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THE SOCIO-BIOLOGICAL AND HUMAN-ECOLOGICAL NOTIONS IN *THE TIME MACHINE*

H.G. Wells depicted the future of mankind in *The Time Machine*.¹ Aware of the high number of other essays dealing with this topic, the present authors have selected this work as it was both his first and most comprehensive work, casting light on the full scope of his oeuvre: the ultimately pessimistic fate of humankind. Each early Wellsian work was one stage leading towards the final destiny, but it was *The Time Machine* which, as a program-novel, gave a broad view of the Wellsian picture of evolution in the remote future.

The Time Machine is mainly restricted to the description of the Time Traveller's experiences about the future of humankind and its planet. So the question of why the author created such a picture of the future still remains to be answered. It could be considered an ad hoc interpretation with no special concept, but this supposition is diametrically opposed to the fact that the processes described in *The Time Machine* can well be interpreted through a reading of contemporary socio-biology and human ecology, and this is the aim of the present paper. Aware of Wells's devotion to the Darwinian theory of evolution, we can suspect a naturalistic social and historical-philosophical approach in the story. This approach, which has increased in popularity since the publication of *The Time Machine* in 1895, found a more explicit expression in the later works of the ageing author. Although *The Science of Life*, published 36 years after *The Time Machine*, is a multi-authored book, there is no doubt that it reflects Wells's own ideas.

The future of mankind in The Time Machine

What makes this novel truly surprising is that, ten years before the publication of Einstein's theory of relativity, Wells describes a space and time structure which enables the Time Traveller to carry out his journey. The time machine, the description of which reflects Jules Verne's direct influence, is able to move only in time, and thus the entire story takes place at the same location in south-east England, depicting the fate of humankind through the future of a well-known area. In the authors' opinion the changes to come are intended to refer, not only to England and Western culture, but to the whole human race. Other writings by Wells suggest that he considered the developments described in *The Time Machine* as a real possibility for the future.²

After arriving in the remote future (the year 802,701 to be exact), the Time Traveller finds huge buildings and beautiful plants. This seemingly ideal world is the residence of the charming but rather short, weak and childlike, vegetarian Eloi:

There were no signs of struggle, neither social nor economic struggle. The shop, the advertisement, traffic, all the commerce which constitutes the body of our world, was gone. It was natural on that golden evening that I should jump at the idea of social paradise. The difficulty of increasing population had been met, I guessed, and population had ceased to increase.³

The Time Traveller is surprised to see that the Eloi are on the mental level of children aged five. He discovers only gradually that he is not dealing with the creators of this ideal world but their degenerate descendants. What has made the Eloi so helpless and feeble is that they have lived under unchanged circumstances for millennia, without any need to develop new customs or adapt to unexpected situations. As a result, the process of degeneration began not as an incidental mechanism but as a necessary consequence of well-being and a lack of (biological and economic) competition:

I grieved to think how brief the dream of the human intellect had been. It had committed suicide. It had set itself steadfastly towards comfort and ease, a balanced society with security and permanency as its watch word, it had attained its hopes – to come to this at last.⁴

Later the Time Traveller discovers the existence of another, underground world which makes him aware of the division of humankind into two species: the graceful children of the upper world, the Eloi, and the bleached, obscene, nocturnal things below, the Morlocks. The latter are the descendants of the oppressed workers who had once created and maintained this formerly prosperous civilisation. The cause of the split in the species, according to the socialist-minded Time Traveller, was the contradiction between the rich and the poor and the fact that the working class was forced underground:

[...] the gradual widening of the present merely temporary and social difference between the capitalist and the labourer, was the key to the whole position [...] the Haves, pursuing pleasure and comfort and beauty, and below ground the have-nots.⁵

The Time Traveller sympathises with the human-like Eloi much more than the carnivorous, ape-like Morlocks, but he also stresses that the latter have retained far more of their intelligence and flexibility.

The relationship between the Eloi and the Morlocks in the golden age of civilisation may have born a resemblance to that of gentlemen and servants described in Hegel's *The Phenomenology of the Spirit*.⁶ In their relationship it is the servant in whom human abilities find further development, since it is he who must make an effort in life and work, while the gentleman decays both physically and mentally due to his comfortable way of life. While the Eloi have decayed into feeble beauties, the Morlocks have become mechanical labourers whose lives are full of toil and require constant effort. The Morlocks have been striving to improve their lives and working conditions, and to develop and maintain their machinery constantly; consequently they have been able to retain more of their initiative and adaptability than the descendants of the rich. The constant decay in living conditions among the carnivorous Morlocks has led to chronic food shortages which have obliged them to feed on the flesh of the Eloi; thus a new, reversed order has been created: the remote descendants of the former oppressors have become the food source of the oppressed.

Later the Time Traveller escapes the world of the Morlocks and Eloi to travel to a more remote future. In this geological period there is no trace of human civilisation. Therefore, he reasons, the deterioration of the human race has led to its total extinction. The only representatives of life are liverworts, lichens, huge landcrabs and unknown sea monsters. With the final cooling of

the sun, the earth is thrown into complete darkness resulting in the disappearance of the basic conditions for any kind of life.

The interpretation of The Time Machine; socio-biological aspects

Wells was deeply affected by the Darwinian theory of evolution with which he came into contact during his university years through the lectures of Thomas Huxley ('Darwin's bulldog'). The teacher's ideas exerted a lasting effect on the late-nineteenth century. It is not surprising therefore that the young writer's novel is saturated with naturalism; one must bear in mind that the socially-determined contradictions of the capitalist and labourer acquired a biological character.

Wells recognised that constant struggle and competition between individuals and species are considered to be the necessary preconditions of evolution. Therefore, the evolutionary process is characterised by high birth and death rates and a life of struggle to ensure rigorous selection; it is only the existence of these factors which provide the possibility for species adaptation. The elimination of hardship (effort, struggle and early death caused by selection) also means the elimination of the positive characteristics of evolution (adaptation and development). Humankind is nothing more than the mechanical product of variations and selection, being the first and only creature capable of purposeful action thus enabling it to develop in a more rapid and controlled manner. Humans are the first creatures of evolution capable of pursuing and achieving remote aims and directing their own fate.

These statements, the heretic ideas of the mid-nineteenth century, have become the fundamentals of modern socio-biology. This is why we consider their scientific expression by Wells so surprising. What he described as a scientific romance at the age of thirty became a piece of scientific work 36 years later under the title of *The Science of Life*.⁷ This work contained a high number of modern socio-biological and human-ecological ideas:

Without constant struggle and competition, Evolution could not have occurred; without the failure and death of innumerable individuals, there could have been no gradual perfection of the type; without the extinction of great groups, there could have been no advance of life as a whole.⁸

For when we reach man, Evolution does in part become purposeful. It has at least the possibility of becoming purposeful, because man is the first product of Evolution who has the capacity for long-range purpose, the first to be capable of controlling evolutionary destiny. Human purpose is one of the achievements of evolution.⁹

In *The Time Machine* Wells makes an attempt to estimate how far biological evolution affects sentient human beings. With the spread of Darwinism during the last century, Social Darwinism also emerged, which, having rejected the existence of socially-accepted principles, attempted to provide an explanation for social phenomena in direct biological terms; for example struggle for existence, survival of the fittest individuals and species, struggle for habitat, and discrimination between species of lower and higher orders. This explanation was later exploited to support the racist ideas of fascism, causing a significant loss of prestige for Social Darwinism. Although Marxism acknowledges that man is derived from animals, it supposes his natural features to be suppressed by his social development. Consequently in modern society man is practically free from natural biases.

The social biology and ecology of the late 20th century raises the question of the relationship between nature and society anew without denying the features of human-related principles – unlike Social Darwinism – but it does not ignore social factors completely. By their reasoning the biological and social factors of human development are closely interwoven, being the complex synthesis of biological evolution and culture. Wells's opinion can be juxtaposed with such socio-biological ideas which stress the importance of human-related principles, in that it presupposes the interaction between nature and man as a social phenomenon. Reason does not deny the evolutionary effect; indeed it argues that the highly-developed nervous system and human consciousness have been the results of the competition for survival among individuals and communities alike, or as Wells puts it;

Strength is the outcome of need: security sets a premium on feebleness. The work of ameliorating the conditions of life – the true civilizing process that makes life more and more secure – had gone steadily on to a climax. One triumph of a united humanity over Nature had followed another. Things that are now mere dreams had become projects deliberately put in hand and carried forward. And the harvest was what I saw!¹⁰

Consequently, the interaction of natural evolutionary mechanisms and purposefulness define the direction of the future evolution of mankind. Biological evolution and cultural development may occasionally be in opposition when one of them hinders the other. The current European-American culture seems to demonstrate the dichotomy of these factors since the realisation of dominant social purposes practically supposes the completion of the process of evolution (for example test-tube baby projects, the accumulation of genetic disorders, social uniformity, significantly decreasing social differences, high appreciation for the consumer life-style, etc.). All these even now may involve the end of both selection and the possible positive effects of biological evolution.

The Science of Life seems to give scientific support to the basic ideas of *The Time Machine*; this is why we can confidently take its ideas for those of Wells, despite the contributions made by Julian Huxley and G.P. Wells. It is not only that Wells was their senior, but the questions arising repeatedly in the Wellsian oeuvre find their biological reflections in the book: that lack of control over the increasing overpopulation might result in the human degeneration described some four decades before in *The Time Machine* and supported in *The Science of Life*. (Despite the fact that during the intervening 36 years, Wells had done nothing but strive to find the way of escape for humanity.) This is how Wells's reasoning arrived at that most favourite of idea of our times, sustainable development:

But while there is no evidence of any alarming uncontrollable degeneration of Homo sapiens, there is still less indication of any modification to adapt him to his extraordinarily changed and changing circumstances. [...] We have the rapid development of novel political, social, and economic arrangements with which the ordinary man does not keep pace [...] The inventions and organisations that have produced the peculiar opportunities and dangers of the modern world have been the work so far of a few hundred thousand exceptionally clever and enterprising people.¹¹

The interpretation of The Time Machine; human-ecological aspects

The old Wells realised the intolerable consequences of exponential population growth through reference to Professor Carr-Saunders, according to whom the

population of the earth at that time was 1700 million people, more than double the population of 100 years previous. The multiplication rate was at that time one percent per year. That is, in 500 years as many as 2,500,000 million people will live on the earth. If this population growth continues unchanged within a short time all the dry land of the earth will be occupied by human shelter and consequently there will be no room for food production – an impossible situation.¹²

Wells was aware of the waste of natural resources, as is illustrated by the following quotation:

He can colonize a new country in record time and bring in his own appurtenances in the way of domestic animals and crop-plants; but, as we have seen, he almost inevitably upsets the balance of nature in the process and introduces devastating pests. He can make the soil produce a life-community which, like a wheatcrop, or a combination of grass and cattle, shall be most efficiently adapted to the one particular purpose he has in view; but he will be upsetting the chemical balance by removing the crop from where it grew without replacing its mineral constituents. He can tap new sources of food and energy; but too often lives on capital without putting by anything for the future [...]. He can reduce disease and the wastage of human life; he is brought up against the danger of perpetuating weakly stocks that might better never exist at all. [...] He is using up the bottled sunshine of coal thousands of times more quickly than nature succeeds in storing it; and the same rate of wastage holds for oil and natural gas. By reckless cutting without re-afforestation, he has not only been incurring a timber lack which future generations will have to face, but he has been robbing great stretches of the world of their soil and even of the climate which plant evolution had given them.¹³

His ideas about the destructive environmental pollution of modern civilization are not less prophetic:

The Chinese may be less sanitary in their methods of sewage disposal, but they are certainly more sensible; in China what has been taken out of the soil is put back into the soil. It is urgently necessary that Western 'civilized' man shall alter his methods of sewage disposal. If he does not, there will be a phosphorus shortage, and therefore a food shortage, in a few generations.¹⁴

The passages quoted possess amazing actuality even in the early twenty-first century, being well ahead of their time and providing solutions to emerging problems. They correlate well not only to the ideas but to the terminology (life community, future generation, population control, limitation of individual interests, etc.) of the modern environmentalism.

Man's chief need to-day is to look ahead. He must plan his food and energy circulation as carefully as a board of directors plans a business. He must do it as one community, on a world-wide basis; and as a species, on a continuing basis. In the first place, he must learn to adjust population to supplies, and not be always and only thinking of the adjustment of supplies to population. Population may soon need to be controlled as urgently as war or unrestricted individualism need to be controlled now. In the matter of supplies he must make provision for the future.¹⁵

Although on the basis of *The Time Machine* we cannot prove that the young Wells was aware of such environmental problems, the novel nonetheless suggests his awareness of the unsustainability of our civilisation based on permanent growth.

In our opinion even the young Wells understood that constant growth was logically impossible in finite space with limited natural resources. The stabilisation of growth can only be temporary, only to be followed by incalculable changes at lightning speed. Therefore ecological problems can only be treated effectively in the future by switching over from the presently dominant growth-centred economy to a socio-economic order in balance with its environment. He was also aware that of the new problems humankind will face in the future, degeneration was the most threatening:

And in a state of physical balance and security, power, intellectual as well as physical, would be out of place [...]. For such a life, what we should call the weak are as well equipped as the strong, are indeed no longer weak. [...] We are kept on the grindstone of pain and necessity, and it seemed to me that here was that hateful grindstone broken at last.¹⁶

Adopting the ideas of Malthus and Darwin, Wells recognised that on an earth providing limited opportunities and finite resources there were only two possibilities for balance. Either high population growth coupled with a high death rate, causing cruel life for the majority, but selection effected with all its

might and providing automatic evolutionary adaptation to the environment (in *The Time Machine* the greater adaptability, imagination and inventiveness of the Morlocks is the logical consequence of this reasoning). Or a significant limitation on population growth, coupled potentially with a low death rate, in which case poverty is less significant and the life of the majority is more pleasant. But in this case biological selection and evolution are not at play and so such an environment would result in degeneration and possible genetic degradation of the species (as occurs in the case of the Eloi).

The analysis of *The Time Machine* focuses our attention on the following current problems:

i) Continuous exponential growth (population, living standards, production, etc.) necessarily leads to ecological and economic disaster, which can only be prevented by attaining a state of balance with nature by maintaining permanent levels of population, consumption and environmental pollution. Given the modern ecology-conscious arguments, Wells's ideas are still up-to-date according to the theory of Herman Daly, who stresses that society must attain a state of balance in its physical parameters (population, consumption, production of waste, etc.) in order to avoid ecological disaster:

An economy in sustainable development, a steady-state economy, is one whose scale [...] remains constant at the level that neither depletes the environment beyond its regenerative capacity nor pollutes it beyond its absorptive capacity. Such an economy adapts and improves in knowledge, organization, technical efficiency, and wisdom; and it does this without assimilating or accreting an ever greater percentage of the matter-energy of the ecosystem (the environment), which can continue to function and renew itself year after year. The nongrowing economy is not static – it is being continually maintained and renewed as a steady-state subsystem in dynamic equilibrium with its environment.¹⁷

In contrast to Wells, modern environmentalists stress that the lack of growth does not mean the end of human development. Thus sustainable development would mean a *tertium datur* between economic growth and constant equilibrium and stability.

(ii) Provided this equilibrium has been created, it might be stabilised for long. The precondition and characteristic features of long-lasting balance are the creation of a united World State, a constant level of consumption and population, far-reaching planning and appreciation for post-material values. At a

later stage in his life Wells concentrated on the creation of equilibrium and a united World State able to solve ecological-environmental problems as well as eliminate wars between different ethnic groups, religions, etc.

(iii) The main problem of a balanced society is the question of biological and cultural degradation. The history of humankind is based on individual, group or social competition and resultant selection which would be eliminated if a sustainable social order was created. But the far-reaching consequences of competition and selection are degeneration, according to Wells.

The split in mankind

The Time Machine connects the degeneration of the human race with its dramatic split, which might lead to further tragedies. According to the ideas of his time Wells connects this split with the contradictions of capitalist and labourer in the late-nineteenth century. Obviously modern capitalism has failed to fulfil his expectations since the poverty of the working classes has not increased but decreased and welfare capitalism has taken shape in highly developed countries. Parallel to this process, and perhaps in close connection with it, the difference in living standards between the inhabitants of developing and developed countries has widened, the further widening of which, especially if coupled with conditions in the developing world (exposure to pollutants, UV-B radiation, chemicals, gene manipulation, etc.) might lead to differentiation within the human race. Its integrity is not only a question of biology but one of culture as well. Humankind may be integrated from a biological viewpoint, even if it supposes itself to be just the opposite. If this integrity suffers either on a biological or cultural level, the pessimistic prophecies of *The Time Machine* about the irreconcilable hostility of the Eloi and the Morlocks might become a reality *ad absurdum*.

There is no relevant connection between the state of equilibrium, degradation and collapse of integrity. Biological or cultural degradation may appear even if the human race is integrated, so there is no relevant link between the two. In addition, Wells considers a third negative factor, which is the cooling of the sun, the heat from which maintains life on earth and the cooling of which causes its demise. This change, being out of human control, cannot be prevented, given our present lack of relevant knowledge.

To summarise, *The Time Machine* offers no reason for optimism as to the

future of humankind since a society ever growing will certainly enter into a state of crisis while a balanced society is doomed to slow and continuous degradation:

This breeding storm in which we are living now, unlike all other breeding storms in the world of life, may pass without a subsequent massacre. And here again the abnormality of human biology forces itself upon us. Man it seems is breeding now without selection. And if presently the problem is tackled and the increase checked effectively, the phase of severe selection that is the normal sequel to a breeding storm may never occur. In which case, with a cessation of selection there will be no further biological progress.¹⁸

The Wellsian interpretation of human history might be that though equilibrium can contribute to the solution of the ecological problems, the resultant degeneration can hardly be eliminated. However, in our opinion, the pitfalls of this equilibrium can be avoided by setting up a sustainable balanced society.

Notes

- 1 H.G. Wells, *The Time Machine* (London: Pan, 1953).
- 2 J. Kagarlickij, *H.G. Wells* (Moscow: Goszudarsztvennoe izdatel'stvo hudozsesztvennoj literaturü, 1963), p. 149.
- 3 Wells, p. 38.
- 4 *Ibid.*, p. 92.
- 5 *Ibid.*, p. 57
- 6 G.W.F. Hegel, *Werke. Vollständige Ausgabe. Herausgegeben durch einen Verein von Freunden des Verewigten*, 24 vols (Berlin: Duncker und Humbolt, 1832-1845), vol. xi.
- 7 H.G. Wells, J. Huxley and G.P. Wells, *The Science of Life* (Garden City, NY: Doubleday, Doran, 1931).
- 8 *Ibid.*, p. 639.
- 9 *Ibid.*, p. 642.
- 10 Wells, 37.
- 11 Wells, Huxley and Wells, p. 1469.
- 12 *Ibid.*, p. 1473.
- 13 *Ibid.*, pp. 1028-9.
- 14 *Ibid.*, p. 1032.
- 15 *Ibid.*, p. 1030.

16 Wells, pp. 39-40.

17 Herman E. Daly, 'Steady-State Economics: A New Paradigm' (*New Literary History*, 1993), pp. 811-6.

18 Wells, Huxley and Wells, p. 1467.