

THE EFFECTS OF POPULATION AGING ON RURAL AREAS. CASE STUDY: THE SĂRĂȚEL HYDROGRAPHIC BASIN (BUZĂU SUBCARPATHIANS)

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Abstract: The article is part of a wider scope of inquiries on population aging, carried out at European and global scale, concerning the impact of that process on society's functional organization. Starting from these general considerations, this study sets out to highlight the features of population aging in the Sărățel hydrographic basin, the causes that brought about this process, and the manner its effects are illustrated in the rural area. In order to quantify this process and achieve an analysis capturing its evolution, the weight of the elderly population out of the total population and the population aging index were calculated.

Key-words: demographic ageing, rural, Sărățel hydrographic basin, effects

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INTRODUCTION

Demographic aging is a highly topical issue in Europe and worldwide nowadays, in the context of concerns related to the impact of the rise in the ratio of the elderly population on society's functional organization. These are mainly grounded in the demographic forecasts, data indicating that by 2050 the global ratio of children vs. the elderly will be 1:2; the same ratio in China will be 0:7, and in Europe 0:5, where there will be twice the number of elderly people than children (Lunenfeld, 2002).

As a result of these forecasts, several studies have been carried out at European Union level, as part of several programs such as: „*The Ageing Population and Disabilities*” (Programme Acronym: LIFE QUALITY), „*Ageing, Health and Retirement in Europe*” (AGIR), „*Future Elderly Living Conditions in Europe: Who Will Care*” (FELICE), SHARE „*Survey of Health, Ageing and Retirement in Europe*”, and „*Extending quality of life in old age - the state of the art (EQUAL)*” among others (Lasch et al., 2006).

In addition, numerous studies were carried out on the impact of demographic aging on sections of social policy in various countries: France (Bourdelaïs, 1999), Holland (Balkenende, 2008), Moldova (Paladi, 2008), England and Wales (Grundy and Emily, 1991), Australia (Rowland, 2008), Canada (Fougère et al., 2009), Scotland (Loretto et al., 2006), Japan (Faruqee and Muhleisen, 2003), among others.

Population aging is foremost a demographic phenomenon, although its consequences expand much beyond the limits of demography. Demographic aging has become a topic in

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social, economic, healthcare and even cultural debate because of the scale of its effects and its persistence (Lutz et al., 2009).

In the long run, five fields of public policies have to get prepared in order to cope with this process: the pension system, healthcare and long-term care policy, workforce occupation, migration and integration policy, infrastructure development (Zaidi, 2008). In this respect, certain authors identify migration as the factor that might help balance the public pension system (Razin and Sadka, 1999; Leers et al., 2004). Others identify, in addition to the rise in the number of migrants, encouraging a rise in fertility (Bongaarts, 2004). One other view holds that identifying means to keep the elderly population active for as long as possible would also be desirable, as there are worries that jobs will outnumber the workforce (Balkenende, 2008).

Starting from these general premises, the study means to highlight the features of population aging in the Sărățel hydrographic basin, the causes that brought about the respective process, and its effects on the rural area analyzed.

METHODOLOGY

Population aging means „the process of change in the population's age group structure, in the sense of an increase in the elderly group's ratio to the detriment of the young group, as a visible and long-term trend” (Mihăescu, 2001).

Population aging is caused by a set of general factors, with particular causes - specific to certain subregions - also possibly present. The increase in life expectancy at birth and the concomitant decrease in fertility rates are the main factors responsible for an ageing population (Lunenfeld, 2002) (figure 1).

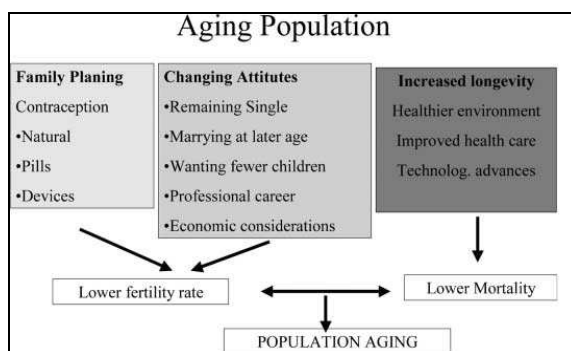


Figure 1. Elements that contribute to population aging

Source: Lunenfeld, 2002

At the same time, in addition to these general conditions, emigration plays a very important part, or it can actually be the main factor, in certain areas.

The process of demographic aging can be highlighted by means of quantitative analyses, such as the elderly population ratio of the overall population and the demographic aging index. The use of these indicators is necessary in order to capture this process in the utmost detail, but also to capture the causes that brought about a certain type of evolution. At the same time, the effects at a later time on the spatial organization of the area can be monitored.

In the area analyzed, the available data were used to calculate the ratio of the elderly population out of the total population, a method that has the benefit of analyzing a longer time span, 1930 through to the present. The second indicator analyzed covered the 1966 - 2007 time span, with the previous period only covered by remarks, as official data do not allow its quantification.

The study was carried out at village level, using the information offered by censuses, up to 2002; in order to highlight the latest trends an analysis of the evolution of the two indicators at commune level was carried out, with 2007 the latest year of reference.

CASE STUDY: THE SĂRĂȚEL HYDROGRAPHIC BASIN

The Sărățel hydrographic basin is located in South-Eastern Romania, in the Central-Northern part of Buzău County. It comprises all of 26 rural settlements, grouped in the communes of Scorțoasa, Cănești and Chiliile, and another 2 villages - Joseni and Scorșești, part of the communes of Berca and Odăile, respectively. Population is around 5,800.

Currently, in terms of population size, most villages have less than 500 residents, with only three of them topping that number - Joseni, Policiori and Scorțoasa, villages located in the central and southern part of the area, in a more accessible region, which allows for relatively rapid connections to Berca or the city of Buzău, which means the working population prefers commuting over emigration.

The basic economic activity is agriculture, subsistence farming on small-sized tracts of land, usually by means of traditional tools; there are farmers' associations, but only for those tracts of land in the plains region. Industrial activity consists in several workpoints, with several oil wells standing out in the landscape, and small-scale craftsmanship industry operations. As far as the tertiary sector is concerned, one can notice assets mainly dealing in trade are predominant, and in the past few years there have also been several „feeble” initiatives to stimulate tourism (Stoica, 2009).

The settlements in the Sărățel basin have been suffering from demographic aging; in order to highlight the scale of that process, an analysis of the evolution of *the weight of the elderly population in the total population* was carried out.

One general observation is that the weight of the population aged 65 and older has been on an uptrend since 1930 and through to the present, with a few exceptions listed below.

An analysis of the statistical data indicates that by 1930 the weight of the elderly population was low, ranging from 2.1% (Grabicina de Jos and Dâlma) to 7% (Păcurile). The majority of the settlements (62.5%) featured rates below 5%, which indicated a predominance of the young and adult population.

One could notice that by 1966 the sole village where the ratio of the population aged 65 and older had dropped was Poiana-Pletari; by 1930 this village had one of the highest values (6.9%), but by 1966 it had dropped to 4.35%. Overall, if one rules out this exception, one can notice that the minimal value registered by 1966 (7.7% in Negoșina) is higher than the maximal value of the previous year of reference. Half of all villages registered values lower than 10%, with the highest values found in Trestioara (14.2%) and Gura Văii (15.2%). The general causes for this rise in the elderly population's ratio are the negative demographic effects of World War 2 (the rise in mortality, the drop in birth rate and fertility), but also emigration to the plains region, where veterans of the two World Wars had been granted land.

In the context of heavy migration, the ratio of the elderly population continued to rise, so that by 1977 there were values higher than 20% (Chiliile, Glodu-Petcari, Gonțești, Valea Verzei). The lowest values were to be found in Cănești (11.3%) and Balta Tocila (11.7%).

In 1992, for the first time, the landmark rate of 30%, typical for a population suffering from demographic aging, is topped in 27% of the villages.

Lower values are found in the communities in the south of the basin (Joseni - 17.1% and Policiori - 17.3%), which merely registered slight increases as compared to the previous time interval (0.7% and 0.8% respectively); the highest values are found in the villages of Glodu-Petcari (33.5%) and Gonțești (46.7%) (figure 2).

The causes for the steep post - 1966 rise in the elderly population ratio were grounded in the high levels of emigration, with groups of migrants bound for outside the area analyzed, especially for Buzău, Râmnicu Sărat and the commune of Berca. To a lesser extent, they also left for Bucharest, Ploiești, Brașov or other cities at a greater distance (Stoica, 2008).

The immediate demographic effect of the departing population consisted in a negative natural growth rate and a decrease in fertility among others. In the long run, in the context where migration growth rate remained a negative one, the effects gained in scale, and the balance previously ensured by positive natural growth in rural areas was profoundly altered, so that nowadays the effects of

the socialist policy of over-emphasizing the importance of cities, and supplying them with workforce and raw materials from the rural regions, are full-blown.

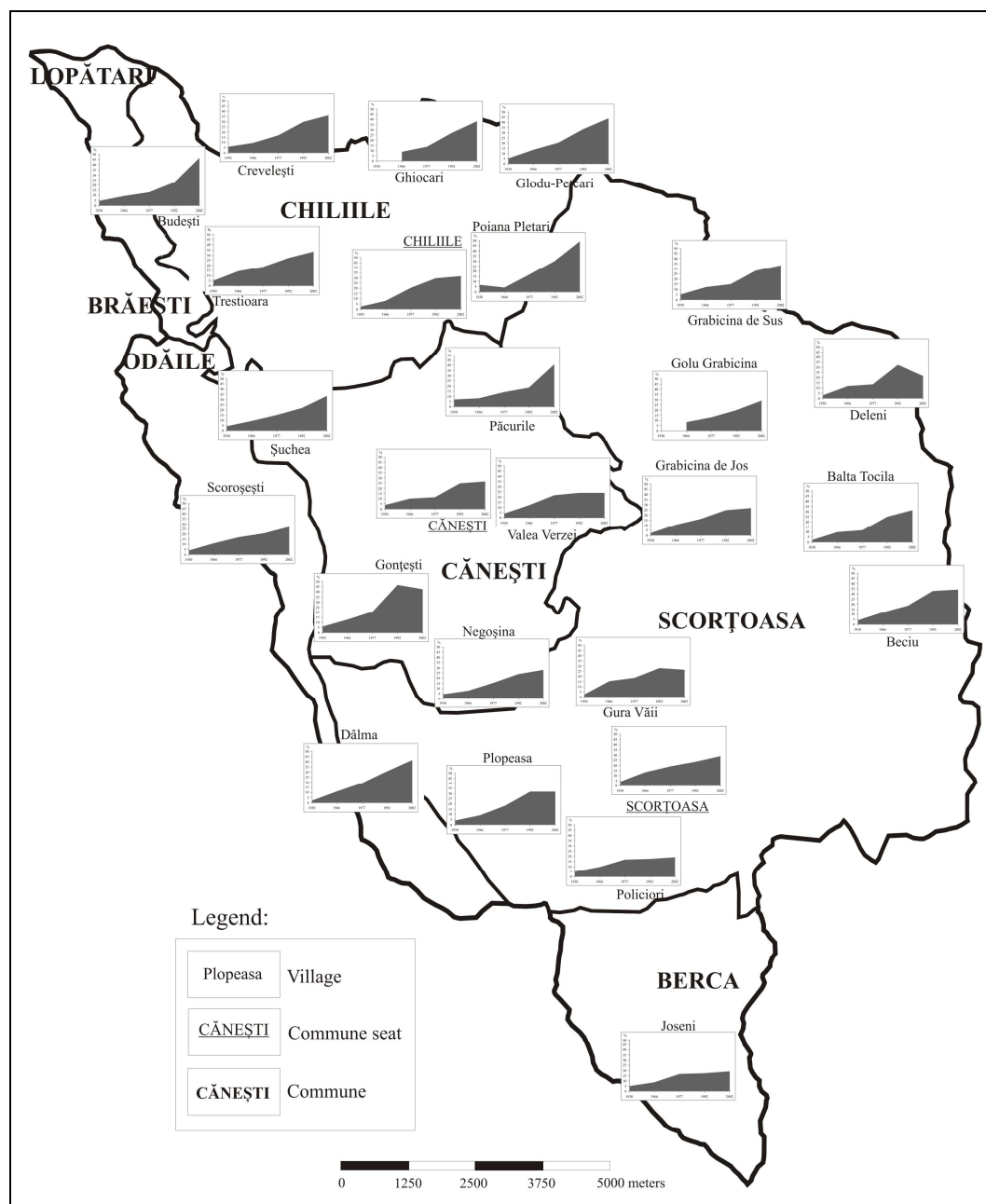


Figure 2. The evolution of the elderly population ratio in the villages in the Sărățel basin

In this context, by 2002 elderly population ratios remained high, but the overall increase is no longer as steep as that of the 1977 - 1992 interval; there were even instances where the ratio dropped - in Deleni (more than 10%), Gura-Vâii and Gontăști. Those were not signals of a demographic rebound, but they could rather be explained by a higher mortality rate. The majority

of the settlements (57.7%) featured 31% and higher ratios, the highest being in isolated villages such as Budești (46.7%) or Poiana-Pletari (49.2%). During this time interval, the villages in the southern part (Joseni and Policiori) continued to feature the lowest ratios (below 20%).

At commune level, one can notice a similar evolution, characterized by an increase in the elderly population ratio; the ratio rose to higher rates post-1992, more than 23.8%, in all three communes (figure 3).

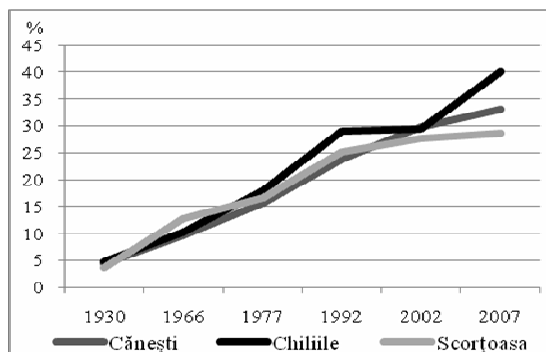


Figure 3. Elderly population ratio (1930 - 2007)

The population aging index (PAI) is calculated by matching the population aged 65 and older against that aged 14 and younger; in the area under analysis, it was calculated at village scale for the 1966 - 2002 time span, and at commune scale for the 1966 - 2007 time span.

During the time span analyze, communities in the region were characterized by an overall upward trend, whose values rose steadily, the main causes being the population's emigration (with all of its direct and indirect effects), the rise in the population's levels of education, and the drop in birth rates, among others.

Depending on the values of that index, several types of evolution can be identified:

- in half of the villages, the values reached their peaks in 1992, in then registered slight drops (Policiori) or even steep drops (Gonțești, where PAI dropped from 2,100% to 566.7%, in the context of a high mortality rate);

- settlements where the index values rose throughout the time interval analyzed, especially as a result of emigration during the communist era (Negoșina, Șucea, Chiliile, and others);

- in Cănești values were on a downtrend until 1977, with a steady rise thereafter, as a result of the increase in emigration in that interval, an increase in the ratio of people migrating from the adult age group into the elderly age group, a drop in birth rates and an increase in mortality;

- in Grabicina de Sus, a drop could be noticed by 1977, followed by a rise up to 1992, with then values reaching 0, because by 2002 the population of the village was own to 3 - adult and elderly people - which prevented the calculation of the index (table 1).

Table 1. Population aging index (1966, 1977, 1992, 2002) (%)

Data source: Censuses from 1966, 1977, 1992, 2002; processed data;

Settlements	1966	1977	1992	2002
Cănești	39,1	37,6	181,8	197,1
Gonțești	60,0	93,3	2100,0	566,7
Negoșina	26,6	50,4	170,5	194,7
Păcurile	27,9	51,4	88,5	226,7
Șucea	35,7	49,1	162,2	244,4
Valea Verzei	43,5	82,0	172,0	125,7
Chiliile	32,6	105,7	259,1	275,0
Budești	34,7	45,2	135,7	700,0

Crevelești	40,3	73,1	177,8	400,0
Ghiocari	40,0	51,6	340,0	311,1
Glodu - Petcari	59,0	88,3	440,0	800,0
Poiana Pletari	12,7	95,0	550,0	1133,3
Trestioara	61,8	78,2	233,3	280,0
Scorțoasa	49,5	90,1	181,4	160,8
Balta Tocila	35,0	45,9	215,2	206,3
Beciu	43,8	87,1	265,7	195,5
Deleni	37,9	71,4	200,0	104,0
Dâlma	44,3	93,9	266,7	554,5
Golu Grabicina	27,7	45,7	130,6	167,7
Grabicina de Jos	35,8	59,2	200,0	151,7
Grabicina de Sus	46,2	46,0	258,3	0
Gura Vâii	66,0	81,6	251,6	170,0
Plopeasa	30,2	83,2	263,8	231,4
Policiori	37,9	62,4	79,5	79,4
Joseni	31,4	71,1	100,6	104,4
Scoroșești	41,30	47,73	181,43	164,29

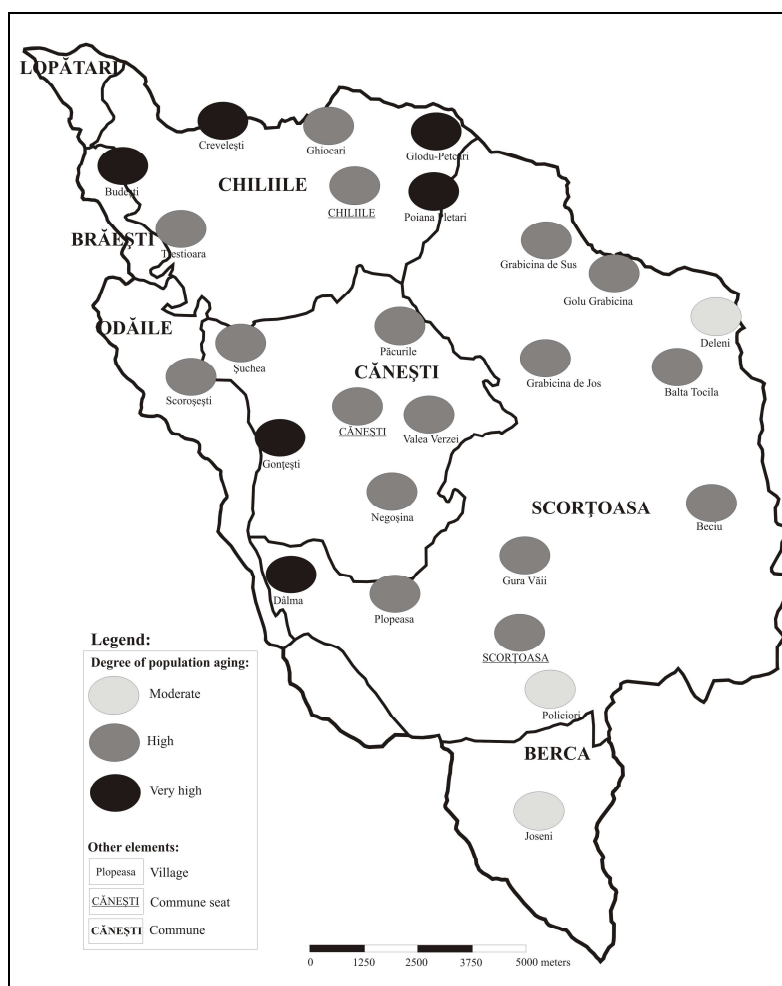


Figure 4. Degree of population aging (2002)

A net difference can be perceived between 1966 and 2002 values, in the sense that by 1966 there were some villages that had escaped the influence of this process (with values below 30%, with as low a rate as 12.7% in Poiana Pletari), but values rose steadily after that year, so that by 2002 one could say demographic aging was in a very advanced phase; moderate values (as compared to elsewhere in the area analyzed), below 10% could only be found in Policiori, Deleni and Joseni. In all other villages, values indicated an advanced and even very advanced state of population aging.

The most intense manifestations were found in the villages of Budești, Glodu-Petcari and Poiana Pletari (1,133.3%), with the last village also registering the peak value for 2002 (figure 4).

At commune scale, the highest values of the population aging index remained constant throughout the entire time interval analyzed; in the commune of Chiliile (the most isolated of communes), some of the villages suffered from depopulation and a birth rate that came close to 0 in the past few years (figure 5).

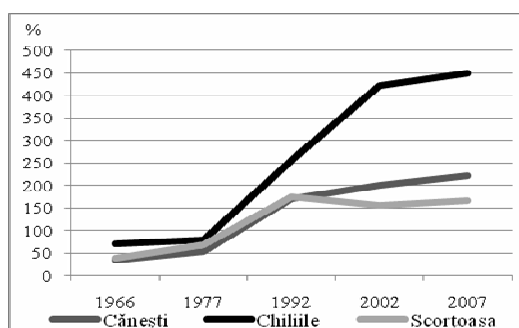


Figure 5. Population aging index (1966-2007)

RESULTS AND DISCUSSIONS

Once begun, population aging has a series of effects on the population and communities, which are visible in the functional organization of the space. In the rural areas inside the Sărățel basin this can be grouped into:

a) effects on the **population structure**, in the sense of the population growing prone to high mortality and the persistence of low birth and fertility rates, which favors in the long run, the persistence and intensification of population aging.

Nowadays, as this the values of this index rise, the population of certain villages is almost exclusively made up of elderly people (for instance Budești), which will bring about, if the current conditions persist, a severe shrinking of the population in the future, and the very disappearance of certain settlements. Even in the villages where young people are nowadays present but population aging degree is high, the youth tend to leave those settlements. One other effect is that of the rise of the inactive population ratio.

b) **shrinking of the surface of the villages**; while in the past the younger population, driven by constraints of space, would build their homes on the outskirts of the village, the reverse phenomenon occurs nowadays, in the sense that old houses are abandoned and decay after their owners' death, which causes the incorporated area to drop in the long run.

c) modifications in the **economic structure** of the settlements, by means of an increase in the ratio of uncultivated tracts of land and a decrease in livestock.

Most local residents own tracts of farmland in several distinct villages, and the elderly (as their capacity to work the land drops) work increasingly small surfaces of land, with those located farther from home the first to be abandoned. Under these conditions the local work part of the land they own close to their homes, and lease the rest, or in extreme cases lease all of it and live on their pensions or aid received from their children.

Simultaneously, there is a gradual drop in livestock, as elderly people tend to cut down on the heads of cattle they own, as they get older.

At the same time, a population in an advanced state of population aging and with an obvious trend towards an intensification of that process is much less or not at all attractive for potential investors, who need young or adult workforce, as well as a guarantee for a future renewal of the active population, in order to set up their production facilities in the respective area.

d) pressure on **public social policies**, by means of high costs related to public system pensions, as well as those related to healthcare and social assistance services.

e) most of the time, a population suffering from population aging will also have a **conservative mindset**, and will be reluctant to novelties, which means it finds it very difficult to accept innovations, even if they would ease farming tasks. At the same time, accustomed to their traditionalist way of life, the population is unaware of the potential at hand and distrusts changes that might improve their living standards. This resistance to innovation depends to a large degree to the one's education, as fieldwork analyses indicated a clear difference between the higher-and secondary-education population and those with primary education only.

CONCLUSIONS

The process of population aging influences all other sections of society, ranging from organization of the communities and through to the mindset of the local communities' representatives.

Inside the Sărățel hydrographic basin, the normal course of evolution of the villages was profoundly and irreversibly altered by intense migration to outside the area analyzed. If an analysis of the elderly population's weight of the total by 1930 indicated a young population, the situation nowadays has undergone a complete reversal. The villages where the current situation is most dramatic are those located in the northern part (Budești, Poiana Pletari, Crevelești), or along the isolated high-altitude reaches inside the basin (Păcurile). At the same time, an analysis of the population aging index indicates an upward general trend, whose values steadily rose throughout the time span analyzed.

To conclude, the process of demographic aging, acting in concert with other factors (limited accessibility, isolation, low income levels, and others) have had – and continue to have – multiple effects in the area analyzed, most of the times contributing to the deterioration of the rural area.

ACKNOWLEDGEMENTS

This work was supported by the strategic grant POSDRU/89/1.5/S/58852, 'Project Postdoctoral programme for training scientific researchers' co-financed by the European Social Found within the Sectoral Operational Programme Human Resources' Development 2007-2013 and by CNCIS – UEFISCSU, project number PNII – TD code 397/2007.

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Submitted:
May 23, 2011

Revised:
August 12, 2011

Accepted and published online
October 15, 2011