

WOJNA I SPOŁECZEŃSTWO



DEMOGRAPHIC ASPECTS OF WAR AND ARMED CONFLICTS

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Abstract

This study analyses the relationship between war and population, and the impact of the growth and decline of population on important types of warfare – armed conflicts and classic war. At its root, the importance of the link between demography and war is the relative capacity of a given political unit's population to aid in its defence or to threaten other political units. For this reason, population increase and decrease have always been identified as vital security issues. Demography and war will continue to be an important and policy-relevant topic.

Key words: war, armed conflicts, demography

Demographic theory of war

The genesis of the demographic theory of war has to be traced back to ancient times, as it is derived from the views of Heraclitus of Ephesus, Stasinus from Cyprus, and Plato. These representatives of ancient philosophical thought argued that excessive population growth, in particular, uncontrolled by the state, while not keeping up with producing consumer goods, especially food, leads to wars, above all aggressive wars. For example, Plato argued that the owner of the land will not be able to always feed the excessive number of its inhabitants, which very often leads to the concept of broadening it, at the expense of a neighboring country, and this, in turn, is the most common cause of wars. Therefore, Plato supported the idea of birth control, but made in an automatic way by the people who feared that excessive population growth, would be the cause of poverty and war. Such conviction was the basis for developing a comprehensive demographic theory of war.

The main research problem of the article is the question: How do demographic aspects affect the image of contemporary wars and armed conflicts? In addition, as a hypothesis, it was assumed that war broke out through uncontrolled and ever-

increasing demographic pressures. The warlike demographic cycle consists of two successive phases: the destructive phase and the compensating phase. The destructive phase begins with the moment hostilities begin and continues until the cessation of the war. For this phase, it is characterised by an increase in the number of deaths. Other phenomena are also disturbed. There is a decline in the number of marriages and, consequently, a decrease in the number of births. In turn, the compensation phase begins at the end of the war. The number of marriages is growing, and numerous new births follow the newly married couple. There is a baby boom phenomenon. Consequently, wars are alternately causing high and low birth rates to occur making characteristic waves of demographic processes.

The main thesis of the demographic theory of war is the assertion that the fundamental driving force of history is the demographic factor, and so the birthrate and population density. This theory is based on the conviction that demographic factors, that is population, influence the development of society, and also the formation of wars. According to this theory, the main cause of war is connected with the contradictions between population growth and the ability to ensure adequate minimum means of subsistence for the rapidly growing population.

The demographic theory of war, in the most widespread version of it, was developed by Thomas Malthus, and is sometimes named after him as Malthusian theory. Malthus predicted that population, in the absence of external constraints, doubles its size in 25 years, and the number grows exponentially. "Population – in the absence of obstacles – is increasing exponentially. Livelihoods increase only in arithmetical progression. Even minimal knowledge of arithmetic is sufficient to establish unprecedented strength of the first agent in relation to the other. This causes the existence of constant obstacles to population growth, leaving the difficulty of living. This difficulty must arise and must, according to necessity, be sharply sensed by a large part of humanity"¹. The imbalance between population growth (geometric progression) and the increase of living (according to an arithmetic progression) could be limited, according to Malthus, and even offset only by the constant action of harsh laws which need obstacles to force higher order². It is the strength of a higher order, that is, war or armed conflict, the only force that can maintain a balanced population growth and livelihoods.

According to T. Malthus, the main source of war is identified with the disproportion between rapid population growth and a quantitative increase in food production trailing behind. War, according to T. Malthus, can play a significant role as a regulator, limiting the rapid population growth. However, he called on the conscious and deliberate organisation of war, or not to oppose epidemics or natural disasters, because he considered them to be a huge disaster for mankind. Nevertheless, they constitute a lesser evil than the prospect of the total disaster of mankind. In addition,

¹ T. Malthus, *Prawo ludności*, De Agostini Poland, Warsaw 2003, p. 69.

² L. Wyszczelski, *Teorie wojenne i ich twórcy na przestrzeni dziejów*, Wydawnictwo Neriton, Warsaw 2009, p. 169.

T. Malthus proves that there are two main causes of wars. Firstly, population pressure and poverty are the most serious causes of wars. Secondly, war solves the problem of population pressure and poverty, because during a war, a large part of the population is killed”³.

Wars have a huge impact on all areas of the development of social life, and especially on the population. The impact of war on the population, in a demographic sense, can be analysed from different points of view. First of all, this impact can be studied in terms of quantity, that is from the point of view of determining the amount of loss of life borne by the population during the war. This is the most important and basic part of the task of studying the effect of war on the population. At the same time, it should be emphasised that the change in the number of population is closely linked to changes in the population structure as a result of the war, because the structure of the population by sex and age and family composition is changed significantly. War has also had a great influence on the indicators of physical development and the ability of people to work (disability). War also affects the level of incidence – the spread of an epidemic is often associated with the conduct of the war, changing the way of life of the population. One cannot emphasise enough the impact of war on the cultural level of the population: literacy rates, the degree of coverage of children and youth teaching in schools – all of this is directly related to the general situation of the country during the state of war.

The demographic theory of war and peace is an integral part of the general theory of the development of society bearing the name of the demographic development theory of society. The main idea of this theory is the assertion that the fundamental driving force of history is the demographic factor, i.e. increase and population density. It should be emphasised that the direction of the population is not homogeneous. There are, generally speaking, two varieties in it. The first of them believe that the higher the population density, and the higher birth rate, the faster the development of society. The second one says that rapid population growth is the inhibiting factor in the historical process. A population factor accelerates historical development only if there is no overcrowding. In the case of the latter, it comes to social antagonisms, revolutions and wars. So the theory of demographic factors in population translates not only into the development of society, but also wars and social revolutions. Therefore, it seems only fair to call it a trend of demographic theory of war and peace.

By demographic theory of war and peace we understand the idea that the source of wars and social revolutions should be traced to the demographic factor, more precisely – to growth and population density. In other words, the demographic theory is the opinion that the main cause of war lies in the contradiction between population growth and the provision of the rapidly growing population of the respective minimum livelihood. Proponents of this view are against representatives

³ Ibidem, p. 172.

of the biological theory of war, certain that the genesis of war lies in the nature of the human psyche, the alleged fighting instincts. Opposed to the ethical concepts which link to the need for wars with the spirit of the historic rights are the rights of absolute spirit.

With the adoption of the principle that the mainspring of the formation of all wars is vigorously developing natural growth, according to consistent evaluation of a war's role in social development. This evaluation is as follows: wars are a necessary evil conditioned inevitably in the laws of nature and laws of demography. They are a great misfortune for mankind because every man wants to live. This is one side of the issue. The second – organically linked with the first – emphasises the ethical moment. It is expressed in the fact that wars are allegedly a necessary prophylactic agent, a natural instrument for the security of mankind as a whole, from disasters of a higher order – the biological death of the human species, which is threatened because of overpopulation. Only as a result of the “regulating” role of nature (war) does society avoid these tragic consequences.

It is customary to think that the first example of wars in close liaison with the demographic factor only occurred in T. Malthus. Historical research, however, refutes this assertion. Among ancient thinkers, we can already find demographic interpretations of the origins of the war. Of course, the scale of interest in this problem was much smaller in ancient times than in the modern period. This is due to the difference in ancient and modern demographic relations. In any case, we cannot be removed from the equation between the considerations of Plato and Aristotle and ideas of Malthus and his successors. Ancient philosophers did not blame nature for the creation of wars, but saw their causes in society. Malthus suggested that wars are a manifestation of the purposeful activity of nature, which thus wants to prevent overpopulation. To trace, even in a fragmented way, the development of the theory of demographic wars, as well as highlight the difference between the views of ancient and malthusianism on this issue, we should briefly discuss the concepts of the ancient thinkers. The first mention of the interdependence between war and overcrowding is found in the works of Stasinus from Cyprus. He attempts to explain the causes of the Trojan War. Opposed to the traditional version of interpreting the genesis of this war, the kidnapping of the beautiful Helen, he argues that the reasons were entirely different. These reasons can be called demographic reasons – population. He understands the wandering of Greek tribes, caused by overcrowding. These tribes grew rapidly numerically and set off to conquer other lands, when they clashed with Trojans. Later thinkers of the era were familiar with the original ideas of Stasinus from Cyprus, and either rejected them or alluded to them. One of them was Plato, who, although he does not mention his predecessor when considering this problem in the *State and the Laws*, was influenced by his views. Plato assumes the possibility, and at the same time, the necessity of his aristocratic ideal state, led by philosophers, making war with its neighbours. The necessity of this derives from the socio-economic conditions. His ideal state will be forced to expand its territories to provide food for its citizens. Initially, residents of the perfect republic are very cautious and prescient, which is expressed mainly in the regulation of birth. This

limitation is dictated first of all by the need to prevent excessive grinding agricultural estates and crafts, and secondly – by effectively counteracting overpopulation, which leads to wars. These people are “not begetting offspring beyond their means”, Plato writes, “lest they fall into poverty or war”⁴.

However, over time, inhabitants of the ideal state gradually become dissatisfied with what they have and want to have something more than nature gives them in their own country. This discontent, and at the same time the desire for something new, is mainly due to excessive population growth causing diet problems for all citizens of the state. The earth, which then was enough to feed the inhabitants, will be too small. An additional reason for discontent, albeit less important than the first, will be the population of the state by “unnecessary” people who cause worry and all sorts of difficulties. These people are “expendable”, e.g. artists. They do not care about the welfare state, with its strength and vitality, but they have in mind, according to Plato, only meeting their own needs. Added to this is also the desire for luxury, which not only undermines the moral health of individuals, but also the strength of the state. In this way, withdrawing from the strict rules regulating births, the emergence of “unnecessary” citizens and continuing more forward growth does not necessarily lead to a situation in which the only way out is war with its neighbours. Plato writes: “Then we shall have to cut out a cante of our neighbor’s land if we are to have enough for pasture and ploughing, and they in turn of ours if they too abandon themselves to the unlimited acquisition of wealth, disregarding the limit set by our necessary wants”⁵.

So social processes, leading to wars because of excessive population growth and growing needs, will also take place in different city-states bordering the Platonic republic. This raises the disparity between the limited acreage of land and excessive density of people living in the territory of the state. Aristotle, a pupil of Plato, is in a similar position. He puts forward the view that the people of the state should be strictly determined by the possibility of sustenance. Therefore, it is suggested that the Greek state should not exceed 10 000 citizens. Any increase in this number must bring about, says Aristotle, the need to acquire new lands by the state, which in turn will lead to war.

The views of Stasionus of Cyprus, Plato and Aristotle were developed in later times by other thinkers, but now from a different position. They pointed rather to the fact that with the development of society, the demand for means of material existence of man on that basis bring about fierce rivalry between countries. They also stressed the increased “material desires” and luxury. Thus, for example, Cicero sees the most important causes of war in the unbridled lust of man. The more people, the greater the desires. On the other hand, in the Middle Ages, – in the centuries of domination and religious philosophy, the demographic theory of war was not

⁴ Plato. *Plato in Twelve Volumes*, Vols. 5 & 6 translated by Paul Shorey. Cambridge, MA, Harvard University Press; London, William Heinemann Ltd. 1969..

⁵ Ibidem.

represented. Scholastic philosophers have explained the phenomenon of war to the interference factor of the supernatural.

It was only in the eighteenth century that a growing interest developed in the demographic problem and its impact on the fate of humanity, including the emergence of wars. This interest is conditioned by the action of new demographic laws, radically different from the kind of operating rights in previous eras. The emergence of capitalist relations of production, advancing the industrial revolution further forward, increasing labour supply, as well as the impoverishment of the working masses – all this evokes interest among scholars of demographic factors. They put forward the thesis that rapid natural growth causes impoverishment of the population, especially the population of backward countries in economic terms. At the same time, they discussed the methods and ways for preventing the phenomenon of overpopulation. Therefore, war was in the circle of their interests. They sought to determine whether there was a link between the outbreak of wars and relatively rapid population growth, and the role played by war as a necessary evil in human development. In other words, whether war is one of the preventive measures against excessive reproduction of the population. English clergyman, Thomas Malthus, tried to answer these questions.

T. Malthus looks for regularities governing population growth. He is convinced that knowledge of these regularities, as well as understanding the consequences of rapid population, will force nations to consciously limit the number of births. At the same time, governments where the population is growing relatively quickly will be able to take preventive measures aimed at significant inhibition of the number of births. Malthus believed that natural population growth does not take place by chance, but according to a certain regularity. This pattern is allegedly geometric progression applied to demographic development, more specifically the development of natural humanity carried out according to the principles of geometrical progression. The population increases exponentially in the absence of obstacles. Livelihoods increase only in arithmetical progression.

From the above demographic right, Malthus draws pessimistic conclusions. The disproportion between the rapid increase in population and a much slower development of the means of subsistence may, in his opinion, lead society to a catastrophe. It is therefore necessary to ensure a certain balance between the two factors: demographic and economic. The first one should be by all means limited to “stringent laws of necessity”. This idea Malthus summarised with the following words: “force of population growth is the strength of higher order, because population growth can be kept in balance to the growth of the means of subsistence only thanks to the constant action of harsh laws which need obstacles to force higher order”⁶. That “strength of higher order” lowers the standard of living, work intensification, poverty and disease, dependency layers poorer than richer ones, etc. To avoid more and more

⁶ T. Malthus, *Prawo ludności*, Jirafa Roja, Warsaw 2007, p. 25.

impoverishment of society, preventive measures to counteract the excessive growth of the population should be applied. The author of *Law of Population* therefore asks the layers of poor and middle-income people for “abstinence” in the begetting of children, and recommends marriage at a later age, etc.

The conscious activity of society is one preventive measure. The main measure is a regulating effect on the relative balance of natural behaviour between rapid population growth and the development of the material existence of society. Here, and nowhere else, lies precisely the basis of theoretical and philosophical malthusian assessment of the role of war in human development. Malthus assumes that population growth is achieved according to the geometric rules only if it does not haunt humanity with natural disasters, by which is meant primarily phenomena such as intermittent or chronic hunger, epidemics, natural disasters and war. These disasters, including war, are, according to Malthus, all the hallmarks of a necessary evil. They are the result of imperative need arising from the need to ensure a balance between the state of the population and the state of the means of subsistence. It is natural, says Malthus, as it creates a real obstacle for the laws of population to prevent the catastrophe of humanity, causing wars, epidemics, natural disasters, etc. Malthus, however, does not call for deliberate, conscious organised wars, or to resist epidemics and natural disasters. He believed that these disasters are a great misfortune for the human species, but prevent even greater evil – the total disaster of mankind. War is, according to Malthus, phenomena which nature uses only as a last resort. They cannot be completely avoided, but can be reduced by conscious human activity (birth control).

So, Malthus says that the source of war lies in the imbalance between the rapid growth of population and the growth of food left far behind. Insufficient food causes diet problems and, hence, – leads to a reduction in the population. This process takes place with a natural necessity, resulting from the idea of balance and a proper balance between population growth and the material conditions of existence, if this has not been ensured by other means. If society does not knowingly reduce growth, nature itself makes this treatment. Such assumptions are a Malthusian concept which is a variation of the demographic theory of war and peace.

There are many allegations that the Malthusian demographic theory of war is wrong. One of the arguments is the idea that if the population multiplies exponentially, the Earth would have to count around 60 billion people (at the time of Malthus, Earth had approx. 800 million inhabitants; doubling the cycle of population every 25 years will achieve approximately 60 billion people for the current year). Recent statistics indicate, however, that our planet is inhabited by over 7.2 billion people. For this kind of calculation, supporters of Malthus’ thesis put forward a reservation that does not take into account the effects of natural disasters, famines, wars, etc. But it is easy to justify that these “natural obstacles” could not cause such great havoc to the birth rate, causing a loss of more than fifty billion human beings. The whole history of human society proves that there were never too many people in the world, no absolute overpopulation. Negation of geometric “right” of natural growth does not mean the negation of the rapid population growth that has taken place in recent times. This is

confirmed by statistics compiled, as well as numerous publications by demographers and economists, who try to predict population growth in the coming years⁷.

French demographer-economist, Alfred Sauvy, examined the issues of population, arguing that the rapid progress of medicine, ahead of economic progress, will result in a drastic increase in the population, up to 170 billion by the year 2200⁸. In his view, the land is not able to feed the population. He says that all governments, as well as the whole of society, should be against the imminent danger of overpopulation and immediately take appropriate preventive measures. He believes that the solution to this problem can be made in five ways:

1. Inhibition of medical advances, so increasing the mortality of people. But this measure is highly unethical.

2. Conscious, deliberate unleashing of wars and social upheavals. War fought with weapons of mass destruction seriously reduces the number of inhabitants, and thus leads to a significant inhibition of birth. This road, like the previous one, however, is amoral and anti-humanist.

3. Large-scale emigration and immigration from overpopulated areas to sparsely populated areas and deserts. This possibility is real, but very expensive. This difficulty is further compounded by the boundaries of nation states.

4. The maximum development of all means of production and the use of any production capacity of the Earth.

5. Ways of conscious birth.

The provided information also shows indirectly that the so-called natural obstacles to the development of mankind – epidemics, famine, natural disasters and war – are by no means a necessary evil, they are not a result of “purposeful activity of nature”. All the so-called natural obstacles have their profound social background. For example, at the root of hunger in India lies primarily a source of a social nature, the nature of the relationship of production and the dependence of long-living people of India on British colonizers. Demographic factors are not decisive in the development of society, but not without influence on its course. They can accelerate this development or delay. High population density and rapid population growth in the conditions of systems such as in India intensified the misery of the people, but they were not the source of wars.

War is a social phenomenon and its causes are not in nature, but in social relations. War is received by society as a natural and social phenomenon. Since war is the continuation of politics and thus, in turn, a concentrated expression of economics, we should only look at nature and overpopulation as sources of wars. Acceptance of the theory that wars are caused by overpopulation (situation in which the population exceeds significantly the capacity of the environment) has consistently led to the conclusion that war will take place as long as there will be no general strategy of population growth.

⁷ Example can be a publication of the Central Statistical Office *Prognoza ludności na lata 2014-2050*.

⁸ A. Sauvy, *Od Malthusa po Mao Tse-Tunga*, Paris 1960, p. 76.

Methods for calculating the loss of life

War exerts great influence on the dynamics of the size and structure of the population: increasing mortality, decreasing parity and population growth, reducing the number of concluded marriages. How do we determine the loss the most accurately and correctly? What methods should, at the same time, become the basis of research? There is probably no other area of science in which there has been such a divergence of data that exists in the statistics on the loss of life incurred during war. Not only in times of war, but afterwards, the most contradictory figures for war losses are published. The number from one source of the losses incurred by Belgium and Serbia during World War I is nearly twenty times higher than the number of losses given in another source⁹. Given such a disparity of numbers, a researcher must use different methods to achieve maximum approximation to reality. First of all, a community of people to be covered by the research must be established. The entire population in the war should be divided into two categories: military and civilian to include military officers and men with all types of weapons, located at the front, in reserve, at the back, in hospitals and on leave. In addition to the military, members of the guerrilla forces should be included. All the rest are civilians.

To determine all of the conscripts in the military, sometimes we can use the term “mobilised population”. This term, however, is very useful. Firstly, the civilian population can be mobilised during the war to perform functions of a military nature (e.g. earthmoving, construction of various fortifications). Secondly, part of the army is composed of volunteers who are not mobilised. An example of this is France, where during the 1914-1918 war 229 thousand French volunteers and 40 thousand foreign volunteers participated. In the Spanish civil war of 1936-1939,

35 thousand volunteers from 54 countries fought on the Republican side¹⁰.

Some researchers in the calculation of war losses have avoided the division of the population between military and civilian, using the concept of direct and indirect losses. Frequently, when determining losses, all the losses among the military are considered as direct, and the losses among the civilian population – as intermediate. But this is completely wrong. Direct losses, i.e. as a direct cause of the conduct of the war, may arise among both military and civilians. It is known that as a result of air raids during World War II, more than 1 million people from the civilian population were killed. Even during World War I approx. 5 thousand civilians were killed by air raids¹¹. The separation of the military from the civilian population, however, is only a first step in determining the number of war casualties. The next step in the research is to classify the losses among the military according to the types of losses. Losses in

⁹ Wider: B. Urłanis, *Wojny a zaludnienie Europy*, Państwowe Wydawnictwo Ekonomiczne, Warsaw 1962.

¹⁰ Wider: J. Farndon, *Historia świata: 2000 rzeczy, które musisz wiedzieć*, Podsiadlik-Raniowski i Spółka, Poznań 2001.

¹¹ *Civilian death from air bombardment*, Statistical Bulletin Metropolitan Life Ins. Co.

the demographic sense from losses in terms of military operations should be carefully separated. From the point of view of demographic losses in the military, all deaths, regardless of their origin (wounds, diseases etc.) should be included. From a military-operational point of view, not only the deaths of soldiers and officers, but all kinds leaving the ranks, even temporarily, should be considered. Therefore, the military-operational point of view, the losses – except for the dead – also include captured, disappeared without a trace, and the wounded and sick admitted to hospitals.

In terms of military operations, the term “irreversible loss” is often used for those killed due to various reasons, disappeared without a trace and taken prisoner. In some cases, irreparable loss determined the total number of people who had left the ranks, adding to the number of killed, dead and captured – including soldiers and officers, who as a result of wounds or diseases were released from the army. The term “loss of blood”, which includes a number of dead and wounded, including the wounded and those who were captured, is also used. All these concepts of losses are important from the point of view of military-operating, because they give an idea of their own and the enemy’s military reserves. In order to assess the result of military operation, we need to know how much the state reduced army numbers, regardless of whether the soldiers who left their ranks during the battle and if they returned later to the front or not. From the point of view of human casualties, the result of hostilities shall be determined taking into account not only the number of killed, but the total number of soldiers who – at least temporarily – are out of the ranks of the army. In some calculations, it is expedient that the determination of losses includes the return of part of the wounded to the ranks. With this account, the total number of dead and wounded is reduced by the number of wounded who returned to the ranks after recovery.

Let us dwell on the classification of the loss of life of these types of losses from the military-operational point of view. Typically, the losses incurred as a result of military operations are served with an additional division for the dead, the wounded and injured, prisoners and disappeared without a trace. All soldiers and officers, whose fate the military authorities do not have any information, belong to the latter category. This group usually includes those fallen soldiers and officers whose death has not been established or who were captured in unknown circumstances. The share of this questionable group (missing without a trace) in the overall sizes of the losses depends largely on the nature and outcome of the war. The offensive army keeps much more accurate data about their losses in war and the share of those who “disappeared without a trace” will be in this case smaller. A retreating army cannot always maintain the entire system of counting losses. In fact, in the retreating army most of those who “disappeared without a trace” are those who were captured.

In the literature, we can sometimes end with a different understanding of the same categories of losses. One example is the sharing of all types of losses in addition to the irreversible (they are killed, captured, missing without a trace) and sanitation, which includes the wounded and injured. Irrecoverable sanitary losses should not be opposed. In addition, this classification does not include the loss of basic sanitation

categories such as – the sick. Sanitary losses are divided into combat (wounds, injuries, frostbite, burns etc.) and non-combat (disease, trauma).

Combat losses sometimes oppose sanitary losses. The balance of the combat losses includes all the fallen, missing without a trace, captured, badly wounded and dismissed from the service, and the loss of sanitation – all the wounded and sick. It is difficult to agree with such division. Why are the wounded who left hospital as disabled included in the group of combat losses, and are not counted among the wounded who are cured in hospitals, although both were wounded during the war? More specifically, the sanitation losses should include only those that are actually related to the activities of military health institutions. From this point of view, all cases of hospitalisation, wounded, injured, burned should be treated as sanitation losses. There is also the notion of “fatal loss of health”, which includes all deaths from diseases and injuries, if the patients were in the military sanitary facility or any other therapeutics facility. This notion of loss of health is important for overall assessment of the military medical service. The term “sanitation losses” can also be understood in a much narrower sense, taking into account only the losses due to diseases.

Table 1 shows the classification of war losses. It distinguishes two main groups of losses – combat and non-combat. Each of them is divided into two types of losses: irreversible and temporary.

With a number of the points listed in the table, we cannot do anything else but agree. First of all, a double bill is permitted. The “died in captivity” group enter e.g. at the same time as the “captured”. Dismissed from the army as disabled are also covered by the number of wounded and sick. In addition, the “missing without a trace” group should not be regarded as irreversible losses, but a part of “disappeared without a trace”. Deaths in captivity should be added to combat losses. The mere fact of entering slavery is a result of war, but not all of the consequences of this fact should be considered as combat losses. With this approach, almost every death in the military during war, to a greater or lesser extent, is related to the conduct of military operations, so there would be almost no non-combat losses.

Another type of classification is the classification of losses in the demographic sense. It must be emphasised that the wounded and sick prisoners who have recovered, and those who returned from captivity, are listed in this or any other section or the time irreversible losses in reporting military operations cease; however, they are counted in the category of losses from the point of view of demography. Speaking about the losses in the demographic sense, we mean military deaths from all sorts of causes. While the offices of military invalids discharged from military service are irretrievably lost, from a demographic point of view, cases of disability are not considered to be losses, because the life of the soldier was preserved. The category of losses in the demographic sense, however, requires classification. At first there is a reason for the loss. The cause may be a direct result of combat operations, or may not be directly associated with them. Consequently, all the losses should be divided into combat and non-combat. On the other hand, in the context of combat losses, the dead and the dead from wounds must be extracted. All those who died in the battle,

in individual skirmishes, during the attack, during reconnaissance operations and in general, all who died in the war are counted as the dead. It should also include all the soldiers and sailors who died at sea because their death is usually directly related to the conduct of military operations.

Table 1

Classification of war losses

Combat		Non-combat	
irreversible	temporary	irreversible	temporary
The fallen (died before granting medical aid)	Wounded	Died from diseases	Patients
Missing without a trace	Injured	Died as a result of non-combat injuries	Exemptions holiday (to reserve) due to illness
Captured	Frostbite	Died as a result of suicide	
Died on the way to the first medical point (wounded and injured in the fighting)	Burned	Dismissed due to illness (non-combat injuries)	
Died in captivity	Other injuries sustained in battle (gas poisoning etc.)		
Died of wounds in treatment plants	Exemptions holiday (to reserve) as a result of injuries sustained In the fight		
Dead from other causes related to the fight			
Dismissed from army due to wounds and injuries			

Source: B. Urlanis, *Wojny a zaludnienie Europy*, Państwowe Wydawnictwo Ekonomiczne, Warsaw 1962, p. 19.

In particular, we should stay on the category of those who died from wounds. As a result, the combat death of a soldier or officer may not be instantaneous, but take place some time after the wounding; however, this period varies widely, depending on the length of time that the death of soldiers and officers are noted in various sections statistics. The category of fallen in battle includes not only cases of immediate death, and death on the battlefield, but also includes the dead in the few hours following wounds, for example when a soldier dies as a result of blood loss, not having received medical attention at the time. He died of his wounds, but since it was not known or did not appear in any documents, all such cases are recorded under the heading "killed in battle". Only the fate of those wounded who were in the military records of the sanitary service may be traced statistically and all the fatal consequences of injuries in this category may be covered by the term "died of wounds".

We can see that it is difficult to insert a strict border between the fallen and dead from wounds. The problem arises as to whether the dead should be included in all the dead soon after the reference to mortal wounds. In the German military statistics in the nineteenth century, they attempted to solve this problem using the specified number of hours that a soldier or officer survived the respective wounds. When determining the number of soldiers of the Prussian army who died in the Austro-Prussian war, e.g. in the military statistics, the criterion of 48 hours of life was assumed as mortally wounded. All the wounded who survived 48 hours and died before the end of the year were numbered among the dead from wounds. The losses in the Franco-Prussian border between the fallen and the dead from the wounds were determined according to the criterion; they fell and died within 24 hours of the battle. In such a manner, everyone who died from the wounds within the first day after the battle were classified in the group of killed¹².

The US military health statistics for the dead from wounds during World War II include all the soldiers and officers who died after first aid. Those who were still alive after the battle, but died before the giving of the first aid, were classified in the group of dead, as well as those who died immediately¹³. From what we mentioned earlier, it follows that the percentage of the dead from wounds affects not only the adoption of a particular critique for completing the fallen in war for this or that group, but also the level of military medical service. If injured are taken from the battlefield later, the number of fatally injured is in the category of the fallen and the proportion of the injured died of wounds is significantly reduced. This clearly shows that the percentage of the dead from wounds may be an indicator of the quality of work of the medical service only if we keep the same speed of withdrawal of the wounded to hospitals. Increased transport of wounded leads to an increase in the share of severely injured and, as a consequence, increases the percentage of the dead from wounds.

The speed the wounded are taken from the battlefield has a great impact on the level of mortality due to injuries. In the old wars, the conditions of transport of wounded to hospitals were so bad that many of the injured died on the way. In addition, the group of died from wounds generally includes any deaths in the sanitary treatment facilities as a result of burns, frostbite or injury. Non-combat losses include, first of all the deaths of soldiers and officers as a result of diseases in hospitals, military hospitals and other inpatient settings, the second – all cases of emergency and immediate deaths among the military outside hospitals. The group of non-combat losses we must extract the category of soldiers and officers who died of non-combat injuries (if they have been recognised in non-combat conditions), as a result of suicides and murders, executed by the judgments of courts and field of war tribunals. A separate group includes all deaths in captivity, in particular as a result of starvation and disease. Strictly speaking, death in captivity of wounds

¹² *Zeitschrift des Königlich Preussischen Statistischen Landesamts*, tom 11, number 1-4, p. 268.

¹³ G. Beebe, M. de Backey, *Battle Casualties*, Springfield 1952, p. 9.

received in battle should be included in combat losses. But that was not fully correct, since many of the wounded died in captivity from wounds, and most likely would have been saved from death in their own army hospital. Their death is not so much a result of wounds, but the result of being in captivity.

Let us also note the category “missing without a trace”. This category of loss can exist only in time of war, when we cannot determine the cause of the diminution of the ranks. After the war, the category “missing without a trace” should be replaced by the heading, “missing without a trace, not yet traced down”. With the passage of time since the end of the war, this section decreases gradually because of the fate of missing soldiers and officers. After a sufficiently long period of time, all covered by the category “not yet traced down” should be numbered among the dead, if there is no reason to believe that migration processes are at stake.

However, it should be noted, that not all of the losses incurred during the war are the result of the war. Of course, even if there were a war in a few years, some members of the army will die whilst being a civilian. The life of every man, even at a young age and in times of peace, contains a certain risk of death. We should exclude such deaths, to receive the amount of losses resulting from the war. Therefore, speaking about war casualties, we should distinguish between two concepts: global losses, i.e. the actual total number of military dead in the war, and the particular war loss, the size of which is obtained after deduction of normal (under the circumstances) mortality – the “net loss”, so to speak. This size makes it possible to determine the extent of irreversible losses to be fully attributed to the war. In determining the size of irreversible losses of life incurred as a result of wars, census material is a great help. This is especially valuable when the census was taken shortly before the war and after the war. If the list was made a long time after the war, the results will not only be influenced by factors related to the war, but also occurring in the postwar period.

Materials related to the population of a country in general are extremely valuable from the standpoint of studying the impact of war on the population. These materials, however, show not only the losses among soldiers but also among civilians. From the point of view of the sociology of war, more interesting census materials may be broken down by gender. These materials can be used in two ways: first, by comparing the data only on the number of men and, second, by comparing the data on the number of men and women. The first issue that will be discussed is the problem of using data on the number of men. It is not difficult to understand that a simple comparison of census data from the pre-war post-war census data does not give any idea about the casualties resulting from the war. It can only be set as a long decline in the number of males in the period between censuses. To get the size of the loss of men, to be close to the actual numbers, calculate the hypothetical number according to post-war census data, i.e. determine if the male population would be in the country on the post-war census, if there were no war. The difference between the hypothetical and actual number corresponds to the size of the defect numbers of men, formed as a result of the war. However, due to the war, the loss of males arises not only due to death suffered in the war, but as a result of declining birth rate in general, and

boys, in particular, with a greater mortality among the civilian population and so on. Therefore, the determination of war losses among the military on the basis of the above data is not possible.

The loss of population as a result of war can be divided into four essential elements: 1) soldiers and officers killed and died in the war; 2) the civilian population died as a direct result of the war (bombing, military operations, terror etc.) and indirect impacts of war (increased mortality due to malnutrition, hunger, epidemics, etc.); 3) the number of children lost due to the decrease in diversity during the war; 4) the difference between the number of people coming to the country and the number of people who have left the country. For more accurate data on irretrievable losses among the military service, taking as a basis the data about the number of men with regard to the grouping by age, we can still state the following : how many men there are of certain vintages and how many there should be on a given day, if there were no war. In other words, we should compare the actual census data with hypothetical calculation data, relating to the same age group. The difference between them can be considered as pure losses incurred as a result of war.

Another area for using census materials is the so-called calculation of predomination of women, by which we mean the number of females over the number of men. The differences are often considered to be the equivalent of the number of soldiers and officers killed or died in the war. Such treatment of “women predomination”, however, can often lead to significant errors in the calculation. When analysing “women predomination” it should therefore be necessary to take into account a number of factors and circumstances. First of all, the comparison should be done not for the entire population of the country, but only in relation to specific age groups. If the census was conducted just after the war, it must take into account the age group 18-49 years, and if such was made, 5 years after the war, we have to take into account the population aged 23-54 years. And it should not be limited to the post-war census. The greater number of women over the number of men could also have existed before the war. Therefore, we need to manipulate the data of the pre-war census of the population structure according to sex, on the same age groups¹⁴. Only the difference between the two, “predomination” in the number of women, may give some material to the assessment of the loss of men in the war. If, for example, we assume that for 8 years before the war there were 0,3 M more women than men, aged 8-39 years, and if after a war lasting 2 years (i.e. after 10 years) 1,5 M more women than men, aged 18-49 years were in the same country, then subtracting 0,3 M from 1,5 M, we get the number of 1,2 M. This particular number can give a rough idea of the size of losses among the military. With this kind of comparison, we must, however, take into account the following three very important circumstances¹⁵.

¹⁴ Wider: J. Goldstein, *War and Gender*, Cambridge University Press, Cambridge 2001.

¹⁵ A. Schroven, *Women after war*, Berlin Series on Society, Economy and Politics in Developing Countries, Berlin 2006, p. 43-61.

First – migration processes. It is known that among the emigrants and immigrants, the proportion of men is much higher than the proportion of women. It is therefore necessary to make the appropriate amendment on the basis of data on the distribution of emigrants and immigrants by gender. Otherwise, there is a risk of exaggeration war losses giving credit to the fallen in war to those men who went abroad.

Secondly – the more casualties the civilian population suffered in the war, the less it is advisable to operate a female predominance. There is no doubt that if many wives and sisters of soldiers and officers died in the rear of hunger and diseases, epidemics, air raids and other reasons, the predominance of the number of women over the number of men will give the wrong idea about the actual number of fallen soldiers and officers. Predominance of women can give a real idea about the number of killed soldiers and officers only if the level of mortality among civilians is equal to that of pre-war.

Thirdly – even if there was no war in certain age predominance groups, the number of women over the number of men would increase as a result of higher male mortality than women. It is known that in the formation of a number of men and women in all European countries, regularity consists in the fact that with increasing age, other things being equal, the percentage of males is reduced. Therefore, the majority of women is also growing in conditions of peace. Therefore, in order to make the correct calculations we must enter a patch. In relation to the above example, this means that if, for example before the war, the majority of women expressed in the number of 0,3 M, after 10 years, would increase in this age group to 0,4 M. Losses among the military would not be $1,5 - 1,3 = 0,2$ M people, but $1,5 - 0,4 = 1,1$ M human beings. Without taking into account this fact, there is an exaggeration of war losses among men.

While ignoring the first and third circumstances affects the exaggeration of the number of men killed in the war, ignoring other circumstances will determine the too low level. However, there is no reason to believe that the operation of the above circumstances offset each other. It is quite possible that ignoring other circumstances causes such errors, which are only slightly contributed to mitigating circumstances and can ignore the first and third. Therefore, in each case, appropriate calculations should be carried out on the basis of a whole range of statistics, except to offset the influence of the above mentioned circumstances. If the census was carried out quite late after the war, when using the data of women predominance, we should be aware that the inventory of this kind reflects not only the impact of the war, but also influences the effects of war.

It should also be noted that the censuses exist only in relation to the nineteenth and twentieth centuries. As regards the determination of losses arising as a result of wars in the seventeenth and eighteenth centuries, the material of the census in this era does not exist. By studying this period in a number of cases, we have to use the methods which fix a certain proportion. Based on certain specific factual data. the ratio between the number of dead, on – the one hand, is counted, and the number of dead as a result of diseases – on the other. Reported ratio, characteristic of the era, can later be used in other similar cases, in which there is no direct data. When

determining the number of dead ratio between the number of killed and the number wounded can be used repeatedly. The loss data frequently includes the overall number of dead and wounded. In these cases, knowledge of the correct ratio between the number of killed and wounded can help determine the number of dead. A major help in determining the losses may be a method involving the use of the ratio calculated on the basis of data on losses among officers. With data on the ratio between the losses among the officers and losses among the soldiers, we can – on the basis of data on losses among the officers – determine the total losses among soldiers and officers. Using the critically different sources, using the materials contained in the lists of the people and developing them using a large-scale method for calculating the proportion and resorting to some extrapolation can be – at least approximately – a way of determining the loss of life suffered by the armed forces during war.

The terms of the war period are not conducive to obtaining full statistical information. In the villages occupied by the enemy, the current record of the natural movement of the population often ceases. As for the data on losses of war, they are often incomplete and random, which is connected with the course of the war. In addition, commanders often give false information about the losses of war, trying by all means to minimise their losses and exaggerate enemy losses. Materials that can be considered more or less true, however, also require conscientious checking and comparison. Only then can the individual numbers be used so that, on the basis of the detached, isolated facts, the overall picture of the impact of war can be recreated and lead to the determination of losses that it entails.

Sources of data on casualties during the war are diverse. First of all, official sources, which, with certain exceptions, – can become the basis for calculations. Official data on casualties had a different character in various periods. The first period covers the Middle Ages and beyond – until the beginning of the Thirty Years' War (to 1618). This era did not leave behind any reliable data on war casualties. Only some data about the killed and wounded in the various major battles is preserved and the data raises serious doubts, because we do not have any documents, reports or notes from this period. The second period covers the time from the beginning of the Thirty Years' War to the end of the War of the Spanish Succession (1618-1713). During this period, there are already the first reports preserved today which allow not only the losses incurred in individual great battles to be evaluated, but also those in smaller skirmishes and, in some cases, the information takes into account the division of losses by types. The third period – is from the end of the War of the Spanish Succession to the mid-nineteenth century (1713-1848). From this era, opulent archives with different notes, reports, messages, lists, which in many cases contain accurate data on the size of the army and its changes as a result of various combat actions, including the number of dead, wounded, sick and prisoners have survived. Sometimes the information includes not only individual battles, but the whole campaign. Data on losses during the Napoleonic expedition to Egypt, and the losses of Wellington in Spain is preserved, for example. There was, however, in this era some summary data about particular wars, but no complex data. In the fourth

period, covering more than 160 recent years, there is already official data not only on individual battles and skirmishes, but the whole war.

In the opinion of author of the article, war, as a phenomenon accompanying humanity since the dawn of history, is for the researcher an extremely complex subject of interest and a big challenge. This is due to the fact that it affects almost all areas of the functioning of states and societies. In the future, in order to analyse wars and armed conflicts, one should take into account the theory of demographic transition, which has been the most important reference point in the study of the sociology of war since the mid-1940s. In addition, the analysis of demographic processes in the long run requires a look at a given population for at least 150 years.

From the point of view of the scope of the records of war losses, the evolution of the records can be characterised as follows: in the seventeenth and eighteenth centuries, full records were kept of the losses among the generals, during the Napoleonic Wars – the officers, and only since the mid-nineteenth century, did carefully recording of losses among the rank and file begin. We have data on losses in World War I from the years 1914-1919, provided, however, that they involve all countries. In England and the United States they even published a multi-volume work of the official history of the war and included statistical material. In other countries, it is limited only to the publication of reports of the parliamentary committees. In a number of countries (e.g. Russia, Germany, and England) lists of persons killed, wounded and missing without a trace were published. However, in many countries there is no official data or publications. When calculating the losses of war, in addition to official data, semi-official sources may be a great help. These should include the publishing of various institutions and organisations, published with the signatures of individuals. It should then include the work of historians of wars. Some have developed materials for individual wars, other scholars undertake general studies concerning the wars in a broad historical period. One of the best is a dictionary of battles edited by the French statistician and historian, Gaston Bodart¹⁶.

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