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UNSOLVED PROBLEMS IN THE THEORY OF DEMOGRAPHIC REVOLUTION

Abstract. The theory of demographic revolution / demographic transition is the main theoretical construction underlying modern concepts of demographic processes and their historical evolution. It enjoys wide and well-deserved recognition. At the same time, this theory can hardly be considered complete, as it is not free of contradictions and unsolved issues.

The theory in its present form does not sufficiently recognize the demographic revolution as a unity of three revolutions — in mortality, fertility and migration — and pays them unequal attention.

The theory underestimates the relative autonomy and interdependence of demographic processes, which leads to an exaggeration of the role of economic, political or cultural determinants of demographic shifts and to a downplaying of the role of these shifts as causes of economic, political and cultural changes. The theory of demographic revolution did not sufficiently integrate modern concepts of the behaviour of complex systems, their capacity for self-organization and homeostatic self-regulation.

Only when this has been done will the theory be able to rid itself of its inherent "pessimistic eschatology", and its explanatory potential be fully realized.

Keywords: demographic revolution theory; demographic transition theory; demographic balance; demographic eschatology; revolution in fertility; epidemiological revolution; epidemiological transition; migration transition; homeostatic self-regulation.

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The idea of the necessity of creating a new population theory that meets the new demographic conditions was expressed by the French economist and demographer A. Landry over 100 years ago [Landry, 1909]. The theory of demographic revolution became such a theory.

Several steps can be identified in the development of this theory. The first relates to the names of Adolf Landry and the American demographer Warren

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Thompson. In 1934 Landry published the book "The Demographic Revolution" [Landry, 1934], in it he elaborated on the thoughts expressed in 1909 [Landry, 1934], when he formulated the idea of the emergence of a fundamentally new fertility regime in the historical arena, which he actually saw as a "revolution". If Landry proceeded, mainly from European experience, Thompson was reflecting on the demographic changes modern to him at a global scale. In both cases it was important that the authors had drawn attention to the occurring phenomenon that required theoretical reasoning.

Thompson and Landry's generalizations gave a start to the conceptualization of views on the current phase of the world demographic evolution that consequently formed into the theory of the demographic revolution, or the demographic transition. This occurred in the 1940s, thanks to the efforts of American demographers from the Princeton Center of Demographic Studies (Frank Notestein, Kingsley Davis, Dudley Kirk, Ainsley Cole, and others). The focus of their interests was not so much the issue of low fertility and the looming depopulation, which attracted attention in pre-war Europe, but rather the issues of high fertility and accelerating population growth in developing countries. The prediction of this growth and the search for a political response, required a theoretical understanding of what was happening. Recourse to the concept of the demographic revolution and its development was a response to this request of the time.

The theory of demographic revolution / demographic transition, as it had been formulated by American demographers in the 1940s, has been widely accepted. "The Theory of transition offers a fairly accurate model of major changes occurring in the population in recent centuries... It describes the main structural changes that can be expected in the course of such changes. It even foresees and predicts, with sufficient accuracy, the demographic responses to the many diverse factors that are engendered by modern technological and cultural changes. Thus, it appears to meet the requirements of the middle-level theory. The modern transition is merely a private case of dynamics of demographic changes, but it makes it enables understanding certain patterns that open the way to significant generalizations" [Cowgill, 1970, p. 633].

J. Caldwell argued that the "modern demographic transition theory appeared in a almost mature form in Notestein's article in 1945" [Coldwell, 1976, p. 323]. The position of other authors was more cautious. "Modern demography is primarily a science of demographic transition", Paul Demeny wrote in 1968. However he spoke of the theory in future term, expressing the hope that the answers to the issues raised before demographers, "will ultimately condense in the theory of demographic transition: in the sum of generalizations that may explain the occurrence, progress and end result of past demographic transitions, and which will also give us the key to predicting future transitions" [Demeny, 1968, p. 502].

Expansion of the field of view of the theory

The theory of demographic revolution emerged in the search for explanations of unusual fertility trends in all countries which were industrialized by early XX century standards. This applies not only to Landry, but also to American theorists of the demographic transition, for whom the level and trends of fertility were the main criterion for determining the stages of transition [Hodgson, 1983, p. 9].

Fertility also remained the focus of the theory in the first post-war decades. As far back as the late 1960s, citing examples of descriptive and reasoning objectives of the demographic transition theory, P. Demeny spoke only of fertility. At the description level, "modern demographers often ask the questions: What is fertility in traditional societies? When does fertility begin to fall? Where does the drop in fertility begin? What is the speed of its decline? What is fertility in modern societies? At a more ambitious level, the challenge of explanation arises. The answers to every question about demographic facts are paraphrased to questions. Why does fertility begin to decline where this happens? Why does the decline in fertility take place faster in some places than in others? And so on [Demeny, 1968, p. 502].

The situation changed in the 1970s, that had become the next notable stage in the evolution of the theory of the demographic revolution. At the beginning of that decade, the concepts of "epidemiological transition" [Omran, 1971] and "Epidemiological Revolution" [Terris, 1972; 1976], "transition to mobility" [Zelinsky, 1971], and "contraceptive revolution" [Westoff, Ryder, 1977]) entered into circulation. At least some of the mentioned authors, by introducing new concepts, had stressed their dissatisfaction with the state of the demographic revolution / demographic transition theory and their desire to contribute to its development.

Author of the concept of epidemiological transition, A. Omran noted, that the impetus for its development had been "the limitations of demographic transition theory and of the need for comprehensive approaches to population dynamics" [Omran, 2005, pp. 732—733]. He saw, "lend theoretical perspective to the process of population change by relating mortality patterns to demographic and socioeconomic trends" as the basic strategy [Omran, 2005, p. 755].

In turn, U. Zelinsky believed that the term "*demographic transition*" was misused to indicate, what is actually more appropriately referred to as "*vital transition*" and, in fact, pointed to the need to interpret "*migration transition*" as an organic part of the demographic transition as a whole.

As a result of all these adjustments the "scope of vision" of the theory of demographic revolution significantly expanded, fertility had ceased to be almost the sole focus, the theory had become increasingly inclusive, paving the way for understanding all major demographic processes and their interaction. The idea of transition had become fashionable, and the concepts of the Second [Van de Kaa,

1987] and the Third [Coleman, 2006] demographic transitions and the sanitary transition [Frenk et al., 1991] emerged, from time to time the discovery of new transitions is reported (see, for instance, [Eggleston, Fuchs, 2012]).

"Revolution" or "transition"?

The relocation in the 1940s of the Center for discussion of the issues of the demographic revolution to the United States was accompanied by a "renaming" of the theory. The term proposed by Landry was, of course, known to Americans. Sometimes they used the term "vital revolution", as far back as 1944. K. Davis wrote about the "demographic revolution inseparable from the industrial revolution" [Davis, 1945, p. 57]. But then the "demographic revolution" gave way to the "demographic transition". This term was proposed in 1945 by F. Notestein [Notestein, 1945, p. 40], then it was first used (Kingsley Davis) in the title of article [Davis, 1945] and soon became widely used both within and outside the United States.

As van de Kaa writes, it is hard to say whether the word "revolution" had been rejected consciously or if the word "transition" had gained greater international resonance due to the fact that, for most researchers, American demographic literature had been more available than French. This, according to van de Kaa, "has weakened the historical depth and semantics of the term and further underlined the link with modernization and its economic consequences" [Van de Kaa, 2010].

We can agree with van de Kaa that the term "revolution" intuitively points to a deeper and less dependent historical context, and that it was not chosen by Landry accidentally, but to somewhat put this almost undetected revolution alongside the French political revolution [Van de Kaa, 2010]. The Czech demographer Zdeněk Pavlík, who uses the term "demographic revolution", underlined that "the demographic revolution is an integral part of a complex historical process with many parties, is far from being their passive product, and plays its distinct and important role in the entire process" [Pavlik, 1979]. It also seems to me, that the term "revolution" is indeed more in line with the very special, fundamental role of the demographic transformation that is taking place before our eyes. If we recognize, that this transformation really marks the transition to a new reproductive strategy of the *Homo sapiens* type [Vishnevsky, 2014], it must be recognized that, by its universal importance, its consequences and the global risks it engenders, it surpasses any political or economic revolution.

It is sometimes believed that in Russia, "during the Soviet period, the dominance of the Marxist (revolutionary) ideology contributed to the fact that the term 'demographic revolution' was preferred to 'demographic transition' [Antonov, 2011, p. 232]. This is not true. The soviet Demographic encyclopedic

dictionary refers to the term “demographic revolution”, but the basic article is called “Demographic transition” [Demograficheskij..., 1985, p. 115—117].

The question of the term is, of course, not the main one. Though I prefer the “demographic revolution”, I do not abandon the term “demographic transition”. The prevailing scientific tradition justifies the use of both terms as synonyms. But there are much more important substantive issues, without which further development of theory is hardly possible.

Stages and components of the demographic revolution

The first, which usually begins with an acquaintance with the theory of the demographic revolution, is a description of its empirically fixed and logically comprehensible successive stages. If we are to understand this revolution simply as a transition from a balance of high to a balance of low levels of mortality and fertility, it is natural to try to distinguish between the various phases of this motion which continues for some time in each country. Initially, the distinction itself assumes the nature of conceptualizing, as it contains the idea of “transition”, as opposed to the classification of static diversity observed at each moment. Notestein described the transition as a sequence of three stages, characterized primarily by fertility: the stage of high growth potential, the transitional growth stage and the stage of incipient decline [Notestein, 1945: 42–50].

The five-stage transition scheme proposed in the late 1940s [Blacker, 1947] is now widely disseminated: stationarity at high levels of mortality and fertility (the high stationary phase); early expanding phase — mortality declines, fertility remains high, and population growth consequently accelerates; the late expanding phase — decline in mortality slows down, and the decline in fertility accelerates, their levels become closer and population growth begins to decelerate; the low stationary phase; and finally, the declining phase — fertility descends below mortality, natural population decline occurs, and if it is not compensated for by immigration, the population begins to reduce[1]. Parallel to changes in mortality and fertility, the shape of the age pyramid changes, and the population ages.

[1] Blake's scheme has gained worldwide fame. But, for the sake of justice, it should be said that it had been enunciate just as clearly long before him, by the Russian immigrant in France, Alexander Kulisher. "Most modern nations pass at different times, depending on the moment when each of them embarks on the path of 'modern progress', the same typical cycle in terms of population development." Starting with England, where this cycle began in the second half of the XVIII century, it repeats itself with remarkable regularity of stages of which it consists, from other European nations, generally expanding from west to east. This cycle, which is being concluded today by the most advanced nations in this regard, while others are still in full swing, consists of several stages. At the first stage, the population grows faster and faster because of the long decline in mortality. Fertility also begins to decline, but with some lag, and its decline is initially slower, so that excess births increase all the time and the country experiences a real "flood". Over time, the growth [of the population] is increasingly hampered by a decline in fertility, which is gained

The description of similar phases of the demographic revolution is good for initial acquaintance with this complex, universal historical phenomenon, but it only serves as a first approximation to its deeper scientific analysis. Theory cannot be limited to a quantitative description of the changes that take place, but must reveal their content, grasp their causes and consequences. To that end, we must turn to the essence of the revolutionary changes that have affected all the major demographic processes: mortality, fertility and migration. These processes did not enter he scope of theorists' view at the same time.

The revolution in fertility. As already noted, the attention of the first theorists of the demographic revolution was brought to lower fertility, for which it was almost synonymous with the revolution.

The enormous changes in fertility — both in speed and depth — do not really have a precedent and give reason to speak of their revolutionary character. But from the beginning, it was clear that the fertility revolution was just a response to the decline in mortality, which was no longer mentioned as a revolution, this subject emerged much later. Moreover, it had long been understood that this is not the only, but merely *one* of the possible answers [Davis, 1963]. Moreover, it has long been known that this response can have multiple forms.

Since the time of Landry, when the fertility revolution is mentioned, the most common tacit meaning is only its stage, which is related to the spread of the intra-family regulation of childbearing. Meanwhile, the decline in fertility as a response to the decline in mortality started long before that stage and was achieved in a different way, as Landry himself described in the form of a model in which the "not mortality, but nuptiality becomes the direct population regulator" [Landry, 2014]. A mass appeal to this regulator led to the "European type of nuptiality", which "can be reliably traced starting from the XVII century for all strata of the population" [Hajnal, 1979, p. 65]. Late marriages or celibacy as a way of reducing fertility in response to a decline in mortality is well known to demographers [Davis, 1963; Livi Bacci, 1995].

Is it not right to attribute the beginning of the birth revolution to the time of the advent of this model, and thereby to better understand the characteristics of family and community interaction at different stages of the revolution? Then, perhaps, the changes referred to as the "second demographic transition" will lose their exclusivity and be perceived as a stage of fertility change in which the family has always been a major revolutionary and the main recipient of the gains achieved.

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by a decline in mortality, although mortality also continues to decline. Relative growth declines, although absolute numbers continue to rise. After all, a staggering decline in fertility leads to the extinction of excess births and even heralds a reduction in the population" [Koulicher, 1933, pp. 354-355; Koulicher, 2015, pp. 29]. In fact, this brief description contains all the ideas developed subsequently by American theorists of demographic transition.

The revolution in fertility. Of course, the theory of the demographic revolution, even if focused on explaining fundamental changes in fertility, it from the outset took into account the link between these changes and the decline in mortality. However, this decline, which was historically lower than fertility, had long been perceived as an external circumstance that needs to be taken into account in explaining the decline in fertility, but no more. The question of what happens to mortality itself, why it declines and what the profound changes are behind the decline, was not asked, a reference to general progress, advances in medicine, improvement of living standards, etc. seemed to be sufficient. "The whole process of modernization in Europe and overseas Europe has brought about a rise in living standards, new control of affliction and a reduction in mortality" [Notestein, 1945, p. 40].

Only the concept of epidemiological transition, which appeared much later than the general perception of the demographic revolution, drew attention to the reduction of mortality as an independent process requiring an analysis of its internal content. The name of the Omran is well known to demographers, but in the history of the demographic transition itself his name is not usually mentioned. This is a great injustice, because it is he who had studied and interpreted the essence of the profound changes in mortality as a key element in the conceptual vision of the demographic revolution as a whole.

The role of reducing mortality as a key mechanism launching the demographic revolution was recognized before Omran. But his interest in "mortality patterns" opened the way to rethink the obvious fact of a quantitative reduction in mortality in terms of the structure of causes of death. Building on the fundamental differences in the structure of pathology and the causes of death, Omran referred to the transition from one phase of mortality to another. He did not use the word "revolution", but in fact, it was a revolutionary change that separates one era from another. (The term "epidemiological revolution" was used, as we saw, by Milton Terris [Terris, 1976], but he was not a demographer and did not mention the demographic transition). The concept of epidemiological transition helps understand the "anatomy" of historical changes in mortality as an autonomous revolution, leading to a fundamental change in this structure, which "not only shifts from one dominant structure of pathologies to another, but also radically transforms the age of death" [Meslé, Vallin, 2002, p. 440].

The notion of an "epidemiological revolution" or, in the terminology of Omran, "epidemiological transition" should be "embeded" into the general theory of the demographic revolution as its integral part. The mortality revolution is as important a part of the entire demographic revolution as the fertility revolution, in a sense even more important, because that is where it all began. And, like the fertility revolution, the mortality revolution is not yet fully complete in practice and is not fully understood in theory. Theorists ' interest is increasingly being shifted to predicting the new stages of this revolution

and their impact on the dynamics and age structure of the population, thus contributing to a deeper understanding of the entire demographic revolution as a single integrated process.

Revolution in migration. U. Zelinsky had every reason to say that what demographers call a "demographic transition" is not so, because it does not include migration. Zelinsky spoke of a broader "mobility transition" (mobility transition) and stressed that "true migration clearly points to a perceptible and simultaneous shift, both in spatial and social dimensions" [Zelinsky, 1971, p. 224]. But in more specific analysis he considered mainly territorial migrations (although he did make a reservation that the concept of territorial mobility is used "as a substitute for social and physical mobility" [p. 225]). In any case, Zelinsky's approach also gives rise to an actual "migration transition", which in the full sense of the word revolutionized migration, having, for the first time in history, made it individualized and voluntary. This has opened the way for the movement of excess rural population to cities and urbanization, and then for large-scale international migration, which has led to the settlement of New World and gradually grasped the whole world.

K. Davis already clearly understood that peasant migration to the cities was one of the first responses by Europeans to the reduction of mortality and the disturption in the demographic balance, along with a response such as the extension of the late "European" nuptiality [Davis, 1963, pp. 352—354]. Davis' ideas were developed by Friedlander [Friedlander, 1969], and he pointed out to his other predecessors, Zelinsky referred to both of them, considered changes in migration as a response to the imbalance of fertility and mortality in the course of the "intravital" transition, and traced the relationship between the two transitions — the "intravital" and migrative — at different stages of fertility and mortality changes [Zelinsky, 1971, pp. 230—231].

Zelinsky accused demographers for underestimating migration, but demographers, for their part, being aware of migration as "one of the mechanisms of demographic regulation", recognize that "paradoxically, migratory movements do not find a place in the theory of demographic transition" [Chaisnais, 1992, pp. 153—154].

The seemingly recent concept of the "third demographic transition" of D. Coleman [Coleman, 2006], who also critically assesses the current attitude of demographers to migration ("Until recently migration has correctly been regarded as the 'weak sister' of modern demography" [Coleman, 2013, p. 269]) should contribute to the understanding of the "migration transition" as part of the world demographic revolution. However, this is probably not the case.

The emphasis in Coleman's concept is placed in such a way that contemporary international migration is not seen as an inevitable and predictable phase of the overall demographic revolution, now global, as a stage of migration transition, which becomes one of the legitimate answers to the decline in mortality and to

the acceleration of population growth, resulting in the ejection of redundant population, as was reported by Davis, Zelinsky or Chenee.

The logic of the theory of the demographic revolution suggests that its globalization includes globalization of the migration transition, as its indivisible part, an unprecedented increase in the mobility of billions of people in the developing world, with all the ensuing consequences, including, possibly, rather unpleasant ones. Coleman does not consider the entire process and its consequences, but only those of them that may be painful for developed countries that receive migrants. At the same time, the inevitability and universality of the migration transition is questioned, presumed to have alternatives and, with the right policies, developed countries can protect themselves from its consequences. Such a calming point of view does not stem from the theory of the demographic revolution and rather ignores the objective processes it describes, which helps to understand them.

Thus, the demographic revolution includes at least three revolutions: the revolution in mortality (epidemiological revolution), the fertility revolution, and the migration revolution. Together, they accompany humanity's transition to a new reproduction strategy [Vishnevsky, 2014] and its adaptation to new demographic realities.

The demographic revolution in the context of historic changes: a double explanatory logic

One of the most vulnerable parts of the theory of demographic revolution in its modern form is the highly controversial logic of explaining the changes that constitute its essence. This is particularly well illustrated by fertility.

From the very beginning, it was clear to the theorists of the demographic revolution that the decline in fertility was a response to the decline in mortality, but for some reason this explanation seemed to be inadequate to them. "In the past, ... births in the family could be numerous: so many children died that large families were far from frequent; today, with such fertility, large families would become the rule. But can this explain the decline in fertility? Is it enough to argue that unfettered reproduction has now spawned more than just a relatively low risk of greater family spending, but the probability of such a heavy workload that this would result in a reproductive restraint? This appears not to be the case. Another explanation must therefore be sought" [Landry, 1982, pp. 38—39]. Landry found this other explanation of in the influence of new ideas and perceptions of the Age of Enlightenment and the French Revolution on the people's demographic behavior.

The position of American theorists of the demographic transition was just as inconsistent. They clearly pointed to the role of mortality reduction as a cause of the transition, and it was well understood that "mortality decline impinged

on the individual by enlarging his family" [Davis, 1963, p. 352]. They were well aware of all the responses to the decline in mortality used by the population of Europe, when this decline was just beginning (first of all, the response to late marriages and the migration response), and when the decline in mortality gained strength and "family planning" was required. The reason for all of this response was to ***retain the family size***. It was also understood from the outset that the demographic transition brings with it "striking gains in efficiency". "The new type of demographic equilibrium unleashed a huge amount of energy from an eternal chain of reproduction — energy that could have been spent on other vital tasks" [Davis, 1945, p. 5].

The paradox is that, with a clear understanding of the nature of the changes actually in effect, they are, at the same time, with perseverance, worthy of better use, seeking to explain a non-existent fact — "a fundamental ***change*** (*emphasis added*. — A.V.) of people's motives and goals for family size" [Notestein, 1945, p. 40]. As D. Kirk wrote about it much later, "It is surprising that while reduction in mortality is usually pointed to as *raison d'être* for declining fertility, it is not often given the first place among *the causes* of fertility decline" [Kirk, 1996, p. 368]. It is probably only A. Omran, who is generally not included among the theorists of the demographic revolution in general, and who is remembered only when it comes to the revolution in mortality, with no hesitation points to the role of reducing mortality as the key cause of declining fertility, which is not alarming to him. "Improved infant and childhood survival tends to undermine the complex social, economic and emotional rationale for high parity for individuals and hence high fertility for society as a whole. As couples become aware of the near certainty that their offspring, particularly a son, will survive them, the likelihood of practicing family limitation is enhanced. Not only are compensatory efforts to "make up" for lost children reduced, but the investment of parental energies and emotions may take on a new, qualitative dimension as each child in the small family is provided better protection, care and education [Omran, 1977, p. 74].

But most demographers have miraculously not been and are still not aware of the contradictions of their own theoretical compositions. Notestein saw the causes of the mythical changes in the attitudes of people to family size in transformations in the social and economic environment and provided a whole list of such transformations. The list included both the growth of individualism and the development of urban life and the rising cost of raising children, and the changing role of the family in society, and much more. Since then, the most reputable theorists of the demographic transition, such as J. Caldwell, the authors of the theory of the "Second demographic transition" D. Van de Kaa and R. Lesteg, and practically all demographers, including the Russians, referring to the explanation of the decline in fertility in the transition process,

repeat Notestein[1]'s list in different variations and with additions, attempting, in turn, to reveal the secret of the non-existent differences in the average size of a family before and after the demographic revolution.

The odd blindness of the researchers in the Fertility Revolution is the reflection of a more general methodological problem that had not been solved within the framework of the demographic revolution. Many years ago, I wrote that the consideration of the demographic revolution as an autonomous historical phenomenon required the recognition of its own internal logic, although, unfortunately, "this internal logic does not attract the attention of demographers who interpret such changes only as a consequence of various social shifts that are non-demographic in their nature" [Vishnevsky, 1991, p. 267].

Whenever its theorists face new changes in the demographics of the people, they attempt to explain these changes not as the internal logic of the revolution itself, but rather as an autonomous historical and demographic process, and seek external explanations for it. The reduction of fertility, changes in marriage and family, etc., are considered only the consequences of changes in economics, politics, culture, etc. It seems quite natural to them, and they often see the meaning of the theory of the demographic Revolution, which "correlation between socioeconomic and family-demographic factors" [Hodgson, 1983, p. 7].

The question, however, is how this correlation is interpreted. The demographic revolution can only be seen as the consequences of social and economic changes, so it is possible to understand, for example, the words of K. Davis that the "cultural transition, known as the Industrial Revolution, was accompanied by a deeply related demographic transition" [Davis, 1945, p. 5]. But historical events can be viewed otherwise. The decline of mortality in Europe, which had developed in Europe long before the industrial revolution, made it possible and necessary not only to reduce fertility, but also to make the "migration response", which created the preconditions for urban growth and industrial development. In this interpretation, the revolution in fertility is not a consequence of the industrial revolution, but an equal result of earlier changes, including (and perhaps primarily) demographics.

Hodgson argues that demographic transition theorists considered fertility as a dependent variable, i.e. they felt that this level could always be understood by analyzing the components of the social system that influenced it, and he brings

[1] It was certainly not the first such list. As Hodgson writes, "In 1893 John Billings offered the following quite contemporary sounding list of socioeconomic trends motivating couples to practice contraception: an increased desire for items that formerly had been luxuries but now were almost necessities; a desire to preserve or secure social standing through expenditures not related to childbearing; a desire to increase the quality of children, which meant spending *more* per child; women's increased desire to be independent of "possible or actual husbands"; and women's growing evaluation of housekeeping as being "a sort of domestic slavery" [Billings, 1893, p. 476. Cit. by: Hodgson, 1983, p. 5].

forward reduction in mortality as the first such component [Hodgson, 1983, p. 10]. But in doing so, he implicitly recognizes, firstly, the exceptional role of reducing mortality as a cause of declining fertility, which has not or has not fully satisfied the theorists he mentioned. Secondly, he interprets the reduction of mortality as a social rather than a demographic process. This is true, if we treat all processes in human society and under its control as social. But this is not true if the society is to be understood as a complex, functionally structured system, where, among other things, there is a relatively autonomous demographic subsystem with internal mechanisms for maintaining the demographic equilibrium.

D. Reher's position, as set out in its relatively recent article, seems much more true to me. "Rather less attention has been given to the demographic transition specifically as a cause rather than as a consequence of this process of change. Ultimately, historians and social scientists tend to conceptualize demographic realities as determined by economic forces rather than the other way around. I argue here that in many ways demographic change can and should be seen as an essential factor of change. The demographic transition will be considered as a largely autonomous process that ended up having profound social, economic, and even psychological or ideational implications for society. Demography will be seen an independent variable" [Reher, 2011, p. 11—12; Reher, 2014, p. 42].

The eschatology of the theory of the demographic revolution

The notion of the ultimate result, to which the demographic revolution leads is considered as eschatology in this case. The position of the theorists of this revolution was contradictory from the beginning, which, incidentally, drew the attention of the author of one of the first reviews of Landry's book. The author of the book, sharing the concern of the French "Natalists" with the decline in fertility and impending depopulation, wrote that the new fertility regime, which the demographic revolution brings with itself, is indeed not capable of sustaining an eternal demographic equilibrium. The reviewer argued that the scientific level of the book by far surpassed all that was written by the representatives of the Natalist school, precisely because, in spite of the preconceptions of the school, new facts were presented with great force, which could completely destroy the former Natalist concept [Koulicher, 1934, p. 257; Koulicher, 2015, p. 32].

By associating declining fertility with a decline in mortality, Landry created the prerequisites for explaining systemic changes within a single social whole. People's behavior changed because it had to change, and society had to adapt to the new conditions of demographic existence. In the first half of the XX century in social sciences, an image of society as a complex system with internal sustainability was already firmly established. As Parsons wrote, "in the process of development and adaptation to a variety of circumstances, forms of social organization emerge, with increasingly adaptive capabilities less susceptible to private, accidental

causes" [Parsons, 2002, p. 11]. It would seem that demographers also needed first to try to reflect on the possible new "forms of social organization" that would make society adapt to new demographic realities. But to do that, society had to be seen as a whole.

Landry pursued another way. He considered society as an aggregate of atomized individuals, among whom the "principle of rationalization of life", which opens up to all feelings and estimates, was spread. They encourage the reduction of fertility, and "the factors of selfish nature seem to play an increasingly important role" [Landry, 1982: 41]. In so doing, he lured generations of demographers into the "pessimistic eschatology" trap, according to which the demographic revolution deprives people of incentives for the birth of children and thus creates the preconditions for unbridled decline in fertility. Demographers constantly look for "factors" influencing people's "feelings and estimates" and are trying to influence these factors, in particular, with population policy measures.

I have long been trying to oppose another approach to this one, which I have called "systematic and historic" [Vishnevsky, 1982]. This approach requires the allocation and consideration of a relatively autonomous demographic subsystem of society with a sustainable "internal environment" and therefore a capacity for gomeostatic self-regulation. With some simplification, it can be said that because of the existence of such a subsystem, the demographic behavior of people at the statistical level is not determined by what each individual wants, but by what the system requires. Hence the optimistic demographic eschatology, at least when it comes to low fertility: it cannot fall too low for long.

The idea of homeostatic self-organization of the system had for a long time been interpreted as unscientific, mystical. "Equilibrium is not the gift of Divine providence" is the title of the section in the Book of French demographer Alfred Sauvy. "Fatalism or passive belief in equilibrium and natural reactions are the craftiest of poisons that can poison the people..." [Sauvy, 1977, pp. 226—227].

The American demographer C. Westoff in an article with a distinctive name: «The return to replacement fertility: a magnetic force?" was skeptical about the "metaphysical assumption that some homeostatic mechanism would maintain a good balance" and criticized the demographic outlook of the United Nations for European countries for coming from this "mystical assumption" and "assumed a magnetic force similar to a compass, that will pull these countries out of their flirting with a population decline and restore the demographic balance" [Westoff, 1991, pp. 227—228].

The mystics and fatalism and Russian demographers are afraid. They are concerned about the "*philosophical fatalistic"* (or *"Demohegelian"*) argumentation that "fertility decline is an objective process that occurs independently of our desires, assessments and actions, and therefore the only possible one... It goes without saying that this spontaneous development is always in harmony with public and personal interests, but it is not quite clear why (Demohegelianism

bypasses this issue diligently)" [Medkov, 2002, pp. 371—372]. "The inevitability and irreversibility of historical processes, easily transforming into a fatalistic view of the occurring developments, that are beyond the control of human actions, that happen beyond people and lead to a predetermined end result are assumed..." According to this sentiment, the phases of the demographic transition, leading ultimately to a low birth and death balance are designed" [Antonov, Borisov, 2011, p. 241].

The rejection of mystique and fatalism is a position that is natural to science. However, science itself does not stand still, and what seemed mystical yesterday, because it was not understood, might have a scientific explanation today. As written by Ludwig von Bertalanffy, the creator of the general system theory, "concepts like those of organization, wholeness, directiveness, teleology, control, self-regulation, differentiation and the like are alien to conventional physics. However, they pop up everywhere in the biological, behavioural and social sciences, and are, in fact, indispensable for dealing with living organisms or social groups. Thus, a basic problem posed to modern science is a general theory of organization" [Bertalanffy, 1969, p. 32].

Recognition or non-recognition by demographers of the principles of systemic organization is not only a matter of agreement with one or another "demographic eschatology". This is even more a question of whether the theory of demographic revolution can really be considered as a theory or under what conditions it may become so. The widespread descriptions of "models", successive stages of the demographic revolution/demographic transition, etc. do not enable going beyond the descriptive level and, in fact, do not give reason to speak of theory in the full sense of the word. If using P. Demeny's mentioned above expression, despite its high potential, it is not yet "condensed" to real theory. In order for this to happen, it is necessary, on the one hand, to take a critical look at its present state and, on the other, to broaden its methodological foundations to the point where they become adequate to the complexity of the studied processes and the entire social system in which these processes occur.

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