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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 just such a theory.

Several steps can be identified in the development of the theory. The first is linked to the names of Adolphe Landry and the American demographer Warren

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Thompson. In 1934 Landry published the book «The Demographic Revolution» [Landry 1934], in which he elaborated on 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 contemporary demographic changes on a global scale. In both cases it was important that the authors had drawn attention to an unprecedented historical phenomenon requiring theoretical understanding.

Thompson and Landry's generalizations gave a start to the conceptualization of views on the current phase of global demographic evolution that subsequently took shape as 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 University Office of Population Research (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 looming depopulation, which had 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 became a response to this demand of the time.

The theory of demographic revolution/demographic transition, as formulated by American demographers in the 1940s, was widely accepted. «Transition theory appears to offer a reasonably accurate model of the major population changes occurring in the population in recent centuries. It describes the main processes resulting in the "population explosion" of modern times <...> It describes the main structural changes which may be expected during such changes. It even anticipates and predicts with reasonable accuracy the demographic reaction to a considerable variety of factors inherent in modern technological and cultural changes. As such it appears to fulfill the claims of a theory of the middle range. The modern transition is merely a special case in the dynamics of population change, but from it we may extract certain principles which have a considerable degree of generality" [Cowgill 1970, p. 633].

J. Caldwell argued that the «modern demographic transition theory was born almost in mature form in a paper written by Frank Notestein in 1945» [Coldwell 1976: 323]. The position of other authors was more cautious. "Modern demography is, above all, about demographic transition", Paul Demeny wrote in 1968. However, he spoke of the theory in the future tense, expressing the hope that the answers to the issues facing demographers «will eventually jell into a theory of demographic transition: a set of generalizations which are capable of explaining the onset, the course, and the final outcome of past demographic

transitions, and which will also give us a key to the prediction of transitions yet to come" [Demeny 1968, p. 502].

Expanding the theory's scope

The theory of demographic revolution emerged in the search for explanations of the unusual fertility trends observed in all countries which were industrialized by early 20th century standards. This applies not only to Landry, but also to American formulators of transition theory, for whom the the presence and extent of fertility decline was "the criterion for classifying societies in the three-stage framework of the demographic 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 explanatory objectives of the demographic transition theory, P. Demeny spoke only of fertility. At the descriptive level, "contemporary demographers often ask: What is the level of fertility in traditional societies? When does fertility decline start? Where does fertility decline start? What is the speed of decline? What is the level of fertility in modern societies? On a more ambitious level, there is the task of explanation. The answers to each question about demographic facts are rephrased into questions. Why did fertility start to decline where it did? Why was the decline faster here than it was elsewhere? And so on" [Demeny 1968, p. 502].

The situation changed in the 1970s, leading to 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], "mobility transition" [Zelinsky 1971], and "contraceptive revolution" [Westoff and Ryder 1977]) entered into circulation. At least some of the authors mentioned had, by introducing new concepts, stressed their dissatisfaction with the state of the demographic revolution/demographic transition theory and their desire to contribute to its development.

The author of the concept of the 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, p. 732-733]. He saw his basic strategy as that of "lend[ing] theoretical perspective to the process of population change by relating mortality patterns to demographic and socioeconomic trends" [Omran 2005, p. 755].

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

As a result of all these adjustments, the scope of the theory of demographic revolution significantly expanded, fertility ceased to be almost the sole focus, and the theory became increasingly inclusive, paving the way for understanding all

major demographic processes and their interaction. The idea of transition had become fashionable. There now appeared concepts of Second [van de Kaa D. J. 1987] and Third [Coleman 2006] Demographic Transitions, as well as a Health Transition [Frenk et al. 1991], and from time to time the discovery of other new transitions are 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», and as far back as 1944 K. Davis wrote that "the industrial and demographic revolutions are apparently inseparable" [Davis 1944, p. 57]. But then the «demographic revolution» gave way to the «demographic transition». This term was proposed in 1945 by F. Notestein [Notestein 1945: 40] and was first used by Kingsley Davis in the title of his article [Davis 1945], after which it soon became widely used both within and outside the United States.

As van de Kaa writes, it is not evident that the term 'revolution' was consciously rejected. It is possible that "the term 'transition' prevailed because it had more international appeal and more scholars could more easily consult American rather than French demographic literature". But "as a consequence its historical depth and ideational dimension diminished, while the process of modernisation and its economic aspects was emphasized more strongly" [van de Kaa 2010].

I 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 purposefully to point to a certain similarity between this almost undetected revolution and the French political revolution [van de Kaa 2010]. The Czech demographer Zdeněk Pavlík, who uses the term «demographic revolution», emphasized 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: 161]. 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 Homo sapiens [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» [Demographic ... 1985, p. 115–117].

The issue of the term is of course not the main one. Though I prefer «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 the theory is hardly possible.

Stages and components of the demographic revolution

The first aspect with which an introduction to the theory of demographic revolution usually begins, is a description of its empirically recorded and logically comprehensible consistent steps. 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 dynamic which has continued for some time in each country. Initially, the distinction itself assumes the nature of a conceptualization, 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: a stage of high growth potential, a transitional growth stage and a stage of incipient decline [Notestein 1945, p. 42–50].

The five-stage transition scheme proposed in the late 1940s [Blacker 1947] is now widespread: stationarity at high levels of mortality and fertility (the high stationary phase); an early expanding phase – mortality declines, fertility remains high, and population growth consequently accelerates; a late expanding phase – decline in mortality slows down, and the decline in fertility accelerates, their levels become closer and population growth begins to decelerate; a low stationary phase; and finally, a declining phase - fertility descends below mortality, natural population decline occurs, and if it is not compensated for by immigration, the population begins to shrink[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, to be fair, it should be said that it had been enunciated just as clearly long before him, by the Russian immigrant in France, Alexander Koulicher (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 18th century, it repeats itself with a remarkable regularity of its component stages, spreading to 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 overtaken by a decline

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. The theory cannot be limited to a quantitative description of the changes taking 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 theorists' field of vision all at the same time.

The revolution in mortality. Of course, the theory of the demographic revolution, even if focused first of all on explaining the fundamental changes in fertility, took into account from the outset the connection between these changes and the reduction in mortality. However, this reduction, which historically preceded the decline in fertility, had for a long time 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 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. "In short, the whole process of modernization in Europe and Europe overseas brought rising levels of living, new controls over disease, and reduced mortality" [Notestein, 1945, p. 40].

Only the concept of the epidemiologic transition, which appeared much later than the general notions 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 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 the reduction in mortality as a key mechanism launching the demographic revolution was recognized before Omran. But his interest in "mortality patterns" opened the way to rethinking 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 causes of death, Omran referred to the transition from one phase of the history of mortality to another. He did not use the word "revolution", but, in essence, had in mind a revolutionary change that separates one era from another. (The

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

term “epidemiologic revolution” was used, as we saw, by Milton Terris [Terris 1972, 1976], but he was not a demographer and did not mention the demographic transition). The concept of an epidemiologic transition helps to understand the “anatomy” of historical changes in mortality as an autonomous revolution leading to a fundamental change in this structure, “The term epidemiologic transition is used to designate the shift from one dominant pathologic structure to another and a radical transformation process in ages at death” [Meslé, Vallin 2006, p. 247].

The notion of an “epidemiologic revolution” or, in the terminology of Omran, an “epidemiologic transition” should be “embedded” into the general theory of the demographic revolution as an integral part of it. 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 shifting towards 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. W. Zelinsky had every reason to say that what demographers call a «demographic transition» is not one, because it does not include migration. Zelinsky spoke of a broader «mobility transition» and stressed that “genuine migration obviously means a perceptible and simultaneous shift in both spatial and social locus” [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 the totality of 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 opened the way for the movement of excess rural population to cities and for urbanization, and then for large-scale international migration which led to the settlement of the New World and gradually spread all over the globe.

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 disruption in the demographic balance, along with such a response as the spreading of the late «European» marriage pattern [Davis 1963, p. 352–354]. Davis’ ideas were developed by Friedlander [Friedlander 1969], who also pointed out 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 «vital transition”, and traced the relationship between the two transitions — the «vital transition» and “mobility transition” — at different stages of fertility and mortality changes [Zelinsky 1971, p. 230–231].

Zelinsky accused demographers of underestimating migration, but demographers, for their part, understanding that migration is "a mechanism of demographic regulation", recognize that "curiously, migratory movements are absent from the theory of demographic transition" [Chesnais 1992, p. 153–154].

One might think that the recent concept of the «third demographic transition» of D. Coleman [Coleman 2006 (b)], who also critically assesses the current attitude of demographers to migration («Until recently, migration has typically been regarded as the 'weak sister' of modern demography» [Coleman 2006(a), p. 19]), would contribute to the understanding of the «migration transition» as part of the global 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, now global, demographic revolution, as a stage of the migration transition which became one of the natural responses to the decline in mortality and to the acceleration of population growth resulting in the pushing out of excess population, as Davis, Zelinsky or Chesnais wrote.

The logic of the theory of the demographic revolution suggests that its globalization also includes, as an integral part of it, the globalization of the migration transition, the unprecedented increase in the mobility of billions of people in the developing world, with all the ensuing consequences, including perhaps some highly unpleasant ones. Coleman does not consider the entire process and its consequences, but only those of them that may be painful for developed countries receiving migrants. At the same time, the inevitability and universality of the migration transition is called into question; it is presumed that alternatives exist, and that, with the right policies, developed countries can protect themselves from its consequences. Such a reassuring point of view does not follow from the theory of the demographic revolution, and ignores, rather than helps to understand, the objective processes it describes.

Thus, the demographic revolution includes at least three revolutions: the mortality revolution (the epidemiological revolution), the fertility revolution, and the migration revolution. Together they constitute humanity's transition to a new reproductive 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 not only a relatively low risk of greater family spending, but the probability of such a great strain that it would result in reproductive restraint? This appears not to be the case. Another explanation must therefore be sought” [Landry 1982, p. 38-39]. Landry found this other explanation in the influence of new ideas and perceptions of the Age of Enlightenment and the French Revolution on 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 (above all, the response of late marriage and the migration response) and when the decline in mortality was gaining momentum and “family planning” was required. The point of all of these responses was to preserve the former family size. It was also understood from the outset that the demographic transition brought with it “an astounding gain in human efficiency”. “The new type of demographic balance released a great amount of energy from the eternal chain of reproduction – energy that could be spent on other aspects of life” [Davis 1945, p. 5].

The paradox is that, while possessing a clear understanding of the nature of the changes which had actually occurred, the theorists, at the same time and with a perseverance worthy of better use, sought to explain a non-existent fact - the “drastic changes in the social and economic setting that radically altered (our emphasis - A.V.) the motives and aims of people with respect to family size” [Notestein 1945, p. 40]. As D. Kirk wrote much later, “it is perhaps surprising that while mortality decline is usually cited as the raison d’être for fertility decline, it is not often accorded a primary place as a cause of fertility decline” [Kirk 1996: 368]. It is probably only A. Omran, generally not included among the theorists of the demographic revolution in general, and remembered only when it comes to the revolution in mortality, who unhesitatingly points to the role of the reduction in mortality as the key cause of declining fertility, and this decline does not alarm 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“ [Omran1971, p. 530].

But most demographers have miraculously not been and are still not aware of the contradictions of their own theoretical constructions. 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, as well as the changing role of the family in society and much more. Since then, the most authoritative 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. Lesthaeghe, and practically all demographers, including the Russians, when invoking the explanation of the decline in fertility in the transition process repeat Notestein’s1 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 researchers of the fertility revolution is the reflection of a more general methodological problem that has not been solved within the framework of the theory of 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 inherent logic does not attract the attention of demographers, who interpret the changes in question only as a consequence of different social transformations, non-demographic by their nature” [Vishnevsky 1991, p. 267].

No one has any doubt that the transition theory “specifies the relationship between socioeconomic change and demographic change” [Hodgson, 1983, p. 7]. The question, however, is how this relationship is interpreted.

It is possible to view the demographic revolution as but the consequence of social and economic changes. Such a view can be found, for example, in the assertion of K. Davis that “the sociocultural transition known as the Industrial Revolution has been accompanied by an intimately related demographic transition” [Davis 1945, p. 5]. In general, whenever theorists face considerable demographic changes, they attempt not to explain these changes by the internal logic of the revolution itself, as an autonomous historical and demographic process,

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[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].

but seek external explanations for them. The reduction of fertility, changes in marriage and family, etc., are considered only the consequences of changes in economics, politics, culture, etc.

But historical events can be viewed otherwise. The decline of mortality in Europe, which had begun 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 equally important result of earlier changes, including (and perhaps primarily) demographic ones.

Hodgson argues that demographic transition theorists considered fertility as a dependent variable, i.e. they felt that its level could always be understood by analyzing the components of the social system that influenced it, and he proposes the reduction in mortality as the first such component [Hodgson 1983, p. 10].

But in doing so he implicitly recognizes, firstly, the exceptional role of the decline in mortality as a cause of the decline in fertility, while the appeal to this cause has not, or has not fully, satisfied the theorists he mentioned. Secondly, he interprets the decline in mortality as a social rather than a demographic process. This is correct, if we consider all processes occurring in and controlled by human society to be social. But it is not correct if society is understood as a complex, functionally structured system, where, in addition to other subsystems, there exists a relatively autonomous demographic subsystem with internal mechanisms for maintaining the demographic equilibrium.

The more correct position, it seems to me, is that of D. Reher, as set out in his relatively recent article. "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].

The eschatology of the theory of the demographic revolution

By eschatology in this case we mean the concept of the ultimate result to which the demographic revolution leads. The position of the theorists of this revolution was contradictory from the start, a fact 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» over 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 had been written by the representatives of the natalist school, precisely because, in spite of the preconceptions of the school, new facts which could completely destroy the former natalist concept were presented with great force [Koulicher A 1934, p. 257].

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 20th century, the representation in the social sciences of society as a complex system with internal sustainability was already firmly established. As Talcott Parsons wrote, "because they develop over long periods and under widely varying circumstances, forms of social organization emerge which have increasingly broad adaptive capacities" [Parsons 1966, p. 10]. It would seem that demographers too 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 went the other way. He considered society as a totality of atomized individuals, among whom the «principle of rationalization of life» spread, giving scope to different feelings and calculations. Among them "there are also selfish feelings, which make people consider the child as an expense and an inconvenience <...> And it can be observed that the role of selfish feelings is becoming greater and greater" [Landry 1987: 739].

In so doing, Landry lured generations of demographers into the «pessimistic eschatology» trap, according to which the demographic revolution deprives people of incentives for having children and thus creates the preconditions for an unbridled decline in fertility. Demographers are constantly looking for «factors» influencing people's «feelings and calculations», and try to influence these factors, in particular, with population policy measures.

I have long sought to oppose to this approach another one, which I have called «systemic-historical» [Vishnevsky, 1982]. This approach requires the delineation and consideration of a relatively autonomous demographic subsystem of society with a sustainable «internal environment» and therefore a capacity for homeostatic 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 a system was for a long time interpreted as unscientific, mystical. «Pas d'équilibre providentiel» is the title of a section in a book by the French demographer A. Sauvy. «Fatalism or passive

belief in points of equilibrium and natural reactions are the most pernicious venom that can poison a people» [Sauvy, 1966, p. 166].

The American demographer C. Westoff, in an article with a distinctive name, "The return to replacement fertility: a magnetic force?», was skeptical about "a metaphysical assumption that some homeostatic device will operate to maintain the nice balance", and criticized the UN's demographic forecasts for European countries for being based on this «mystical assumption»: they "seemed to have a compass-like magnetic force that pulled these countries out of their flirtations with population decline and restored demographic equilibrium" [Westoff 1991, p. 227-228].

Russian demographers too are wary of mysticism and fatalism. They are disturbed by the «philosophical fatalistic» (or «Demo-Hegelian «) line of argument 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 (Demo-Hegelianism diligently bypasses this issue)» [Medkov 2002, p. 371-372]. «There is an assumption of the inevitability and irreversibility of historical processes which easily transitions into a fatalistic view of the changes taking place, changes that are beyond the control of human actions, that occur in spite of people and lead to a predetermined end result...» Within this framework are built the phases of the demographic transition leading ultimately to a balance of low fertility and mortality» [Antonov and Borisov 2011, p. 241].

The rejection of mysticism 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 Ludwig von Bertalanffy, the creator of the general system theory, wrote, «Concepts such as wholeness, organization, teleology and directiveness appeared in mechanistic science to be unscientific or metaphysical. Today they are taken seriously and as amenable to scientific analysis» [Bertalanffy 1962, p. 4].

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». It is even more a question of whether the theory of demographic revolution can really be considered a theory, or under what conditions it could become one. The widespread descriptions of «models», successive stages of the demographic revolution/demographic transition, etc. do not allow us to go beyond the descriptive level and, in fact, do not give reason to speak of a theory in the full sense of the word. To use the above-mentioned expression of P. Demeny, it has not yet, despite its great potential, «condensed» into a 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 processes being studied and to the entire social system in which these processes occur.

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