Biological Theories of Population Growth

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Herbert Spencer's Biological Theory:

Herbert Spencer, a famous English philosopher and sociologist, propounded the biological theory of population in his book The Principles of Biology. Spencer argued that fecundity decreases when the complexity of life increases.

According to him, changes in the growth of population occur due to natural change in the reproductive capacity of human beings. Therefore, his theory has been known as a natural theory of population which is similar to the theory of Sadler and Doubleday.

Spencer believed that "there exists antagonism between individuation (survival) and genesis (reproduction)". When any individual does hard work for his personal development at his work place, the desire for reproduction decreases.

In other words, when more energy has been utilised for one's self-development, the energy available for reproduction will be less and consequently the population growth will be less. Thus, with the development of society and for one's success and survival (individuation), life becomes more complex which results in reduction in the capacity of reproduction.

This is observed from the fact that fertility is more in rural individuals whose life is not complex, whereas fertility is low in an industrial society where life is more complex, the pressure of education is more and the brains are overtaxing.

We have four different situations which explain the relation between individuation and genesis:

(i) The individuation will automatically below when there is high genesis. This situation we find among the poor.

(ii) The genesis will be low when there is high individuation. Such a situation we find among the rich.

(iii) The individuation will improve when the genesis is low.

(iv) The genesis will be high when the individuation is low. In poor people, we find less individuation and more genesis.

Moreover, because of high fertility the individuation will be low and therefore the death rate will increase. At the same time because of low individuation, the expectancy of life will also decrease. To Spencer, the expectancy of life can be increased, when the birth rate decreases.

Spencer's theory of population is based on the theory of evolution. According to Spencer, the fertility rate is higher in small creatures. In the words of Spencer, "The minutest organisms multiply asexually (without sex) in their millions." Many small cells do not reach the maturity period.

If this happens and small cells grow in number twice or thrice, population will rapidly increase and multiply itself. Small compound cells get increased in thousands, while big compound cells in hundreds and still bigger cells lose their productive capacity. In the same manner, Spencer explained the fertility of human beings.

According to him, people can be divided in three groups:

(i) Poor people who live a simple life whose fertility is high;

(ii) Middle class people whose fertility is correspondingly low; and

(iii) People who live developed or complex life whose fertility is fairly low.

According to Spencer, in societies where people, especially woman, are educated and belong to rich families, their reproductive power is low, as compared to the poor who are uneducated and whose reproductive power is high.

In the words of Spencer, "In its full sense, the reproductive power means the power to bear a well-developed infant, and to supply that infant with the natural food for the natural period. Most of the flat chested girls who survive their high- pressure education are incompetent to do this. Were their fertility measured by the number of children they could rear without artificial aid, they would prove relatively very infertile."

Spencer believed that if population increases we get more manpower through which natural resources can be exploited and the socio-economic and cultural standards of the people can be raised. Thus, he was of the opinion that increase in population was beneficial rather then harmful.

Further, as per Spencer, a determining factor for birth fate and death rate is longevity. The expectancy of life increases and the death rate decreases when life becomes more complex. He, therefore, suggested increase in life expectancy in order to reduce the birth rate.

Criticisms of Herbert Spencer's Biological Theory:

Spencer's theory of population has been criticised on the following counts:

1. Spencer's population theory is not a real theory but a biological theory.

2. The view of Spencer that fertility decreases due to more complex life has no empirical evidence. There is high fertility rate even in rich families or industrialised societies where people's life is more complex.

3. The problem of population growth itself is a complex phenomenon and therefore it cannot be explained as a biological one.

4. Spencer's view that educated women whose individuation is high would prove relatively infertile, is not realistic. Even educated women have high reproductive power.

5. Spencer's theory that fertility is affected by the natural process of individuation has no justification because when Spencer propounded this theory the birth rate was high in the western countries.

2. Corrado Ginnis's Biological Population Theory:

Corrado Ginnis, a sociologist, was born in Italy in 1884. He had deep interest in the study of population changes which affect the evolution of society and that of a nation. According to Ginni, fertility will be very high in a nation when it is in the primary stage. Due to high fertility, the population increases and consequently social and economic problems become complex.

Further, the problems of trade and industry also become more complex.

At this time, fertility starts declining. "He thought that the evolution of a nation or any society was closely linked to the changes in their rates of population growth and to the varying propositions of this growth coming from the different social classes."

Ginni was of the opinion that only biological factors are responsible for the increase in population and therefore his theory of population can be characterised as a natural law theory. According to Thomson and Lewis, "Ginni invokes some mystical biological changes, quite beyond man's control, as the basic factors determining not only man's quantitative growth, i.e., his fertility, fecundity, and survival but also his qualitative development, i.e., the distinctive characteristics of man's different civilization."

Moreover, the biological traits of population change at various rates of increase in the different classes of population. According to Ginni, "There is first a period of slower growth and mature achievement which, in turn, passes into a period of senescence, during which numbers decline and the quality of utilization deteriorates."

Ginni was of the view that social and economic factors can influence the population growth but the reasons for the increase or the decrease in population growth are only biological. Thus this theory is based on biological aspects.

According to Thomson and Lewis, "Ginni believed that the biological factor in declining fertility was the fundamental factor, that it really underlays the influence of economic and social factors, which only apparently determined the decline in fertility."

Ginni believed that the population growth is similar to the cyclical growth of an individual. In the first stage, the growth of population is very rapid while in the second stage, the growth is comparatively slow. In the third stage which is known as senescence, population decreases and there is deterioration in the quality of civilization.

As pointed out by Thomson and Lewis, “Every nation in its youth is simple and undifferentiated in structure and has a high rate of fertility, because each generation springs from the people who are hereditarily most prolific, i.e., highly fecund.”

Ginni was of the opinion that due to high fertility population increases and consequently social and economic problems become complex. Along with that industrial and trade problems also become more complex, the pressure of population is ultimately reduced through war or colonisation or both.

According to Ginni, first the fertility rate declines among the rich. After that when the energetic and prolific poor people enter the rich class, their fertility also decreases. When the whole society or country becomes rich, there is decline in population growth due to the weakening of the reproductive instinct.

Ginni concludes:

“It is a providential mechanism for the elimination of those family stocks which have fulfilled the cycle of their evolution.”