purpose of this research was to investigate the photocatalytic removal of arsenic from aqueous solution using UV/TiO<sub>2</sub> process in a batch system. A 120 W UV lamp with irradiation 247 nm wave length inside a quartz jacket was submerged in the reactor to provide better irradiation of water samples in the presence of TiO<sub>2</sub> nanoparticles. The optimum dosage of TiO<sub>2</sub> was obtained equal to 1 g/L, with variation TiO<sub>2</sub> dosage at constant pH and initial concentrations of arsenic. The effect of pH, contact time and initial concentration of arsenic was studied at the constant amount of TiO<sub>2</sub>(1g/L). The results showed that photocatalytic removal efficiency increased with increasing reaction time and TiO<sub>2</sub> dosage. In addition, it was found that removal efficiency of arsenic decreased by increasing initial arsenic concentration and pH. In conclusion the results showed that UV/TiO<sub>2</sub> was an effective method in removal of arsenic from aqueous solutions.

---

**Keywords:** TiO<sub>2</sub> nanoparticles, arsenic, photocatalytic reaction, aqueous solution

## Introduction

Arsenic is considered as one of the most toxic and carcinogenic elements (Basu et al., 2010). Arsenic compounds resemble in some respects those of phosphorus which occupies the same group (column) of the periodic table. Arsenic is less commonly observed in the pentavalent state, however. The most common oxidation states for arsenic are: -3 in the arsenides, such as alloy-like intermetallic compounds; and +3 in the arsenites, arsenics(III), and most organoarsenic compounds (Bellack, 1971). Arsenic occurs in natural water in organic and inorganic forms. The species of inorganic arsenic are dependent on the redox conditions and the pH. Arsenic (As (V)) dominates in oxygen-rich waters and arsenite (As (III)) in reducing environments (Edwards, 1988). When heated in air, arsenic oxidizes to arsenic trioxide; the fumes from this reaction have an odor resembling garlic. Arsenic makes up about 1.5 ppm of the Earth's crust. Soil contains 1–10 ppm of arsenic and Seawater has 1.6 ppb arsenic. Minerals with the formula MAsS and MAs<sub>2</sub> (M = Fe, Ni, Co) are the dominant commercial sources of arsenic, together with realgar (an arsenic sulfide mineral) and native arsenic. Arsenic also occurs in various organic forms in the environment (Blissen and Frimmel, 2003). Many countries and districts in Southeast Asia, such as Vietnam and Cambodia, Western area of Iran (Kurdistan rural areas) and North Eastern and South Western coast area of Taiwan have geological environments conducive to generation of high-arsenic groundwaters (Mandal and Suzuki, 2002). Widespread arsenic contamination of groundwater has led to a massive epidemic of arsenic poisoning. It is estimated that approximately 57 million people in the many parts of the world are drinking groundwater with arsenic concentrations elevated above the World Health Organization's standard of 10 parts per billion (ppb) (EPA, 2001). Due to such harmful effects of arsenic on human health, new USEPA regulation lowered the maximum contaminant level (MCL) for arsenic in

drinking water from 50 to 10  $\mu\text{g/L}$  (Sorg, 1997), therefore it is necessary to find novel technologies to access this new regulation. A large number of technologies have been examined to remove arsenic from contaminated water (Choong, Chuah, Robiah, Gregory, & Azni, 2007). Many factors such as arsenic concentrations in water, presence of other constituents in water and expenses associated with a treatment process are contributed in selection of technology (Sorg, 1997). Arsenic removal methods include coagulation and precipitation (Chen and Wilkie, 1997), membrane separation (Choong et al., 2007), ion exchange (Waypa et al., 1997) and adsorption (Awual et al., 2008; B?aba et al., 1999). Many of the waste streams contain As(III), which requires oxidation before it can be removed by common methods such as iron co-precipitation or ion exchange. Since the oxidation rate of dissolved As(III) by oxygen is extremely slow, oxidants such as chlorine, ozone or permanganate need to be used. Chlorine has traditionally been the oxidant of choice, but there are growing concerns regarding the generation of organochloride byproducts from the naturally occurring organic matter which may also be present (EPA, 2001). In this paper Photocatalytic oxidation (PCO) was achieved with the combination of UV light rays and  $\text{TiO}_2$  nanoparticles. Nanoparticles have also solely known as effective adsorbents for some organic and inorganic substances. Therefore this paper evaluates the combination process of adsorption and advanced oxidation for arsenic removal. This process creates hydroxyl radicals and super-oxide ions, which are highly reactive electrons and designed to remove arsenic in water. The effects of other factors including Initial concentration of As(III), pH and light intensity were also investigated.

### Materials and methods

$\text{TiO}_2$  nano particles were purchased from Evonik-industrial company, Germany. The purity, especial surface area (BET) and sizes of the selected nanoparticles were 99.5%,  $50 \pm 15$  and 21nm, respectively. TEM image of selected  $\text{TiO}_2$  nanoparticles is shown in figure 1.

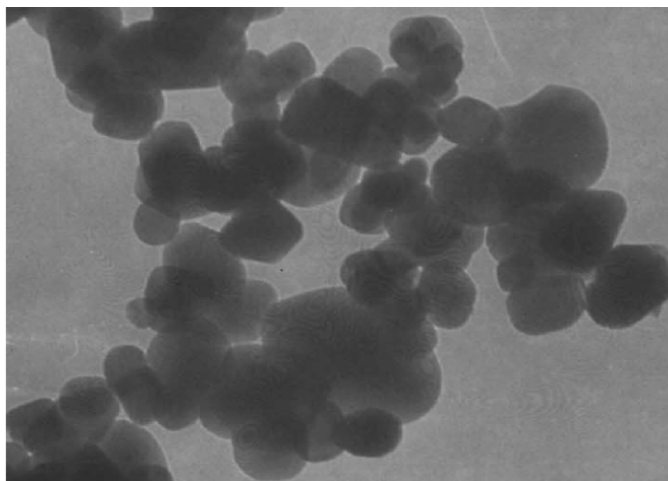


Fig 1. TEM micrograph of  $\text{TiO}_2$

A 120 W UV lamp with irradiation 247 nm wave length inside a quartz jacket was submerged in the reactor to provide better irradiation of water samples. This reactor was operated continuously, and stirred by use of a simple magnetic stirrer. The schematic diagram

of the reactor used in the experiment is shown in Fig 2. The experiments are conducted in the inner part ( glass reactor) and the outer part designed to act as a cooling bath for circulating cold water and maintaining the temperature at 20°C. A 100 mg/L arsenic stock solution was prepared from  $\text{Na}_2\text{HASO}_4 \cdot 7\text{H}_2\text{O}$ . The arsenic solutions, used in this study with 5,15 and 20 mg/L concentration, were obtained by diluting the stock solution to desired concentration in distilled water. The effects of other parameters including initial pH (3, 7 and 11), arsenic concentration, amount of titanium oxide nanoparticles (0.25, 0.5, 0.75, 1 and 1.5 mg/L) and reaction time were investigated. The batch adsorption experiments conducted for each concentration with different amounts of  $\text{TiO}_2$  nano particles. The photocatalytic reaction then undertaken by switching on UV lamp. All the experiments were done by maintaining one factor constant and changing other parameters. Samples then centrifuged (4000 rpm) and the amount of arsenic was detected by Hatch arsenic kits (Product #2822800) which its validity was approved previously (Edwards et al., 1998).The solutions pH was controlled by addition of NaOH or HCl. The pH of solution was measured using pH meter (Metrohm E520).

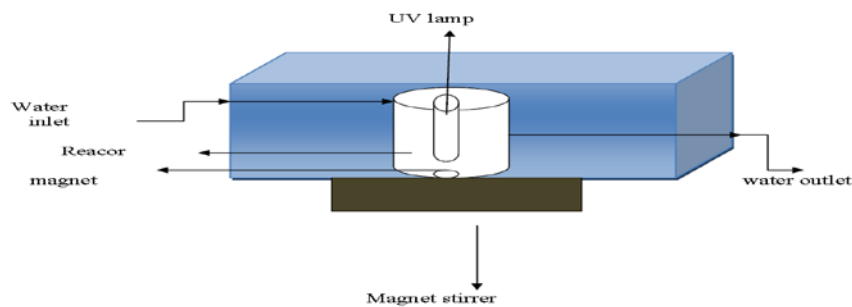


Fig 2. Schematic representation of photocatalytic reactor

## Results and discussion

### Effects of initial $\text{TiO}_2$ concentration and adsorption time

The effects of different initial  $\text{TiO}_2$  nanoparticles on arsenic removal were investigated at arsenic initial concentration of 15 mg/L and pH 7. The results obtained were shown in Fig 3. As shown in figure 3 as the adsorbent concentrations increased, arsenic removal enhanced. The initial sharp rise within 20 min of adsorption indicates the availability of readily accessible sites for adsorption. However, after 25 min a plateau is reached, indicating virtually no more sites remain available for further arsenic adsorption. Moreover, Arsenic removal increased from 35% to 68% when  $\text{TiO}_2$  nanoparticles concentration increased from 0.25 to 1 mg/L. No hefty removal in arsenic observed when adsorbent dosage increased to 1.5 mg/L. Therefore, This value was chosen for the conduction of photocatalytic experiments.

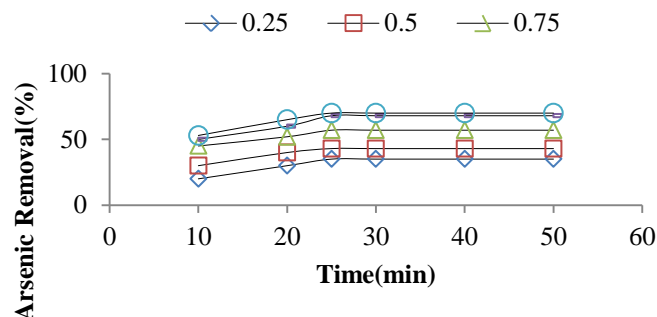
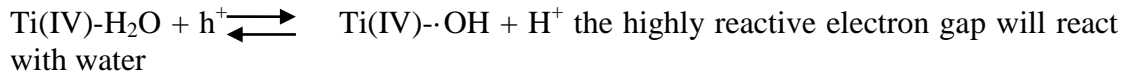
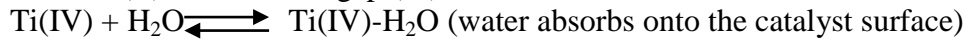
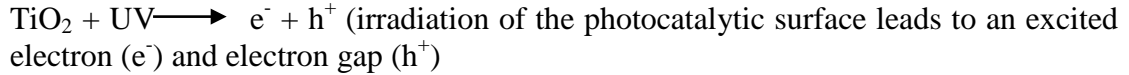


Fig 3. Effects of  $\text{TiO}_2$  concentrations on arsenic adsorption

### Effects of initial pH in photocatalytic reaction

The effects of various pH were investigated and the results are shown in Fig 4. The experiment conducted with arsenic initial concentration of 15 mg/L and 1 mg/L of TiO<sub>2</sub> nanoparticles. As shown in Fig 4 maximum removal of arsenic (95%) was observed in pH 11. In pH=3 removal efficiencies decreased. The following shows Arsenic Photocatalytic oxidation with TiO<sub>2</sub>(Aceituno et al., 2002).



The zero charge point for TiO<sub>2</sub> particles depending on their anatase form varies from 5 to 7. If the mentioned pH is higher or lower, the TiO<sub>2</sub> surface charge becomes negative and positive, respectively. As a result, TiO<sub>2</sub> surface in basic conditions has negative charge and arsenic adsorption on the negative surface of TiO<sub>2</sub> is easier in basic pH. Decreasing pH gradually increases the electrostatic repulsion between TiO<sub>2</sub> surface and arsenic, which is positively charged at pH below 5 (Hidaka et al., 2004).

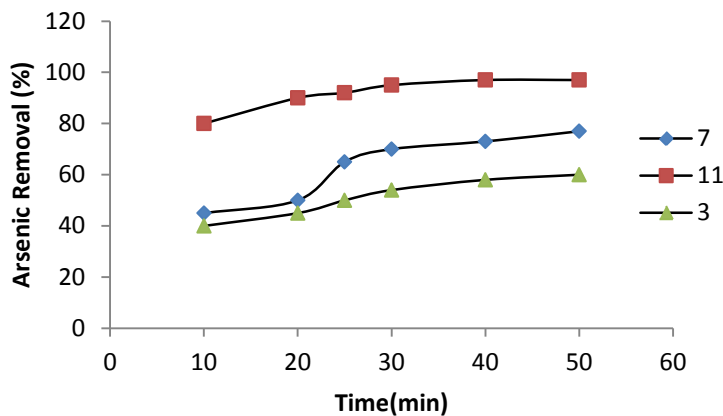


Fig 4. Effect of pH in photocatalytic reaction

### Effects of initial arsenic concentration

The effects of initial arsenic concentration of its removal in pH 11 is shown in Fig5. It is shown that initial arsenic concentration strongly affected its removal. The removal observed decreased as initial arsenic concentration gradually increased from 5 to 20 mg/L. When the amount of arsenic is small the photogenerated electrons efficiently transfer to TiO<sub>2</sub>, as the result better separation of electrons and holes would be achieved. These electrons could react with adsorbed oxygen molecular or surface Ti<sup>4+</sup> to form reactive species O<sub>2</sub><sup>0-</sup> and reactive center surface Ti<sup>3+</sup>, respectively. This suggested that the recombination was slowed and the generation of O<sub>2</sub><sup>0-</sup> and surface Ti<sup>3+</sup> was accelerated. In this situation the yield of OH<sup>0</sup> would also be increased. However higher amount of arsenic lead to its deposition which would cover more TiO<sub>2</sub> surface and hinder the contact between TiO<sub>2</sub> and arsenic, which would increase diffuse distance and decrease the amount of received photons. Furthermore, As the radical densities were equal in all the solutions, a solution with low arsenic concentration with the same hydroxyl radical rate, would have higher transformation rate in comparison to solutions with higher density rates (Lopez et al., 2006).

The obtained results indicate that the UV/TiO<sub>2</sub> process is robust to remove arsenic by 1 mg/L TiO<sub>2</sub> within 25 min. It is also proved in this research that arsenic removal using this

process follows the first order kinetics. Moreover, results showed that arsenic was better in basic pH. Removal enhanced in lower concentration of arsenic as in higher concentration it deposited on UV lamps which subsequently reduced UV penetration on TiO<sub>2</sub> area.

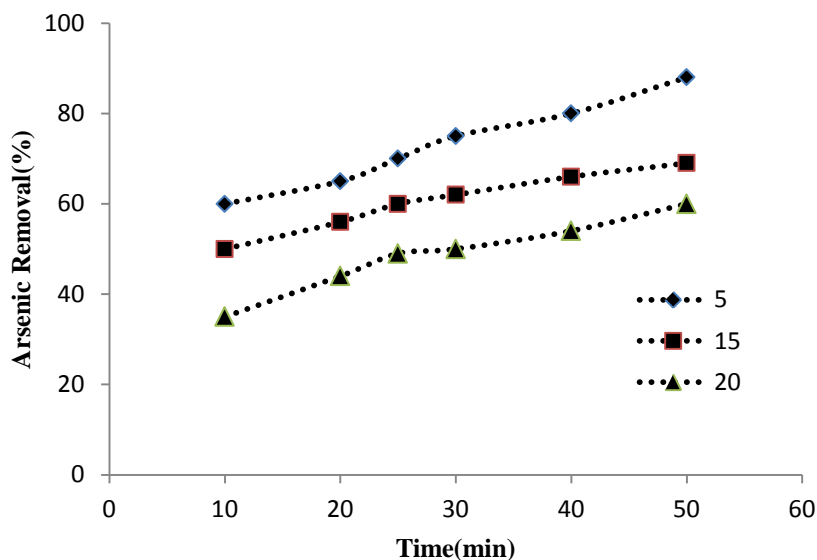


Fig 5. Effect of arsenic initial concentration in photocatalytic reaction

### References:

- Aceituno M, Stalikas CD, Lunar L, Rubio S, Pérez-Bendito D. H<sub>2</sub>O<sub>2</sub>/TiO<sub>2</sub> photocatalytic oxidation of metal, Identification of intermediates and reaction pathways. *Water Res.*2002; 36: 3582-359.
- Awual M, Urata S, Jyo A, Tamada M, Katakai A. Arsenate removal from water by a weak-base anion exchange fibrous adsorbent. *Water Res.* 2008; 42(3): 689-696.
- Baba Y, Ohguma K, Kawano K. Highly selective adsorption resins, Synthesis of chitosan derivatives and their adsorption properties for nitrate anion. *Chem J.* 1999; 7: 471- 472.
- Basu A, Mahata J, Gupta S, Giri AK. Genetic toxicology of a paradoxical human carcinogen, arsenic: a review. *Mutat Res-Rev Mutat.*2010; 488(2): 171-194.
- Bellack E. Arsenic removal from potable water. *J Am Water Works Ass.* 1971; 63(7): 454-458.
- Blissen M, Frimmel FH. Arsenic: a review. Part I: Occurrence, toxicity, speciation, mobility. *Acta Hydroch Hydrob.* 2003; 31(1): 9-18.
- Chen PY, Wilkie JA. Arsenic removal from drinking water during coagulation. *J Environ Eng.* 1997; 123: 800-805.
- Choong TSY, Chuah TG, Robiah Y, Gregory Koay FL, Azni I. Arsenic toxicity, health hazards and removal techniques from water: an overview. *Desalination.* 2007; 217(1-3):139-166.
- Edwards, M. Patel, S. McNeill, L. Chen, H. Frey, M. Eaton, AD. Antweiler, RC. Taylor, HE. (1998). Considerations in As analysis and speciation. *J Am Water Works Ass,* 90(3), 103-113.
- EPA US. National Primary Drinking Water Regulations; Arsenic and Clarifications to Compliance and New Source Contaminants Monitoring; Final Rule. *Federal Register.*2001; 6: 6976-7066.
- Hidaka H, Koike T, Kurihara T, Serpone N. Dynamics and mechanistic features in the photocatalyzed oxidation of disulfonated anionic surfactants on the surface of UV-irradiated titania nanoparticles. *New J. of Chemistry.* 2004; 28: 1100-1106.
- Lopez JL, Garcia Einshlag FS, Gonzales AL, Cappearelli E, Oliverosos TM, Braun AM.

- Hydroxyl radical photodegradation of 4-Chloro-3,5-Dinitrobenzoic acid in aqueous solution. *J. Photochem. Photobio. A: Chemistry*. 2006; 137: 177-184.
- Mandal BK, Suzuki KT. Arsenic round the world: a review. *Talanta*. 2002; 58(1): 201-235.
- Sorg TJ. Treatment technology to meet the interim primary drinking water regulations for inorganics: part 4. *J Am Water Works Ass.* 1997; 71(8): 454-466.
- Waypa JJ, Elimelech M, Hering JG. Arsenic removal by RO and NF membranes. *J Am Water Works Ass.* 1997; 89(10): 102-114.

## STOMATOLOGICAL/DENTAL FEATURES OF VITAMIN D RESISTANT AND VITAMIN D DEPENDENT RICKETS

*Vladimer Margvelashvili, Prof.*

Ivane Javakhishvili Tbilisi State University, Tbilisi, Georgia

*Iamze Taboridze, Associate Prof.*

*Lali Aladashvili, Associate Prof.*

Grigol Robakidze University, Tbilisi, Georgia

*Nino Japaridze, PhD student*

Ivane Javakhishvili Tbilisi State University, Tbilisi, Georgia

---

### Abstract

The aim of the study is an investigation of stomatological/dental characteristics at vitamin D resistant and vitamin D dependent rickets.

**Materials and methods:** The study was based on the results obtained after investigation of 13 patients 0-18 of ages with D vitamin resistant rickets (I group) and 68 patients with D vitamin-dependent rickets (II group) and 61 children of control group. Physical development, dental status and biochemical features of the mentioned children have been studied. **Methods of the study:** anamnesis, clinical examination, X-ray examination, blood and urine biochemical analysis. Quantity data were compared according to - t (student) criteria and qualitative data – according to - F (fisher) criteria. Clinical data were processed with statistical programs package SPSS 22.

**Results:** The incidence rates of insufficient physical development (physical retardation), body constitutional disorder, jaw shape, occlusion and teeth constitutional anomalies as well as delayed teeth eruption are significantly higher at vitamin D resistant rickets in comparison with vitamin D-dependent rickets and control group.

The incidence rate of enamel hypoplasia in group of vitamin D resistant rickets is 0.69, vitamin D dependent group - 0.07( $p>0.000$ ) and control group – 0,03(  $p>0.000$ ), respectively, the rate of periapical abscesses with canal orifice – in group of vitamin D-resistant rickets equals to 0.31, vitamin D-dependent group – 0.06( $p=0.054$ ), and control group - 0.10( $p=0.0457$ ), respectively, which is significantly higher in comparison with the dependent rickets and control groups.

Among the children with vitamin D resistant rickets, average caries intensity (DMF) index and average PMA index  $p>0.05$  are reliably higher in comparison with vitamin D dependent rickets.

Tubular phosphate reabsorption reveals positive correlation with DMF index –  $r =0.57$ ,  $p = 0.0380$ ; PMA index -  $r=0.84$ ,  $p=0.0003$ ; reduction of tubular phosphate reabsorption correlates with caries  $r=0.6770$ ,  $p=0.0110$ ; pulpitis  $r =0.6770$ ,  $p =0.0110$ ; periodontitis  $r=0.6770$ ,  $p=0.0110$ .

**Conclusion:** At vitamin D resistant rickets the dental anomalies, being in correlation with metabolic disorder, occur.

---

**Keywords:** Vitamin D resistant rickets, caries, dental status

## Introduction

Vitamin D resistant rickets, i.e. hereditary hypophosphatemic rickets, is characterized with metabolic changes expressed with the disorders in bone structure calcification and mineralization [11]. Reduction of serum phosphate levels is caused by the decrease of inorganic phosphate reabsorption through the kidney tubules; dental problems consist of dentin poor mineralization, dilatation of pulp cavity and root canals that might be considered as a precondition for development of periapical abscesses [7, 9].

Vitamin D dependent rickets is characterized with the following stomatologic/dental disorders: delayed teeth eruption, defects in dentin, enamel hypoplasia and dilated pulp cavity [3, 14]. There is divergence of opinions in regard to the periodontal diseases at rickets [4].

The current study is aiming at investigating dental characteristics at vitamin D resistant and vitamin D dependent rickets.

## Materials and Methods

The study was based on the results obtained after investigation of 13 patients 0-18 of ages, with D vitamin resistant rickets (I group) and 68 patients with D vitamin-dependent rickets (II group) and 61 children of control group. Control group included 61 children of the same ages. The patients were divided into 3 aging groups: group I, 0-5 years (milk-teeth occlusion), II group, 6-12 years (combined/mixed occlusion), III group, 12-18 years (permanent occlusion). According to sex and age the groups were similar: anamnesis, clinical, X-ray examination, blood and urine biochemical analysis. In group of patients with vitamin D resistant rickets – females 0-5 years of age - 4, 6-12 years - 5 and 13-18 – 4, respectively. But in group of patients with vitamin D dependent rickets – females - 40 (59%), 0-5 years of age - 30, 6-12 years - 26 and 13-18 – 12, respectively. In control group – females - 35 (57%). 0-5 years - 20, 6-12 years - 21 and 13-18 years – 20, respectively.

## Inclusion criteria

Patients affected with genetically determined vitamin D resistant and vitamin D dependent rickets, parents' informed consent on inclusion in the study.

## Exclusion criteria

The other metabolic disorders, other anomalies of skeletal system (bones-joints), systemic diseases, diabetes, autoimmune diseases.

The following factor groups have been studied: patient's age, sex, course of pregnancy, delivery, child physical development, body stately, oral cavity gate, tongue size, tongue frenulum, tongue location, palate, maxilla teeth arch shape, maxilla anterior teeth arrangement, mandibular teeth arch shape, mandible anterior teeth arrangement, occlusion, teeth shape and size anomalies, number anomalies, eruption dates, teeth hard tissue injuries, teeth caries injuries, degree of caries activity, pulpitis, periodontitis, gingivitis.

## Methods of the study

Anamnesis, clinical-, X-ray examinations, blood and urine biochemical analysis.

Average rate was detected for qualitative indexes, F criteria was used to identify the differences between the groups, but for quantitative indexes were detected the average value and standard deviation; equality of dispersions/variances were monitored by using Levene test, the differences between the groups were estimated by Student's *t* Test (for independent samples). Correlative analysis for quantitative indexes was conducted by Pearson - and for qualitative indexes by Spearman methods of analysis, data processing through mathematical software package SPSS 22 (6, 10).



## The study results

Distribution of the rates of dental features in children affected with vitamin D resistant and vitamin D dependent rickets is given in the table #1. The rates of insufficient physical development and constitutional disorders are reliably higher among the children with vitamin D resistant rickets in comparison vitamin D dependent and control groups. More frequently have been observed: low oral cavity gate, saddle-shaped upper jaw and trapezoidal lower jaw; significantly high incidence of tight constitution of frontal teeth was revealed in both upper and lower jaws; the rates of distal, open and deep occlusion, partial adentia, constitution anomalies and delayed teeth eruption are high. Microdentia was observed only in case of vitamin D resistant rickets.

Among the injuries developed in tooth hard tissues at vitamin D resistant rickets more frequent is hypoplasia; teeth (tissue) absorption was revealed only at vitamin D resistant rickets. From teeth caries injuries more frequent is dentin and milk-teeth caries; cementum caries was fixed only in case of vitamin D resistant rickets. The rate of decompensate form of caries is reliably high at vitamin D resistant rickets as well.

The rates of dilated pulp cavity, acute and chronic apical periodontitis, apical granuloma, periapical abscesses with root canal orifice or without it and root cysts are reliably higher at vitamin D resistant rickets.

Gingivitis of both mild and moderate forms were fixed in both groups and among them acute course was observed only in the group of vitamin D resistant rickets; in this group the rate of chronic, acute, local and generalized gingivitis was reliably higher in comparison of vitamin D dependent rickets - and/or control groups. At the same time, mild periodontitis with chronic course was fixed in both groups, the rate of which was reliably higher in the group of vitamin D resistant rickets.

The rate of child insufficient physical development ( $F=44.20$ ,  $p=0.0000$ ) is higher at vitamin D dependent rickets in comparison with the control group while the rate of compensate form of caries ( $F=6.57$ ,  $p=0.0116$ ) appeared to be reliably less. No reliable differences were found among the other factors.

Distribution of PMA average indexes according to the age is given on Fig. 1. PMA average index in children 0-5 of ages with vitamin D resistant rickets is reliably higher than at vitamin D dependent rickets - and/or control groups ( $t=3.39$ ,  $p=0.0019$ ;  $t=2.97$ ,  $p=0.0070$ , respectively); in children, 6-12 years of age affected with vitamin D dependent rickets PMA average index is reliably higher than in the control group ( $t=3.91$ ,  $p=0.0003$ ), no reliable difference was found between vitamin D resistant rickets and vitamin D dependent rickets ( $p>0.05$ ), in children, 13-18 of age, PMA average index is reliably higher at vitamin D resistant rickets in comparison with vitamin D dependent rickets ( $t=2.99$ ,  $p=0.0332$ ) and the control group ( $t=3.36$ ,  $p=0.0224$ ), while according to this indexes, no difference was revealed between vitamin D dependent rickets and the control groups ( $p>0.05$ ).

Distribution of DMF index average values according to the age is given on Fig 2. Average value of DMF index in 0-5 year children with vitamin D resistant rickets is unreliably higher than in the group of vitamin D dependent rickets and the control groups ( $p>0.05$ ).

This index is reliably higher in children, 6-12 years of age, with vitamin D-resistant rickets in comparison with vitamin D dependent rickets and the control group - ( $t=2.423$ ,  $p=0.0218$ ;  $t=7.672$ ,  $p=0.0000$ , respectively); in addition DMF index average magnitude is reliably higher at vitamin D dependent rickets ( $t=4.00$ ,  $p=0.0002$ ) than in the control group.

DMF average index in children 13-18 of ages at vitamin D resistant rickets is reliably higher than at vitamin D dependent rickets ( $t=3.00$ ,  $p=0.0418$ ) and the control group ( $t=6.81$ ,  $p=0.0000$ ). At the same time, DMF average index value is higher at vitamin D dependent rickets ( $t=2.03$ ,  $p=0.0500$ ) in comparison with the control group.

According to the results obtained through the correlative analysis between the DMF and PMA, average indexes and average biochemical magnitudes, phosphate tubular reabsorption (ptr)(%) showed positive correlation with DMF index -  $r = 0.57$ ,  $p = 0.0380$ ; PMA index -  $r = 0.84$ ,  $p = 0.0003$ .

Caries reveals statistically reliable positive correlation with phosphate tubular reabsorption  $r = 0.6770$ ,  $p = 0.0110$ ; partial adentia - positive - at  $1,25(\text{OH})_2\text{D}_3$  reduction -  $r = 0.617$ ,  $p = 0.0246$ ; and negative at kreatinine urine (24) reduction  $r = -0.592$ ,  $p = 0.0332$ . Pulpitis at Serum PTH-enhancement -  $r = -0.640$ ,  $p = 0.0186$  and positive at phosphate tubular reabsorption -  $r = 0.6770$ ,  $p = 0.0110$ , periodontitis - with phosphate tubular reabsorption  $r = 0.6770$ ,  $p = 0.0110$ .

## Discussion

Vitamin D resistant rickets belongs to rare pathologies characterized with bone metabolism disorder, the majority of which is progressed with injuries of various degree of skeletal, dental and parodontal systems in general [12]. Clinically the disease is revealed as retardation in physical development, body constitutional disorder, deformation of lower limbs and teeth late eruption [2].

According to the present study it was revealed that the rates of insufficient physical development, body constitutional disorder, jaw shape, occlusion and teeth constitutional anomalies as well as delayed tooth eruption are statistically higher at vitamin D resistant rickets in comparison with vitamin D dependent rickets and the control group.

At vitamin D resistant rickets the following anomalies of teeth hard tissues have been revealed: enamel hypoplasia and dentin hypomineralization [8]. According to the obtained findings, enamel hypoplasia was seen in 68% of patients that was higher than the rate for both vitamin D dependent rickets as well as control group. In its side, the rate of enamel hypoplasia is reliably higher in comparison with vitamin D dependent rickets and control group. Caries frequency is also high in the patients affected with vitamin D resistant rickets and/or dependent rickets. In addition the number of injured teeth increases with the increase of years [1].

The values of DMF and PMA indexes are relatively higher among the children with vitamin D resistant rickets in comparison with vitamin D dependent rickets. The rate of parodontal diseases increases at rickets [13].

Present study revealed the high rates of gingivitis of mild and moderate forms and mild parodontitis in both groups of rickets in comparison with the control one. At the same time, the rates of chronic, complicated/acute, local and generalized gingivitis were high in the group of vitamin D resistant rickets. In both groups the average value of PMA index is increased in comparison with the control group. This value is reliably higher at vitamin D resistant rickets in comparison with vitamin D dependent one.

Existence of periapical abscesses which is not associated with caries or trauma was indicated (5). In our materials high frequency of periapical abscesses was fixed - 4 (48%) cases with canal orifice and 4(48%) cases without it, that is reliably higher than at vitamin D resistant rickets and control group.

At D vitamin resistant rickets dental indices correlated with biochemical ones - average index of phosphate tubularuli reabsorption reveals reliable positive correlation with DMF index and PMA index. Reduction of Phosphate tubular reabsorption correlates with caries, pulpitis and periodontitis.

## Conclusion

Dental anomalies being in correlation with metabolic disorders were revealed in both vitamin D resistant rickets - and vitamin D-dependent rickets groups.

Table 1  
Statistical estimation of the factors as the signs of rickets

		Affected with vitamin D- dependent rickets			Affected with vitamin D-resistant rickets			Control			I-II		I I-III	
		I			II			III						
		abs	mean	std	abs	mean	std	abs	mean	std	F	p	F	p
Child physical development	Insufficient/retardation	33	0.49	0.503	12	0.92	0.277	2	0.03	0.180	9.23	0.0032	214.	0.0000
Oral cavity gate	Low	8	0.12	0.325	6	0.46	0.519	8	0.13	0.340	9.91	0.0023	8.27	0.0053
Upper jaw teeth arch shape	Saddle-shaped	14	0.21	0.407	6	0.46	0.519	8	0.13	0.340	3.93	0.0510	8.27	0.0053
Upper jaw frontal teeth structure /constitution	Close/tight	16	0.24	0.427	7	0.54	0.519	16	0.26	0.444	5.12	0.0263	3.91	0.0517
Lower jaw shape	Trapezoidal	12	0.18	0.384	7	0.54	0.519	11	0.18	0.388	8.62	0.0044	8.08	0.0058
Lower jaw frontal teeth construction/constitution	Close /tight	14	0.21	0.407	7	0.54	0.519	10	0.16	0.373	6.65	0.0118	9.34	0.0031
	Threams	1	0.01	0.121	4	0.31	0.480	4	0.07	0.250	19.71	0.0000	6.95	0.0103
Occlusion	Distal	5	0.07	0.263	4	0.31	0.480	4	0.07	0.250	6.39	0.0135	6.95	0.0103
	Open	5	0.07	0.263	4	0.31	0.480	10	0.16	0.373	6.39	0.0135	1.43	0.2353
	Deep	5	0.07	0.263	5	0.38	0.506	10	0.16	0.373	10.82	0.0015	3.29	0.0741
Teeth shape anomalies	Microdentia	0	0.00	0.000	2	0.15	0.376	0	0.00	0.000	12.06	0.0008	10.79	0.0016
Number anomalies	Partial adentia	1	0.01	0.121	7	0.54	0.519	2	0.03	0.180	56.10	0.0000	38.20	0.0000

	Constitutional anomalies	1	0.01	0.121	4	0.31	0.480	0	0.00	0.000	19.71	0.0000	26.38	0.0000
Eruption dates	Delayed	26	0.38	0.490	9	0.69	0.480	17	0.28	0.452	4.40	0.0392	8.78	0.0041
Tooth hard tissue injury	Teeth (tissue) absorption	0	0.00	0.000	2	0.15	0.376	0	0.00	0.000	12.06	0.0008	10.79	0.0016
	Enamel hypoplasia	5	0.07	0.263	9	0.69	0.480	2	0.03	0.180	44.60	0.0000	71.35	0.0000
Teeth caries damage	Dentin caries	32	0.47	0.503	10	0.77	0.439	29	0.48	0.504	3.99	0.0491	3.80	0.0551
	Cementum caries	0	0.00	0.000	3	0.23	0.439	0	0.00	0.000	19.90	0.0000	17.81	0.0001
	Milk-teeth caries	15	0.22	0.418	8	0.62	0.506	18	0.30	0.460	9.10	0.0034	5.02	0.0281
	Decompensate form of caries	16	0.24	0.427	8	0.62	0.506	12	0.20	0.401	8.13	0.0055	10.64	0.0017
Pulpitis	Acute	0	0.00	0.000	3	0.23	0.439	0	0.00	0.000	19.90	0.0000	17.81	0.0001
	Pulp cavity dilatation	3	0.04	0.207	9	0.69	0.480	2	0.03	0.180	64.26	0.0000	71.35	0.0000
Periodontitis	Acute apical	1	0.01	0.121	3	0.23	0.439	2	0.03	0.180	12.22	0.0008	7.13	0.0094
	Chronic apical	2	0.03	0.170	3	0.23	0.439	0	0.00	0.000	8.23	0.0053	17.81	0.0001
	Apical granuloma	8	0.12	0.325	6	0.46	0.519	10	0.16	0.373	9.91	0.0023	5.90	0.0177
	Periapical abscesses with canal orifice	4	0.06	0.237	4	0.31	0.480	6	0.10	0.300	8.17	0.0054	4.13	0.0457

		Periapical abscesses without canal orifice	2	0.03	0.170	4	0.31	0.480	4	0.07	0.250	14.17	0.0003	6.95	0.0103
		Root cyst	1	0.01	0.121	4	0.31	0.480	0	0.00	0.000	19.71	0.0000	26.38	0.0000
Gingivitis	Severity	Mild	3	0.04	0.207	6	0.46	0.519	2	0.03	0.180	24.63	0.0000	27.46	0.0000
	Course	Acute	0	0.00	0.000	2	0.15	0.376	0	0.00	0.000	12.06	0.0008	10.79	0.0016
		Chronic	3	0.04	0.207	5	0.38	0.506	2	0.03	0.180	16.82	0.0001	19.06	0.0000
		Complicated	1	0.01	0.121	2	0.15	0.376	2	0.03	0.180	6.23	0.0146	3.12	0.0817
	Distribution	Local	4	0.06	0.237	5	0.38	0.506	8	0.13	0.340	13.38	0.0005	4.94	0.0293
		Generalized	7	0.10	0.306	4	0.31	0.480	4	0.07	0.250	3.99	0.0491	6.95	0.0103
Parodontitis		Mild parodontitis	1	0.01	0.121	2	0.15	0.376	0	0.00	0.000	6.23	0.0146	10.79	0.0016
		Chronic	1	0.01	0.121	2	0.15	0.376	0	0.00	0.000	6.23	0.0146	17.81	0.0001

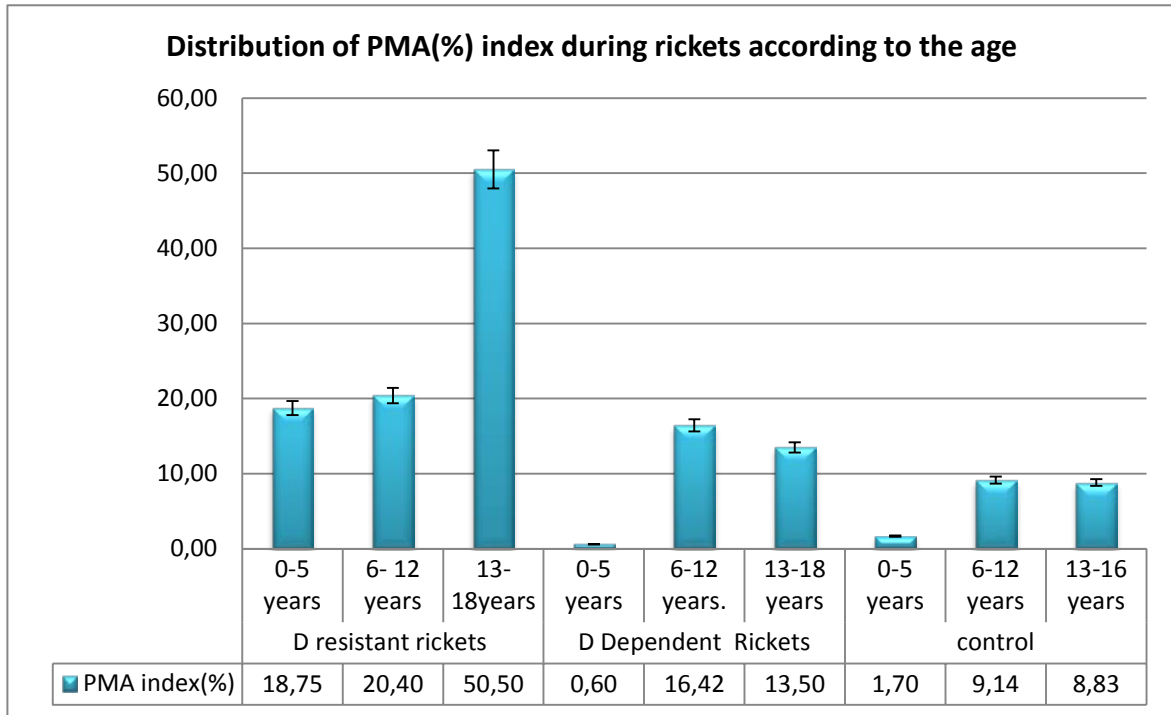


Fig., 1

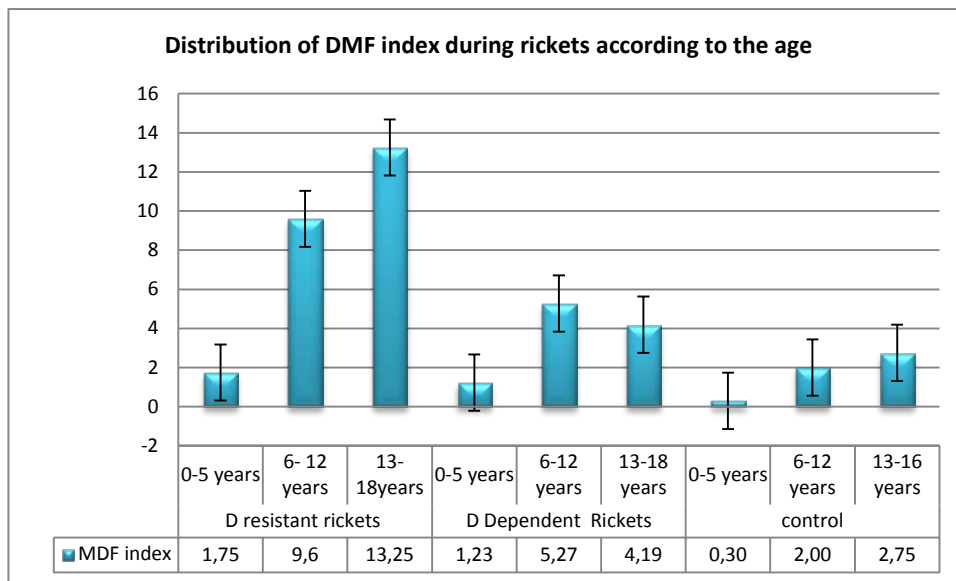


Fig. 2

**References:**

Andersen M. G. et al. Periapical and endodontic status of permanent teeth in patients with hypophosphatemic rickets //Journal of oral rehabilitation. – 2012. – T. 39. – №. 2. – C. 144-150.

Carvalho C. N. et al. Hypophosphataemic vitamin D resistant rickets: clinical, radiographic and histologic dental findings //Indian Journal of Dentistry. – 2014).

Chaussain-Miller C, Sinding C, Wolikow M, et al. Dental abnormalities in patients with familial hypophosphatemic vitamin D-resistant rickets: prevention by early treatment with 1-hydroxyvitamin D. J Pediatr 2003;142(3):324-31.

Chien H. H., Hart T. C. Do X-linked diseases affect periodontal health? //Periodontology 2000. – 2013. – T. 61. – №. 1. – C. 266-278.

- Cremonesi I. et al. X-linked hypophosphatemic rickets: Enamel abnormalities and oral clinical findings //Scanning. – 2014.
- Daren S. Starnes, Dan Yates and David Moore. The Practice of Statistics. 2010.
- Douyere D, Joseph C, Courson F Familial hypophosphatemic vitamin D-resistant rickets—prevention of spontaneous dental abscesses on primary teeth: A case report //Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontology. – 2009. – T. 107. – №. 4. – C. 525-530.
- Foster B. L., Nociti Jr F. H., Somerman M. J. The rachitic tooth //Endocrine reviews. – 2013. – T. 35. – №. 1. – C. 1-34.
- Pereira C. M. et al. Dental alterations associated with X-linked hypophosphatemic rickets //Journal of endodontics. – 2004. – T. 30. – №. 4. – C. 241-245.), ouyere D. et al.
- Petrie A, Sabin C., Medical Statistics at a Glance John Wiley & Sons, Jul 27, 2009.
- Shroff DV, McWhorter AG, Seale NS. Evaluation of aggressive pulp therapy in a population of vitamin D-resistant rickets patients: a follow-up of 4 cases. *Pediatr Dent*. 2002; 24:347–349.
- Souza MA, Soares Junior LA, Santos MA, Vaisbich MH. Dental abnormalities and oral health in patients with hypophosphatemic rickets. *Clinics (Sao Paulo)*. 2010; 65:1023–1026.
- Ye L. et al. Periodontal status of patients with hypophosphatemic rickets: a case series //Journal of periodontology. – 2011. – T. 82. – №. 11. – C. 1530-1535.
- Zambrano M. et al. Oral and dental manifestations of vitamin D-dependent rickets type I: report of a pediatric case //Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontology. – 2003. – T. 95. – №. 6. – C. 705-709.

# LINGUISTIC FEATURES OF PUN, ITS TYPOLOGY AND CLASSIFICATION

*Meri Giorgadze, PhD*

Ivane Javakhishvili Tbilisi State University, Tbilisi, Georgia

---

## Abstract

This paper focuses on the analysis of pun as one of the categories of wordplay and its manifestation in one-liner jokes in the English languages. The data of this research are all of one-liner jokes containing puns which were collected from different books and online sources. On the basis of various classifications created by different scholars and according to the research material, a new classification of pun as one of the types of wordplay is introduced and defined.

---

**Keywords:** Pun, linguistic features, one-liners, semantic structure

## Introduction:

The research deals with the study of **Linguistic Features of Pun, Its Typology and Classification**. The objective of the research is to investigate the phenomenon of pun as one of the types of wordplay and its specific features at phonological, graphological, morphological, lexical, syntactic and textual levels.

The significance of the present article lies in the factor according to which linguo-semantic structure of pun is discussed from the point of general theoretical as well as contextual-pragmatic positions. I make an attempt to answer the following questions presented in the research: What is the typology and classification of pun? What kind of specific semantic features are characteristic for pun? - These are the main issues discussed in the given article.

## 1. Pun as one of the forms of wordplay

As pointed out by Leppihalme (1997), wordplay can be based on several different features of the language(s) involved. These features are pronunciation, spelling, morphology, vocabulary or syntax.

According to its form, wordplay can be expressed in ambiguous verbal wit, orthographic peculiarities, sounds and forms of the words, in breaking the grammar rules and other linguistic factors. It should be also mentioned that context has a vital importance for the actualization of the wordplay (pun), as its pragmatic role (mainly humorous, satirical, sarcastic, etc) is fulfilled and actualized in a specific context.

It is obvious that there is not a universal definition of wordplay or pun; that the difficulties created by the complexity of wordplay and its various classifications are caused by the complexity of the phenomenon and its categories and subcategories.

As a result of different perceptions and understanding of wordplay there are also various approaches as to how it should be classified.

As it is known, there is not a consensus among scholars on the difference between a wordplay and a pun. Some scholars consider these two terms mostly interchangeable and synonymous elements (Delabastita, 1996; Gotlib, 2005). I do not follow their opinions and consider *pun* as one of the types of wordplay, whereas wordplay is classed as an umbrella



term denoting all the subclasses, such as spoonerism, malapropism, wellerism, onomatopoeia, palindrome and other linguistic units.

Thus, wordplay can be discussed in its *narrow* and *broad* senses. Wordplay in its narrow sense is equal to pun. (Delabastita, 1996; Gottlieb 2005; Redfern, 1985). Discussion of this phenomenon in a broad sense implies wordplay and its categories. Namely, from this point of view, wordplay includes pun, wellerism (tom swifty), spoonerism, anagram, palindrome, onomatopoeia, mondegreen, malapropism, oxymoron, etc.

The **pun**, also called paronomasia, is a form of wordplay which suggests two or more meanings, by exploiting multiple meanings of words, or of similar-sounding words, for an intended humorous or rhetorical effect. (Merriam-Webster Online Dictionary, 2009).

Henri Bergson defines a pun as a sentence or utterance in which "the same sentence appears to offer two independent meanings, but it is only an appearance; in reality there are two different sentences made up of different words, but claiming to be one and the same because both have the same sound". (Augarde, 2003).

As John Dryden puts it, punning is to torture one poor word *ten thousand ways*. (Dryden's quotes).

Walter Redfern succinctly says: "To pun is to treat homonyms as synonyms".

Considering the above mentioned definitions and the study of empirical material, we can come to the conclusion and say that the pun is a figure of speech which consists of a deliberate confusion of similar words or phrases for rhetorical effect, whether humorous or serious. It is a way of using the characteristics of the language(s) to cause a word, a sentence or a discourse to involve two or more different meanings. So humorous or any other effects created by puns depend upon the ambiguities words entail.

## 2. Classification of pun

As a result of the different perceptions of the pun there are also various approaches as to how it should be classified.

Regarding to the various classifications created by different scholars and discussed in our research, I formulate and introduce my own classification of pun as well as discuss its linguistic ambiguity and characteristic features on the basis of research material.

Delabastita defines wordplay (a term which he uses interchangeably with pun) as: "Wordplay is the general name for the various textual phenomenon in which structural features of the language(s) used are exploited in order to bring about a communicatively significant confrontation of two (or more) linguistics structures with more or less similar forms and more or less different meanings." (Koponen, 2004).

According to Delabastita pun is divided into four categories. (Delabastita, 1996:128):

1. Homonymy (identical sounds and spelling);
2. Homophony (identical sounds but different spellings);
3. Homography (different sounds but identical spelling);
4. Paronymy (there are slight differences in both spelling and sound).

Gottlieb considers wordplay and pun as synonymous linguistic units. His classification of a pun is the similar to Delabastita's one. He only adds and singles out three subcategories of homonymy:

1. Lexical homonymy (the central feature is single-word ambiguity);
2. Collocational homonymy (the word-in-context ambiguity is the central feature);
3. Phrasal homonymy (the clause ambiguity is the central feature).

The classification of pun worked out by the Chinese scholar Yuan Chuandao is different. He claims that the creation of pun is connected not only to the meaning and the

homophony of a word, but also to the context, manner of speech and logic. So he singles out the following types of pun:

1. Homonymic pun (identical sounds and spelling);
2. Lexical meaning pun (polysemantic words);
3. Understanding pun (through the particular context implied meaning of a sentence is revealed).
4. Figurative pun (a simile or a metaphor as its surface meaning and the figurative meaning as its deep meaning).
5. Logic pun (a rhetorical device, a kind of implication in a particular context).

As research revealed a pun is one of the most important types of wordplay. There are several subcategories of pun and consequently its various classifications and types are formulated by different scholars.

On the basis of the mentioned types and various classifications of pun and the analysis of the empirical material examples in the article, a new classification form of pun including all the main types of pun is introduced below:

1. **Lexical-Semantic Pun;**
2. **Structural-Syntactic Pun;**
3. **Structural-Semantic Pun.**

As pointed out by Raskin, pun (one of the forms of wordplay) could be considered as one of the varieties of a joke (anecdote), as its semantic structure is characterized by juxtaposition of two similar but opposite scripts. (Raskin, 1985).

As a feature of language, ambiguity occurs when a word or phrase has more than one meaning and accordingly one linguistic expression allows more than one understandings or interpretations. So ambiguity is a convention of punning, but as Attardo points out, not every ambiguous word constitutes a pun (1994:133). Mostly ambiguity focuses on its resourceful applications in the creation of jokes. Such ambiguity is therefore regarded as something to be exploited in language rather than avoided. I consider that linguistic vagueness is mostly created by means of ambiguous “elements”, such as lexical, grammatical or syntactic ones.

The lexical ambiguity of a word or phrase pertains to its having more than one meaning in the language to which the word belongs.

Semantic ambiguity happens when a sentence contains an ambiguous word or phrase - a word or phrase that has more than one meaning.

Syntactic ambiguity arises when a sentence can have two (or more) different meanings because of the structure of the sentence - its syntax.

That is why, understanding “pun” involves multiple cognitive processes, which are still to be studied from both theoretical and experimental perspectives.

### **Lexical-Semantic Pun**

Lexical ambiguity may result from **homonyms**, words spelt and pronounced in the same way but have different meanings, as well as from **homophones**, words pronounced in the same way but have different meanings or spelling and **polysemantic** words. In the following examples lexical-semantic ambiguity is clearly seen on the basis of polysemy, homonyms, homophones, etc.

One of the one –liner jokes is discussed as an example under the category of Lexical – Semantic Pun.

- (1). I like **kids**, but I don’t think I could eat a whole one.

In the given example polysemous word **kid** creates pun.

- kid** – 1. a baby; 2. a baby goat.

- (2). Where do fish learn to swim?

They learn from a **school**. (Carroll, *Alice’s Adventures in Wonderland*)

In this example, the word **school** is ambiguous because it can mean either the place kids go to learn or a group of fish. Here, ambiguity is based on a single homonym and polysemy. One has to have a certain background knowledge to guess this witty answer or in other words should know the meanings of this word (**school**).

(3). Woman: What is the brightest *idea* in the world?

Man: Your *eye, dear*.

The similar sounds of '**idea**' and '**eye, dear**' are the key points of forming the pun.

### Structural-Syntactic Pun

Structural – syntactic ambiguity arises when a complex phrase or a sentence can be parsed in more than one way. For example:

(1). - How do you stop a fish from **smelling**?

- Cut off its nose.

Two different grammatical structures of the given example can be parsed. In both cases the core importance is the word **smelling** in its different interpretations. Specifically, **smelling** means **stink** as well as **to smell**.

Therefore, it is possible for one and the same sentence with the same structure to be interpreted in different ways as in the following example.

How do you stop the fish from smelling?

1. How can we keep the fish from smelling ?
2. How can you stop the fish to smell?

(2). Man in Restaurant: I'll have two lamb chops, and make them **lean**, please.

Waiter: To which side, sir? (Clark, 1968 :191).

If the word "**lean**" is discussed as different types of parts of speech, namely as a verb or an adjective, two different grammatical structures can be parsed and interpreted. This joke involves a class ambiguity because the meaning of **lean** is ambiguous between an adjective and a verb . The difference in the meanings of **lean** represents more than just a particular word having more than one meaning; the difference helps to create a structural ambiguity. Because the two interpretations of **lean** represent separate constituent types ( in this case, parts of speech), the varying interpretations also represent different sentence structures.

In the question of the joke, the meaning of the word **lean** as an adjective implies (meat, that is not fat). In the answer of the waiter and surprise effect is created "To which side, in what position?"

(3). - Have your eyes ever been **checked**?

- No, they've always been blue.

The previous one-liner joke can be interpreted in two different ways because of ambiguous structural-syntactic constructions. The word "**checked**" creates ambiguity with its different meanings. 1. Checked – as a verb (past participle in the given example);

2. Checked – as an adjective.

### Structural-Semantic Pun

Structural - semantic ambiguity arises when a word or concept has an inherently diffuse meaning based on its widespread or informal usage. This is often the case, for example, with idiomatic expressions whose definitions are rarely or never well-defined, and are presented in the context of a larger argument that invites a certain conclusion. For instance:

(1). - Did you **take a bath**?

-No, only towels, is there one missing?

**(Take a bath)**, as a fixed phrase means to *have a shower*, but its direct, word for word translation can be - *carry away a bath, to carry it from one place to another*. This two-way perception and understanding of one and the same phrase creates ambiguity and causes laughter.

- (2). -When do parents complain because of eye pain?  
- When they **have their eye on you!**

In this specific example ambiguity is created by the phrase **(to have an eye on)**. In the question the word **eye** implies the part of the body and the answer is quite incongruous. It can be argued that this witty, unexpected answer together with the semantic ambiguity creates a structural-semantic pun.

(3). My friend has difficulty sleeping, but I can do it **with my eyes closed**. (Shmuel Breban) .

**(with (one's) eyes closed)** originally means - *unaware of the risks involved*, when it is used as a regular phrase. But here it can be understood in different way as well. Of course we sleep with our eyes closed. Two-way interpretation creates humorous effect here.

There are many syntactic constructions which, although identical in their surface structure, differ in the relations and/or syntactic functions of their components. The result is the ambiguity of such construction in discourse.

### Conclusion:

Research shows that, puns used in the examples of the given article are created on the basis of syntactic, semantic, structural and lexical ambiguity.

Regarding the subclasses and subcategories of pun and the analysis of the examples in the article, a new classification of pun is worked out and introduced :

1. **Lexical - Semantic Pun**
2. **Structural – Syntactic Pun**
3. **Structural – Semantic Pun**

According to the given research ambiguity is a convention of punning, but as Attardo points out, not every ambiguous word constitutes a pun (1994 :133). The pun has to have a context to build upon, and be opposed to.

Wordplay and its categories are changeable expressive means and together with the development of languages, new types are formed and developed. However, because of its interesting nature, wordplay and its categories will always be of the central interest for scholars.

### References:

- Attardo, S. Linguistic Theories of Humour. Berlin: Mouton de Gruyter, 1994.  
 Augarde, Tony. The Oxford Guide to Word Games, 2nd ed., Oxford: OUP, 2003.  
 Clark David Allen, Jokes, Pun and Riddles .Garden City , New York: Doubleday, 1968.  
 Delabastita, D: Wordplay and Translation: Introduction. In The Translator. Studies in Intercultural Communication. Volume 2, Number 2; special issue. Manchester: St. Jerome Publishing, 1996.  
 Gottlieb, Henrik: “You Got the Picture?” On the Polysemiotics of Subtitling Wordplay. In Gottlieb, Henrik: Screen Translation. Eight Studies in Subtitling, Dubbing and Voice-over. Copenhagen, 2005.  
 Koponen, This view is of the Hardcover edition (2003) from Oxford University Press, USA, 2004.  
 Leppihalme, R. Culture Bumps: An Empirical Approach to the Translation of Allusions. Clevedon : Multilingual Matters Ltd, 1997.  
 Raskin,V. Semantic Mechanisms of Humor (Dordrecht: Reidel) Pub, 1985.  
 Redfern, W. Puns. Oxford: Blackwell, 1985.