Egoism and solidarity in a shrinking society
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Summary

The article deals with some social and economic drivers of demographic change in Bulgaria. Migration of socially vulnerable groups which represents a significant proportion of overall migration can be explained by a failure of basic mechanisms of solidarity in society. Redistributive solidarity at the level of the whole society and solidarity between generations are given as an example. The case of using the EU funds in Bulgaria illustrates inequality generating territorial distribution, which cannot but reinforce migration to more urbanized regions within Bulgaria and emigration. The result is massive loss of working age generations and rapid ageing of the population. In the last section a modified simulation of income distribution in an artificial society and real empirical distributions of incomes in Bulgaria are used to illustrate some possible effects of ageing on poverty and inequality. The key conclusion is that Bulgaria needs to rethink its policies designed to serve a young, homogenous and self-reliant society. Bulgarian society is shaped by rather disruptive demographic forces generating inequality and ageing, which require a much stronger emphasis on solidarity.

This article discusses the severe shortage of solidarity in our society as one of the possible reasons for the ongoing unfavourable demographic processes: migration of vulnerable groups as a result of socio-economic coercion, declining population and high levels of poverty and inequality that may even increase further.

I am trying to argue that part of the migration processes, namely the one that gives rise to profound social problems and marginalization can be explained by a failure of the main mechanisms of solidarity in society. Dysfunction happens both on a micro level in compactly populated territorial units and at the macro level in society as a whole. To support my point, I give the example of the distribution of EU funds in Bulgaria. The EU funds are expected to produce a certain effect of social and territorial cohesion in a country whose system of redistribution is not particularly attuned to tackle poverty and inequality and which has altogether regressive components in its tax system.

The final section examines the impact of a declining and aging population on inequality and poverty. The reasoning is illustrated with a modified version of one of the models in the so-called artificial societies and with empirical data on cohort inequality in Bulgaria.

The main conclusion from the observations is that our society may need to change its priorities. To date we have created incentives for a young and socially homogeneous society in which everyone cares for themselves. Instead, it is necessary to get prepared for a society that will need strong solidarity between generations and between different social groups.
Types of solidarity and overall deficit of solidarity

Solidarity is a concept related to many other concepts that have both ethical and wider social and economic content. Solidarity is empathy, readiness to help, empathy, a force binding individuals into groups. In actions of solidarity individuals invest time, energy and other resources to help each other. Solidarity can most fruitfully be defined precisely as a preparedness to share resources with others through personal contribution to those in struggle or in need or through taxation and redistribution organized by state (Stjernø: 2005).

Solidarity is undoubtedly relevant to the preservation of a group or community. Solidarity is a form of connectedness, either direct or indirect, with the other group members. According to a well-known axiom of the theory of social networks, strong connectedness, which we can interpret as the number and intensity of relationships with other members of the group increases the duration of group membership and reduces the likelihood of leaving the group, while ties to individuals who are members of other groups tend to reduce the duration of membership (Thye and Lawler: 2002, 5).

Individuals that are highly integrated into their group through high connectivity can be said to take in some sense a central position in the group niche, while less integrated individuals occupy peripheral or marginal position. The idea of niche seems very productive in this sense. The concept was taken from environmental studies and quite fruitfully introduced in the social sciences (e.g. Popielarz & McPherson: 1995). Every group has its own spatial or structural kernel. The members of the group closer to the kernel have much more relations to other members of the group and fewer relations to members of other groups. This makes them much more likely to stay longer in the group.

Relations at micro social level, between what we might call micro generations occur mainly in the family or among close relatives. Macro-level relations are happening in society between macro generations or whole cohorts. Some call this formal or cold solidarity. Cold solidarity such as the payment of social security contributions or taxes which will benefit poorer members of society is aimed at fellow citizens whom one does not know (de Beer and Koster: 2009, 21). Relationships in small settlements or other territorial communities stand in between. They share some of the characteristics of personal microsocial intergenerational relations and some of the characteristics of the relationship between macro generations in the big society. For example, within communities people generally know each other personally and have respect for their fellows, but on the other hand, even within small communities some decisions require representation or forms of collective bargaining, which do not exist in the family.

People may depend on each other in two ways. They may depend on someone else because they cannot provide for themselves or because they need each other to achieve common goals. On this basis we can distinguish unilateral and reciprocal solidarity. Unilateral solidarity is directed from one side of the relation to the other, in reciprocal solidarity there is an element of reciprocity and mutual assistance, which may not necessarily be symmetrical (de Beer and Koster: 2009, 18).

For several decades research, especially in economics focused on cooperative behaviour dictated by self-interest. There is nothing surprising in that. The idea that the pursuit of self-interest ultimately creates the best environment for all is at the core of classical economics (remember Adam Smith’s butcher, brewer and baker, from whose regard to their own interest we can expect our dinner). Pro-social, altruistic and cooperative behaviour, however, is not necessarily associated with self-interest although it does not
exclude it (Lindenberg et al.: 2006, 24). In many expressions of solidarity, reciprocity is expected sometime in the future, but not immediately. The very definition of solidarity implies that there is no equivalence between what one gets from the group and what they contribute.

Markovski and Lawler (Markovsky and Lawler: 1994) identify two main approaches to the study of solidarity in sociology: utilitarian and emotional. The utilitarian approach is based on the presumption that the maintenance of social order rests on the fact that cooperation is a valuable asset, while the emotional approach assumes that social order is created and maintained by affective ties between individuals in a group.

It is well known that the assumption of maximization of self-interest leads to serious contradictions with empirical data on the behaviour of individuals and the processes that occur in real markets and creates paradoxes. To resolve the paradoxes related to the propensity to cooperate and achieve social optimal solutions some researchers allowed for a selfish form of the sense of fairness (Fehr and Schmidt: 1999, 817). According to this theory, some individuals do care about justice. It is known, however, that the altruistic individuals are not particularly competitive in a selfish environment, which means that even if they somehow appear they are always in danger of disappearing again.

The selfish sense of justice as opposed to the altruistic is modelled as egocentric intolerance to injustice. This apparent oxymoron mean that individuals are very sensitive not only to the amount of personal benefits, but also to whether they are fair, while they do not care about injustice among other member of society. This is an important modification of the classical utilitarian model in which individuals simply seek to maximize some utility function without caring whether what they get is fair, i.e. without making comparisons with what others receive. Those who are fair in egocentric sense, unlike utilitarian individuals who are largely indifferent to justice, are willing to suffer serious losses in order to punish someone for the injustice committed against them.

It can be demonstrated by empirical examples that in economics it is not difficult to simulate situations where a single selfish player is able to make behave selfishly otherwise altruistic-minded individuals. A typical case is the refusal to contribute to a public good by a single individual, which leads to refusal of all others who are generally very interested in the provision of this specific good. But there are also examples of the opposite - a small number of altruistic-minded individuals may, under certain environmental conditions turn selfish individuals to altruistic behaviour (Fehr and Schmidt: 1999, 826). After all whether equilibrium will be reached in which individuals ready to cooperate or selfish individuals will dominate depends on the specific parameters of the economic (or ecological) environment.

**Money begets money: Redistributive (allocative) solidarity in the use of EU funds**

When we talk about the scale of the whole economy processes that occur at the local level are limited by the framework of the rules in the big society, which predefines at macro level set the possible paths to be followed.

I will look at three such mechanisms at macro level: the allocation of EU funds the equalization grant to municipalities and grants to municipalities from the state for education and health care. The distribution of EU funds is expected to have an overall cohesive effect, i.e. to reduce various types of inequalities, which leads to a society with less difference in opportunities and actual life
trajectories. In fact as far as EU funds are concerned there always remains some ambiguity in their top priorities. Besides seeking cohesion effect a general stimulus for the economy is also defined as an objective. The presumption that these two goals work in the same direction is not easy to support by conclusive empirical evidence.

For the purposes of this analysis I used the full database of projects financed by EU funds since Bulgaria’s accession to the EU in 2007 to the third quarter of 2012. Projects in the database were divided into two categories: a) projects implemented at the municipal level and b) projects implemented at a higher territorial level. The latter category includes projects implemented at the district level, at the level of planning regions and the highest sub-national level, including two macro regions - a) Southwest and South-Central Bulgaria and b) North and South-Eastern Bulgaria.

Under a slightly different specification municipalities can be divided into those that have Roma population above and below a certain threshold: 4.5% which is the approximate average share of the population officially identifying themselves as Roma. The analysis again shows that municipalities with a higher proportion of the Roma population receive less money per capita than those with a lower proportion of the Roma population. The difference is not statistically significant, but what is apparent is that there is no trace of any targeted policy to support the development of settlements with marginalized minority population.
On the other hand transfers from the central government to municipalities for delegated activities and the general equalization subsidy perform a cohesive function (as would be expected), though it is weak compared to the redistribution occurring in other EU countries. Education has the largest equalizing effect.

Again, we can take the example of Roma and Turkish population, which often live in communities with low own revenues and higher transfers from the central government. This is due to some extent to the fact that municipalities inhabited by Roma and Turks have a larger share of the school-age population. Especially the Roma population is significantly younger than the Bulgarian, so it is normal to expect a higher proportion of students. But the large proportion of Roma dropouts reduces the size of the transfer to the municipalities, because no statutory grants are provided to reintegrate dropouts in the school system.
The allocation of European funding per capita follows an approximately exponential distribution (with a large tail) and most municipalities (typically around 140, and among them those that are lagging behind in their development) received similar amounts in the low range, about 60 other municipalities receive medium-sized amounts per capita, while the other (also about 60) produce very high amounts. The last group includes major cities and some of the richest municipalities in the country with very high own revenues. Some would say that this situation is natural from an economic point of view. The market would probably produce a very similar distribution. The question then is how a cohesion effect can emerge, given that public investment only strengthens market signals and actually accelerates the concentration of population in a few metropolitan areas.
Looking at the data about the use of EU funds since Bulgaria joined the EU in 2007 until the end of 2012 it looks very likely that poorer municipalities will hardly get a fairer per capita funding without a targeted territorial approach and a strong regional policy, which are missing in Bulgaria. This leads to increasing territorial imbalances and builds on economic pressure for further concentration of the population.

**Inequality and poverty in a shrinking society: lessons from the study of artificial societies**

In this section I use a popular model taken from the so-called artificial societies, i.e. simulated communities with relatively simple patterns of behaviour. Recently agent-based modelling entered the field of sociology (Squazzoni: 2012). The great advantage of agent-based modelling is in demonstrating how seemingly simple patterns of individual behaviour can lead to complex outcomes at a macro level. The basic assumption of agent-based modelling is that people's behaviour is a result of decisions and choices based on operational rules and norms including a random component that is subject to stochastic modelling (Burch: 2003, 21). A significant resource of ready-made and tested models has accumulated already, which some researchers believe should be given preference, after making the necessary modifications, to building entirely new models (Doran: 2003, 220). In this analysis I have followed their advice.
It is important to emphasize that simulations support the fundamental understanding of certain process, rather than a detailed reproduction of reality. Artificial societies need not necessarily resemble today's society in order to be able to reveal the forces shaping the reality we observe. In classical models of artificial societies, for example, the area on which the action unfolds is a rectangular grid of equal size cells, similar to cellular automata.

Computer simulations using artificial agents have long been used in studying the patterns of migration and reproduction of the population. In more recent simulations even different cultural components of intergenerational level, norms and values attitudes appear tractable by using suitable simulations (Billari, Ongaro and Prskawetz: 2003, 5-6).

Recent research in artificial societies is turning to full-fledged micro-simulation using data about people and households that can shed light on changes in demographics and contribute to explaining or even to predicting the social and economic situation in different regions and in the country as a whole. The simplest micro-simulations are adaptations and extensions to existing models. It is common practice in the growing literature on artificial societies as creation of new actors and modelling of new nuances in behaviour is a labour intensive task. Possibilities of integrating micro-simulation with real, geographically referenced data are also being developed.

Simulation in developing the theory of artificial societies actually shows how many of the known social phenomena can be explained by random processes. This means that many of the known "merits" in society are actually instances of luck. Even though these episodes may primarily have taken place long ago, even in previous generations, the results are stable and even increasing in a society that does not have in place mechanisms to constantly equalize chances.

It is the Ecclesiastes who first noticed the deep wisdom that those who succeed are those who were lucky, which is the reason why success should not be considered morally deserved: „I returned, and saw under the sun, that the race is not to the swift, nor the battle to the strong, neither yet bread to the wise, nor yet riches to men of understanding, nor yet favour to men of skill; but time and chance happeneth to them all.“ (Ecclesiastes 9:11).

The model Distribution of Wealth (Wilenski: 1998) is an extension of the classical model Sugarscape developed by Epstein and Axtel (Epstein and Axtel: 1996). The model features a population using a limited resource in a two-dimensional space. The model has some environmental parameters: land fertility, producing the only economic resource in this artificial society, the share of the best land, the time for land recovery after harvesting.

Moreover, the model has the inbuilt option to adjust average life expectancy. The life span of each individual is determined by a random number generator setting the main characteristics of the starting population. Finally, the model has built-in variable that characterizes the "needs" or "necessary consumption" of each individual. Individuals with greater needs require more resources to survive.

The model lacks mechanisms for inheritance - new individuals are "born" with the same chance in every respect. There are also no parameters binding accumulated wealth or income after each cycle to the reproductive chances of individuals. Furthermore, the reduced resources of certain individual do not affect his ability to access new resources. It can be assumed that these shortcomings of the model tipped the
scales in favour of a more egalitarian distribution. On the other hand the model does not incorporate any mechanism for redistribution, which in turn tilts the scales in favour of a more unequal distribution.

For the purposes of this analysis, I used a slightly modified version of the model. I used stylized parameters resembling some demographics features of Bulgaria. This allows identifying important thresholds in the process of population migration and resulting changes in the social and age structure.

I changed the distribution of life expectancy using a normal distribution around a mean age close to the life expectancy in Bulgaria at the moment. The original model used a uniform distribution over the entire lifespan (from minimum to maximum expected age). I also changed the distribution of the distance at which individuals "see" when choosing where to go. "Vision" in this artificial society can be seen as a feature uniting all individual abilities that are ‘innate’, but some of them could have been obtained without affecting the main conclusions. Again I used the normal distribution with parameters that reflect more realistically the distribution of capabilities.

Finally I changed the division of individuals into groups according to their wealth, and used the median rather than the average or maximum, in order to construct the group of the poor according to the official definition of Eurostat, which includes those with income below 60% of median). I called this group ‘very poor’. The next group has a wealth from 60% of the median to the median itself. I call them ‘poor’. The ‘middle class’ has wealth from the median to 3 times the median , and the very rich - more than three times the median . Certainly the Eurostat definition of poverty refers to income in a certain period, while in the simulation wealth refers to everything that an individual has accumulated by the end of a certain period (i.e. precisely what we call ‘wealth’). The division is quite arbitrary, because simulation does not actually distinguish between the two categories. Wealth is accumulated as a result of numerous individual steps (stages or episodes). At each round the notion of income, i.e. change in wealth during the round, can be defined, but there is nothing wrong in taking an arbitrary number of stages as a period for reporting income, the same way a number of weeks, days or hours form the period for reporting income in real economic statistics.

So in reality the difference between wealth and income is partly a product of a particular conventional definition. Either way, the strength of artificial societies is not in complete realism, but in the identification of deep patterns which, although primitive (or precisely because they are primitive) show us some important aspects of reality.

Figure 5 shows the distribution of wealth in a society with large population after a sufficient number of cycles to obtain equilibrium. From left to right we have the group of the very poor, followed by the group of the poor, the “middle class” and the rich.
Figure 5. Change of wealth distribution in time in a society with big population, modified “Wealth distribution” model.

Figure 6 shows the Gini index over time for the same simulation. The Gini Index settles around 50 after the initial sharp rise from a randomly and relatively homogenously distributed wealth.

Figure 6. GINI index with big population in the ‘Wealth distribution’ model.

The share of the different social groups in this simulation also rapidly reaches stable ratios (Figure 7). At the left of Figure 7 we see share of people with wealth below 60% of the median, which corresponds to the European definition of poverty risk.

Figure 7. Share of different social groups in a society with big population, ‘Wealth distribution’ model.

The poverty rate in this model is oscillating at slightly more than 30% compared to 22% -23% in Bulgaria. The Gini Index is around 50%. The high degree of inequality in this model is clearly visible from the Lorenz curve as well (Figure 8). It is interesting to point out that the outcomes of the model represent
roughly the poverty and inequality that would arise in any European country, even in the richest, if there were no social transfers.

Figure 8. Lorenz curve of wealth distribution in a society with big population after 100 cycles (enough to reach an equilibrium state), 'Wealth distribution' model.

As expected with fewer individuals outcomes become very unstable and high levels of inequality occur much faster. Summary indicators of inequality are similar to those found in a large population, but the distribution by social groups (classes) is slightly more in favour of the extreme groups – the very poor and the very rich.

Figure 9. Share of different social groups in a society with small population, modified 'Wealth distribution' model.

Figures 9 and 10 illustrate the simulation with a quarter of the maximum number of individuals and a slightly higher level of “education” or “capability” (maximum distance of vision equal to 6). It turns out that if too few individuals inhabit a territory (or an economy), contrary to intuition this can lead even in very simple models to a more unequal distribution of wealth, rather than more equal.
In the present model, individuals do not produce; they just use according to their ability and luck, what the environment or “nature” produces. Overall, this is a very simple economy of gatherers. There is no reason to believe, however, that the distribution of wealth in the model will distribute more evenly with the insertion of a production function. Historically there is no evidence that making the economy more complicated will necessarily lead to equalization of opportunity and outcome.

In other models it can be seen that the benefit of altruistic or selfish behaviour for survival is not defined once and forever but depends on the fine tuning of the environment. There are worlds (societies) in which altruists survive and prosper, while other worlds (societies) are dominated by the selfish. The current Bulgarian society has created and reshaped its institutions in ways that favour selfish behaviour and restrict solidarity.

**Inequality and poverty in an ageing population: a glimpse of some empirical data from today’s Bulgaria**

One of the main issues in the aging society is whether greater income disparities exist among the older than among the younger. In Bulgaria there is no doubt that the older population is poorer than the younger. With increasing age dependency this difference may deepen as the replacement rate at retirement will be difficult to maintain.

There are at least three different hypotheses about how differences develop during the life cycle once they have appeared (O’Rand and Henretta: 1999, 9). According to the most optimistic hypothesis individuals may enjoy social mobility and have the chance to change their social status in life to a large extent independently of the accumulated differences. It has been shown that this is possible only in societies that have serious mechanisms to attenuate differences especially when they are not very large. According to the second hypothesis, once accumulated differences remain through the whole life, while the third is sceptical about the very possibility of social mobility, even suggesting that the differences tend to increase with the passage through certain stages of transition in life such as the beginning of adulthood and the point of retirement.

Retirement usually has two effects - a total reduction of income and reduced income disparities. Overall, in countries that have a well-functioning and comprehensive pension system we expect the transition from work to retirement age to be accompanied by a reduction in poverty and income disparities. This is due to
the guaranteed pension transfers, having generally a much smaller range than salaries and other earnings and bearing much less risk.

In Bulgaria this effect actually occurs, but to a much lesser extent than expected for a European country and tends to fade away with ageing after retirement. Older retired households often remain with one member (usually a female), which in some cases leads to loss of income despite the rules for inheriting part of the spouse’s pension. This means that in Bulgaria the entry into the retirement age has some inequality mitigating effects, but overall transition from work to retirement in Bulgaria largely confirms the hypothesis that accumulated inequalities are maintained through life.

Figure 11. Income probability density for the working-age population and the population after working age. Source: household survey, the World Bank and the Open Society Institute – Sofia, 2010. Chart made in ADePT.

Figure 12 shows that in Bulgaria we can observe an increase of income for the lowest income groups at retirement age, which is typical for countries with well-developed and comprehensive pension systems, but its scope of this effect is very small.
Figure 12. Change of income per income percentile at the age of 65. Source: household survey, the World Bank and the Open Society Institute – Sofia, 2010. Chart made in ADePT.

Only up to the 5th percentile an increase in income is observed, and up to the 10th percentile the drop in income at retirement age is less than usual, i.e. the replacement rate of income is higher than average. This is indeed a very modest effect, which can be very fragile bearing in mind the expected increase in the age dependency ratio over the next decades. The willingness of future generations to sustain the pension system will be put to test against the environment of institutionalized selfishness, which is maintained also in the public sphere and in media discourse. It is very interesting how the media in a country are tuned to the political fashion of neoliberalism, a story that is interestingly told on the example of Germany by Ute Volkmann (Volkmann: 2006). I will mention here only the rhetoric encouraging and even praising selfishness and stigmatizing the vulnerable in society which has gradually penetrated all parts of the political spectrum and in all of the most important media in Bulgaria.

Demographic processes that take place in our country can be expected to give rise to various problems in relations between generations and disrupt intergenerational solidarity. Solidarity between generations can be defined as solidarity across generations within the family and solidarity between different cohorts within society. At the family level, there are various traditional models where grandparents care for grandchildren and great-grandchildren, for example due to divorce, departure, death or imprisonment of one or both parents. Increasing life expectancy leaves more and more people of the older cohorts available to provide support in raising the youngest generations, even considering the fact that the age of first birth also increases (Cruz-Saco: 2010, 9-10). But intergenerational solidarity within the family cannot compensate for the differences among the families and individuals in society, and these differences explain a large part of the poverty and social maladjustment among children as well as among people in working age.
For many developing countries at community level the lack of an intermediate generation, which should normally care for dependent family members both children and the elderly is a typical phenomenon. In some African countries for example, this phenomenon is caused by HIV/AIDS epidemic (Cruz-Saco: 2010, 25). In Bulgaria, in certain localities, the same phenomenon is caused by the emigration of working-age population leaving behind the children. Emigration is the reason for creating intergenerational vacuum also in some developing countries (Butts: 2010). The factors driving Bulgarian migration are different, but generally the idea is that parents should take alone the risks of initial adaptation at the new location, which can sometimes be a failure. Children in this case can be an additional burden, and for them it may be better to continue their education in the school where they already study. On the other hand finding successfully a stable job would allow the working generation to make transfers to their parents and children which make a significant resource in economically deprived areas with a much lower cost of living. Thus, mostly people in post-retirement age and preschool and school children may remain in the settlement. Such a micro society is likely to encounter some typical problems. First, communication in the family may become more difficult due to the absence of the intermediate generation. Grandparents are themselves in need of care and therefore are not very effective in replacing the parents. They may for example experience difficulties in fulfilling parental roles in education.

Disruption of formal and informal social protection systems can lead to a serious rift between generations. In Bulgaria, this happens as a result of dramatic economic changes while in other places the main causes are often wars, natural disasters, and mass exodus.

Current data show that the population in Bulgaria will continue to age and decline. This is a process of major change, as can be seen on a fundamental level in some models of artificial societies. On the other hand there are no signs yet that our society has begun to look seriously at the changes taking place, much less try to adapt to them. Perhaps we need to change our priorities. Currently we have created incentives for a young and socially homogeneous society in which people care for themselves. Instead, it is necessary to prepare for a society that will need strong solidarity between generations and between different social groups.

References


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