

## POPULATION GEOGRAPHY

**María Carmen FAUS-PUJOL** and **Antonio HIGUERAS-ARNAL**,

*Department of Geography and Spatial Organisation, University of Zaragoza (Spain).*

**Keywords:** Ageing, demographic structure, demographic transition, demography, emigration, fecundity, geographical systems, immigration, mortality, new geographies, population geography, way of life.

### Contents

1. Introduction to Population Geography
  2. The current state of Population Geography
  3. The world population
  4. The agricultural models
  5. The demographic transition
  6. Evolution of the European pattern of growth
  7. The American pattern of growth
  8. The models of quick transition
  9. Perspectives on Population Geography
- Glossary  
Bibliography  
Biographical Sketches

### Summary

Geography of the Population is one of the most well established branches of General Human Geography. Although there are endless tendencies and currents within Geography, many geographers, following the geographical tradition of the beginning of the 20<sup>th</sup> century, maintain that Geography studies the relations of humans with their environment. For many of these geographers, Geography is, above all, Human Geography, where population constitutes practically the only topic of study, although with many centers of interest. One of the questions most studied by Geography of the Population is the distribution of human beings over the surface of the earth and the numerical growth rate of humankind. This growth is not even. Whilst in some regions the population grows exponentially, in others it remains the same and even decreases. This has permitted establishment of different geographical models of population growth, defined by the different levels of relative importance that demographic variables, such as birth, death and migrations have in them, all of which is generally related to socio-economic and even political factors.

### 1. Introduction to Population Geography

In a generic sense, Geography is in charge of the distribution of facts and phenomena over the terrestrial surface. In a more concrete sense, Geography consists of the “study of the terrestrial surface and of the phenomena that mutually affect it”, according to the classic definition of Richthofen. Extending this definition to Population Geography, we can accept that Population Geography studies the distribution of the human population over the terrestrial surface and tries to explain the differences that such populations of

some places present compared to others, like structure, internal dynamics, space mobility, way of life, activity, etc.

Like most disciplines, what we today know as Population Geography has had a pre-scientific stage as long as human history. Human beings have always felt curiosity to know who their neighbors were, how they were organized and what they could expect or to fear from them. The discovery of America and the great explorations of the XVIII and XIX centuries allowed us to know of the existence of towns and cultures ignored until then. As time passed the observation and study of the diversity of populations that occupy the earth and their peculiar way of being organized to live and to exploit the territory has given rise to a multitude of scientific disciplines and, among them, to Human Geography.

In 1882, Ratzel published the first volume of his *Anthropogeography or Geography of Humans*, which is considered as the first modern treatise on Human Geography. This treatise has a subtitle “Foundations of the Application of Geography to History.” But the second volume, published in 1891, was subtitled “The Geographical Distribution of Humans.” From then on, the Human Geography has been enriched with the study of a host of facts that are the material and social expressions of human activity on earth. However, this activity is conditioned by the characteristics of the different populations and its technical capacity and of social organization, from there the importance that at the moment is given to Population Geography. Most geographers agree in this appreciation. Hettner, one of the great theorists in Geography of the first half of the XX century, ends up insinuating that population is the foundation of geographical studies.

In the last third of the XX century, coinciding with the appearance of what are called “the new geographies”, a deep debate was raised that has still not concluded, about the nature of population Geography in general, and of all the branches of Geography in particular, among them, Population Geography. The debate was justified by several reasons. In the first place because of the publication of the *Theoretical Geography* of Bunge in 1962, young geographers believed to have suddenly discovered the scientific paradigm. This put them under an obligation to use technical and “scientific” procedures of analysis, which, according to the positivism principles, should be preferably quantitative. This made the population's many geographers fall into the domain of the demography

If we ignore Physical Geography, it is not an exaggeration to say that the development of Geography in Europe during the first half of the XX century was conditioned, implicit or explicitly, by the role attributed to the population in the configuration and development of the geographical systems. The great geographers of the French geographical tradition, Vidal de la Blache, Demangeon and Brunhes, among others, gave a capital importance to population studies, although with different focuses. Demangeon defines Human Geography as “the study of the relationships of humans with the physical means” or rather “ study of the human grouping in its relationships with the geographical means.” In both cases, Population Geography, as a fundamental component of Human Geography, always has a close relationship with the physical means. These relationships are not necessarily causal, like it pointed out the determinism *decimononic*. It is interdependent relationships that are established among the elements of the system and of these with everything to which they belong. Vidal de

la Blache, in his posthumously published work “*Principes de Géographie Humaine*” dedicates more than half of the work to questions relating to the world population. Brunhes on the other hand, is very concise when describing the world population's characteristics, but gives great importance to the human activities that leave their mark on space, those which, logically, depend on the population's technical and cultural capacities.

The geographical systems, like all the systems, according to the traditional definition of Bertalanffy, are heterogeneous, complex, dynamic and open. But the geographical facts are characterized, in turn by the territory or space. “The geographical thing” it is always identified, even in the colloquial language, with the space thing. For that reason, in spite of the new average *epistemológicos* that arise in the environment of Population Geography after the Second World War, many geographers remain faithful to the geographical tradition that goes in the foundation of geography. In this way, Woods maintains that “Population Geography (. . .) is the study of Population using the spatial perspective.” Pacione, in turn, insists on the same idea when saying that “Population Geography is characterized by its particular perspective in spatial aspects of populations.”

The *epistemológico* debate opened up in the last third of the XX century about the nature of Geography and tried to clarify if the population's Geography should be considered as an autonomous discipline or if, on the contrary, it should continue being a branch of Human Geography. The debate has not still concluded and has seen many zig zags. Although with a winding direction, the debate has opened new horizons to Population Geography and it has consolidated its scientific profile. On the one hand, they have incorporated study topics related to the social and cultural organization of the towns, sustainable development, the internal and external mobility of the populations, etc. Likewise, it has shown the need to use in the study of the technical populations of quantitative analysis similar to those that demography uses. The introduction of new quantitative techniques of analysis has given scientific consistency to Population Geography, even at the risk of making a mistake with other disciplines, such as Demography. Geographers have discovered the value of demographic techniques and the demographers, in turn, have discovered the value of space as a differentiating element of the demographic phenomena. Hauser and Duncan (1959) give the following definition of Demography: “the study of the size, territorial distribution and composition of population, changes therein, and composition of such changes, which may be identified are birth rate, mortality, territorial movements and social mobility (change of status).”

This definition incorporates most of the elements that Population Geography studies, but the disciplines, demography and Geography, haven't made a mistake. Demographers have made an eminently statistical science of their discipline. Geographers, without giving up the use of rigorous mathematical procedures for the analysis of populations, center their interest, on the relationships that are established among the elements of the geographical systems in which, the population is an element more than the system. The demographic systems cannot be dissociated from other geographical and territorial systems. For that reason, Population Geography often finds the explanation of the facts that one studies in economy, political science, sociology,

demography and other disciplines. With the result that Population Geography, as happens in other branches of Geography, lacks its own limits.

## **2. The Current State of Population Geography**

Although traditional Geography gave great importance to population study Population Geography hardly had relevance, until after the Second World War, perhaps for the lack of a solid theory about the nature and purpose of this part of Geography. In the fifties, a first generation of geographers tried to give a scientific content to Population Geography as an individualized branch of Human Geography, but without disrupting it from the common trunk: Pierre George (1951 and 1959), Jaqueline Beaujeu – Garnier (1965 and 1966), Glenn Trewartha (1953 and 1969), John Clarke (1965 and (1971), Wilbur Zelinsky (1966) and many others. To this first generation of the population geographers other generations have already appeared which are very numerous, among which we find the following names: Noin, Chandna, Sidhu, Ortolani, Kuls, Bähr, Levi, Mertins, Woods, White, Jones, Pacione, Casas Torres, etc. .

The consolidation of Population Geography as a branch of Human Geography has favored the appearance of numerous methodological and conceptual tendencies and it has diversified the study topics. The first current that we can name is traditional. Their centers of interest keep a close relationship with the questions always approached by Human Geography: the population's distribution, growth and demographic structures, migrations, etc., although the current focuses are different from those in the past. In this way, the population's quick growth, especially in the less developed countries, or the migrations, is not perceived now as a local problem, but global.

The modern currents are more difficult to frame, but in general lines there are two very fertile and promising study environments for Population Geography: that of ecology and that of sociology. Both tendencies are not new in Geography. Population studies carried out from the ecological point of view are as old as Human Geography and periodically acquire greater or smaller importance than the environmental paradigms acquire. In the last decade of the XX century, Population Geography leaned with determination towards studying the population in its own territorial context. In the International Congress of the IGU which took place in The Hague in 1996, the “Commission on Population Geography” passed to be denominated “On Population and Environment.” With this denomination change it was desired to mark the difference, without a doubt, between demography and Population Geography.

Ecology is usually defined as the study of live beings in their environment. In their condition of being alive, man is unwrapped in a certain natural atmosphere, for which man's natural ecology exists. But contrary to what happens to other species, the bonds that are given between humans and their means are not fixed. Man is able to adapt to any natural means, of modifying it for his own benefit and even of creating it former *ex novo*, when the natural conditions are clearly adverse, if he has the technical instruments for it. Man is also able to be organized socially and of creating his own social environment. As a result, next to natural human ecology, very far from Geography, there exists a field of social ecology that attracts the interest of many human geographers. Already in the first third of the XX century, Barrows, the creator of the

School of Human Ecology of Chicago, maintained that Human Geography was not, in fact, more than Human Ecology.

In the first states of the civilization the relationships man-means was defined by the pre-potency of the physical means on the man. But as the civilizations have evolved social and technically, the pre-potency has changed sense: at the moment, in most of the world the subordination of the natural means to the man is almost absolute. This has made that the population geographers have found new centers of interest in the study of the negative effects that man's pre-potency originates in the natural means. Next to the traditional questions of the geographical studies on the population, in the specialized magazines it is frequent to find works that are about the environmental impacts due to degradation of the environment that it produces, the sustainable growth, etc.

The role of the physical means on man has always attracted the attention of geographers, which has made progress in the knowledge of the human populations. However, it has also fed some average *epistemológicos*, like the geographical determinism, already mentioned that had a great predicament in the second half of the XIX century and first decades of the XX century. The Geographical Possibilism attributed to Vidal de la Blache and the concept in way of life in fact sought to look for an alternative to the determinism.

Another tendency very developed in current Population Geography is the sociological current. All the geographers coincide in pointing out that in the study of the human populations what interests us is not the individual, but the socially organized man. This is, in fact, the idea that underlies the definition of *genre de vie* of Vidal de la Blache. Although not explicitly, Vidal attributed to those “good” or “bad” the condition of the physical means that some areas of the terrestrial surface were more populated than others. Man, socially organized, Vidal says, takes advantage of the possibilities that nature offers him and he takes advantage of them in one or another way according to his cultural level and civilization type. The effectiveness in a certain way of life depends, according to Vidal, on the technical and organizational capacity of the socially organized groups.

This idea stayed during the whole first half of the XX century, but immediately after the second world war, inside the renovating movement of Geography, new tendencies appear in the Human Geography and, consequently in Population Geography. Modifying the concept in the way of life of Vidal, Derruau maintains that, at the moment, given the development degree reached by most human societies, the possibilities are not in nature, but with the socially organized man. Le Lannou, on the other hand, defines Human Geography as the “study of inhabitant man”. And he still sums up more his definition saying that “to inhabit is to live in a portion of the planet and thus to have to satisfy the primary needs and, in a certain measure, a certain number of secondary or acquired needs.”

The definition of Le Lannou has opened new horizons in population study. It is evident that the human populations live in some place of the terrestrial surface, but it is also certain that not all the populations have the same capacity to satisfy their primary needs (feeding, housing and dress) and much less to satisfy the secondary or acquired needs. During the first decades of the XX century it became fashionable among the

geographers, to speak of the *ecoumene* and of the *anecoumene*, that is to say of the populated and uninhabited portions of the terrestrial surface, trying to relate the intensity of the population with the natural conditions. Although it cannot refuse the influence of the physical means on the intensity and distribution of the population, the natural means, as Derruau points out, are not already the absolute determinant factor of the population distribution. Historically, the economies of subsistence depended almost completely on the physical means, but in a global world like the current one those hardly have meaning on a world scale. Globalization is a process that facilitates the convergence of the demographic variables, but it is still necessary to wonder why a great part of the surface of the earth is uninhabited, in some areas the population grows vertiginously and the densities exceed 1000 h/km<sup>2</sup>, while other are deforested.

The traditional question of “where people live” that gave origin to the concept of population density, has given way to another much more interesting concept from the sociological point of view that is “how people live.” It is not to overlook the first question, but of analyzing the conditions of that population life that, generally, keep some relationship with the discharge or low population density. In the densely populated towns of Southeast Asia and in the urban environment of the big cities, the bad living conditions are attributed from, to the excessive demographic concentration on the space. But the living conditions are also faulty in the rural areas that age quickly as a consequence of the emigration and the drop in fecundity. In the first case, the living are degraded by inadequacy of the socio-economic system to satisfy the population's needs; in the second, the degradation of the living conditions is the consequence of the inefficiency of the productive system for abandonment and the population's inability to maintain a sustainable growth, due to the scarce population and to its high rate of ageing.

Traditionally, an indirect way to refer to the living conditions was by means of the comparison of the rent per capita of the different countries. Although this practice is still being used, population geographers now introduce other variables in their studies, like the composition of the family, the reached instruction level, the prevalence of certain illnesses, the activity type, etc. that express much better than the rent per capita what we have denominated living conditions. They can give a host of examples. On a world scale humanity has enough resources so that nobody dies from hunger. However, the daily experience indicates that, on a regional scale, the shortages are very severe and that for diverse reasons periodic famines take place in some parts of the world. Epidemics and endemic of difficult eradication are manifested by the impossibility that affected people consent to the appropriate medication, and people's massive and involuntary displacements as a consequence of confrontations taking place among towns, or cultures.

The study of the living conditions constitutes one of the centers of interest more worked by the population geographers from the sociological perspective. The human populations are unwrapped in an evident dichotomy: a) developed countries and b) less developed countries. The population of the first is equal to a third of humanity but has access to 80% of the world resources. The seconds that harbor humanity's other two thirds have to live with the rest, that is to say, with 20% of the world resources.

For the same nature of the facts, the centers of interest that attract the population geographers and the methodologies that they use for the study of the same facts in the developed countries and less developed have to be necessarily different.

Apart from evident historical reasons, this socio-economic dichotomy obeys the condition that the population's distribution over the terrestrial surface and the areas of more production of resources do not correlate with each other strongly. The traditional solution to this problem has been emigration. In fact, among the traditional topics of Population Geography, that of the migrations today acquires new meaning. The universal declaration of human rights that equips all the men in dignity, rights and obligations, suggests that migration is man's natural right, since it is usually a suitable instrument to improve the living conditions. However, every day it is more difficult to exercise that right. The current territorial conception of the national states hinders the international migrations that outline enormous difficulties in the entire world vastly.

The differences between the states of well-being and of possibilities of the developed countries and less developed have never been perceived with so much clarity as now. The time of the great discoveries that took place in the XVI century raised some philosophical-anthropological currents that questioned the anthropological unit of mankind. In the XIX century, in spite of the great contribution that the French Revolution had made to the recognition of human rights, it ended speaking of “inferior races” and of “superior races”, which, really was a way of ethically justifying the consolidation of the colonial empires of the time. At the moment nobody maintains these positions. All accept the essential equality of human beings, although the differences of all types that exist between some populations and others are recognized. These differences manifest themselves in many ways, but from the point of view of the Population Geography they are usually analyzed through “living conditions.”

The study of living conditions has been one of the most fertile conceptual and methodological advances inside the sociological environment of Population Geography. The living conditions establish the reference mark for the study of the populations. One doesn't live in the humid tropical areas as people do in the deserts, in the big cities or in the small rural villages, either in the mountain areas or next to the sea. The “inhabitant man”, according to the expression of Le Lannou, looks to satisfy his primary needs, in its biological bigger part, plus a group of secondary or acquired needs that, for their “cultural value”, end up becoming primary needs. The “welfare society ” which is one of the achievements most appreciated of the developed countries, is based to a great extent on the widespread satisfaction of these needs.

The satisfaction of human needs, primary or secondary, constitutes one of the reasons of concern for the governments, economists, sociologists, ecologists, etc. on a world scale. In many countries, those which are less developed, the concern is centered on the satisfaction of the primary needs, while in the developed countries that on the whole have sufficiently satisfied their primary needs, the social demands and the government politicians go toward the satisfaction of the secondary needs. The primary needs have a physiologic limit that you can measure and to calculate inside very narrow intervals: each person needs to consume a certain quantity of foods that is expressed in calories daily. But the acquired needs do not have limit, for which they are very difficult to

satisfy. The governments and politicians that try to please their citizens often outline problems of degradation of the environment, and of something sustainable, as was defined in the summits of Tokyo and Rio. The studies of social welfare and the sustainable development constitute two of the study topics often worked by the young generations of population geographers.

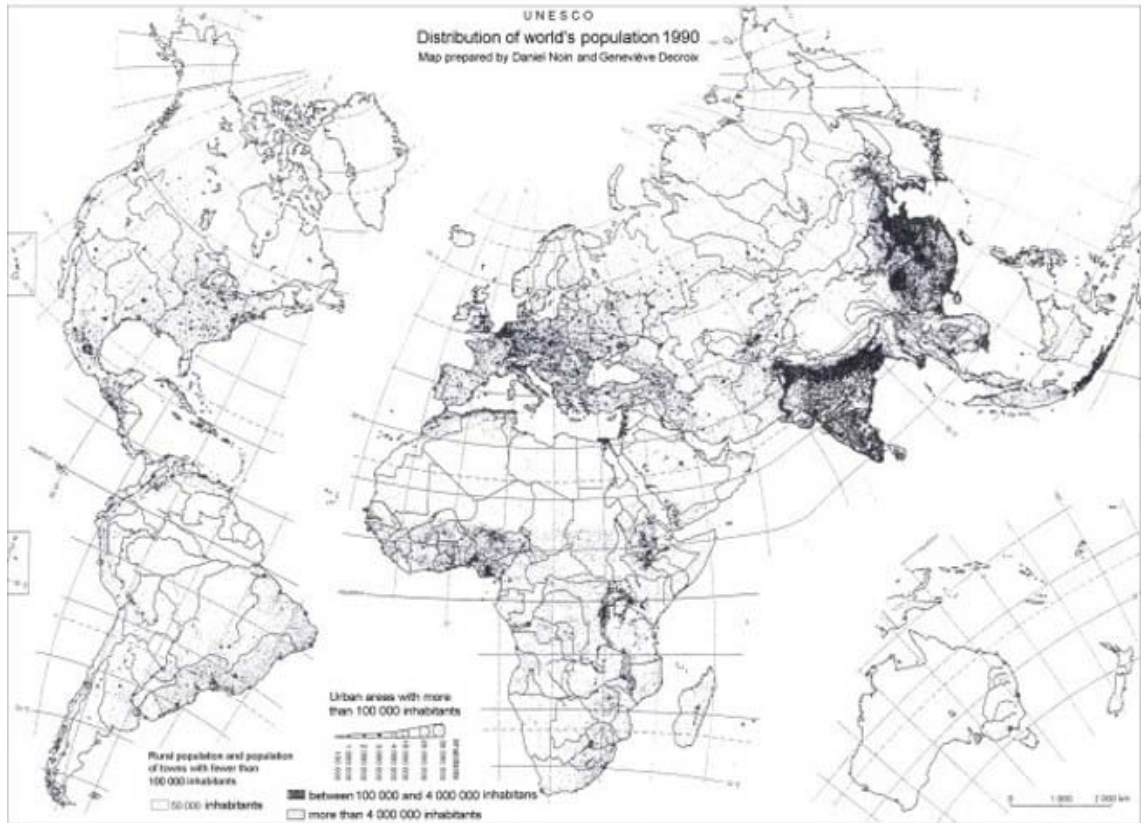


Figure 1. Map of World population ( by Daniel Noin. UNESCO, 1997)

TO ACCESS ALL THE 22 PAGES OF THIS CHAPTER,  
Visit: <http://www.eolss.net/Eolss-sampleAllChapter.aspx>

### Bibliography

Beaujeu- Garnier, J. (1956 – 58). “*Geographie de la Population*, Vol. I, 435 pp. Vol. II , 574 pp. Paris: M. th. Génin. [ A fundamental text for the knowledge of the world-wide population]

Clarke, J.(1965). “*Population Geography*”. 175 pp. Oxford: Pergamon. [This work is oriented to the formation of university students]



George, P.(1951).” *Introducción a L'étude géographique de la population du monde*”, 288 pp. Paris: INED.

\_\_\_\_\_ (1959). “*Questons de Geographie de la population*”, 232 pp. Paris: INED. [In the scope of the Geography of the Population they are two fundamental works by its important conceptual contributions]

Noin, D. et al.(1997). “*Distribution of the world's population*,” Map Scale 1/15.000.000 in “*L'humanité sur la planète*”, 46 pp. Paris: UNESCO. [It is an excellent recent map of the world-wide distribution of the population elaborated with very precise information]

Trewarta, G. (1969). “*A geography of population*”, 185 pp. New York: J.Wiley. [It is a classic treaty for the study of the Geography of the Population]

Zelinsky, W. (1966). “*A prologue to Population Geography*”, 150 pp. Englewood Cliffs NJ.: Prentice-Hall. [It is a fundamental work that it mainly raises questions related to the growth of the population and the demographic policies]

### **Biographical Sketches**

**María Carmen FAUS-PUJOL** . (1976) Dr. in Geography. (1982) Prof. Tit. of Geography. University of Zaragoza. (1988-1992; 1996-2001; 20012004) Full member of the Commission on Population Geography and Environment. International Geographical Union. (IGU) and Associated member (1992-1996). Advisory in Spain of the International Journal of Population Geography (since 1995). The rural depopulation and environmental degradation in the Mediterranean countries, aging of the population, and the migratory movements are some of hers topics of research, whose results have given rise to more than fifty articles and some books, like for example, (1994) “*The process of depopulation – repopulation in arid regions of the Ebro Valley (Spain)*” 23 pp. UNESCO/IUSSP/IGU. Liège (Belgium) and (1998) “*two examples of environmental transformation in dry Spain*” in “*Population and environment in arid regions*”. pp. 105-131. UNESCO: The Parthenon Publishing Group. Paris

**Antonio HIGUERAS-ARNAL** is Professor of Geography since 1965. Firstly in the University of Santiago de Compostela (Spain) and later in the University of Zaragoza (Spain).At present he is Emeritus Professor in the University of Zaragoza with docent and research responsibilities in the Department of Geography and Spatial Organisation, where directs a group on Population Geography. Most of his extensive investigating work has been directed to study the causes and the effects of the depopulation in the rural areas. Their last works talk about the consequences of the relative aging of the population in Western Europe and the probable evolution of the European model of population increase.