

# **Towards a complete and fully integrated model of the human species by Gearóid Carey**

## **Abstract**

*Extrapolating a full species model from correct but partial information has led to the generation of poor models. For example, developing a model that integrates all of the available scientific information without integrating the metaphysical information that divine revelation provides can never generate an adequate model. Similarly, failure to understand the effect of the Neolithic revolution on the human species leads to such mistaken modelling. Understanding the dynamics of the human species before and after the Neolithic revolution is like understanding the relationship between ice and water: one has come from the other and they both share fundamental constituents. However, their performances and properties are profoundly different. This paper briefly works towards articulating a correct and complete species model.*

## **Natural systems and the gene-trait link**

In natural systems, the traits of the species are linked to its genes. The genes linked to the fittest traits remain in the species gene pool while the genes linked to the least fit traits do not. Traits include physical, psychological and cultural traits.

## **Human beings in natural systems**

Human beings evolved through the same process of natural selection as animals. However, this process had a different effect on humans than it did on animals because human beings have a different relationship with God:

Whatever is in the heavens and whatever is on the earth is a direct evidence of the revelation within it of the attributes and names of God, inasmuch as within every atom are enshrined the signs that bear eloquent testimony to the revelation of that Most Great Light ... To a supreme degree is this true of man ... For in him are potentially revealed all the attributes and names of God to a degree that no other created being hath excelled or surpassed ... <sup>1</sup>

### **The Neolithic revolution: the breaking of the gene-trait link**

The Neolithic revolution occurred 10,000 years ago. Human beings discovered agriculture and began to domesticate animals. During this revolution, we changed from being semi-nomadic hunter-gatherers to being settled villagers farming the land. The effect of this was that the strict gene-trait link that is required for the process of natural selection to perform was broken. Physiological, psychological and cultural traits were no longer being tested for being the fittest, as they had been previously. Human beings could perform pathologically and still survive. The species could be steeped in its own pathos (diseases or abnormalities) and the external regulating force of natural selection would no longer eliminate it:

In the days of old an instinct for warfare was developed in the struggle with wild animals; this is no longer necessary; nay, rather, co-operation and mutual understanding are seen to produce the greatest welfare of mankind. Enmity is now the result of prejudice only.<sup>2</sup>

### **Human beings outside natural systems**

Since the Neolithic revolution, civilization has progressively developed. Over this time our species has progressively come to terms with living outside the parameters which natural selection once applied to how we could and could not live. This journey has been difficult and painful. We are now at this journey's end. Civilization is finally entering into maturity as we attain the capacity to adequately, internally self-regulate:

The time foreordained unto the peoples and kindreds of the earth is now come.<sup>3</sup>

Soon will the present-day order be rolled up, and a new one spread out in its stead.<sup>4</sup>

A new life is, in this age, stirring within all the peoples of the earth; and yet none hath discovered its cause, or perceived its motive.<sup>5</sup>

### **Spiritual development as a survival trait**

Spirituality is a trait of the human species. It is observable as psychological and cultural phenomena which are based on valuing the development of virtues like kindness, generosity, truthfulness, service, forbearance, forgiveness, etc. What role did this spirituality play during our evolution?

It is quite probable that before the Neolithic revolution, poor spiritual fitness was responded to with negative selection pressure on the individual, tribe or group of tribes that was performing relatively poorly. To explain this by exaggeration, imagine if one tribe was riddled with vices like dishonesty, crime and immorality, it would have had a much greater negative selection pressure than a tribe resplendent with virtues like patience, trustworthiness, generosity, moderation, forbearance and so on.

### **Species essence**

Our evolution is similar to that of animals in that natural selection was the governing process of both. Our evolution is different to that of animals as we have a unique ingredient which animals do not: the capacity to know of God and live in His image. This unique ingredient, the defining characteristic of our species, is essentially supernatural or metaphysical and so is independent of biological speciation:

This anatomical evolution or progression does not alter or affect the statement that the development of man was always human in type ... The human embryo when examined microscopically is at first a mere germ or worm. Gradually as it develops it shows certain divisions; rudiments of hands and feet appear ... Afterward it undergoes certain distinct changes until it reaches its actual human form and is born into this world. But at all times, even when the embryo resembled a worm, it was human in potentiality and character, not animal. The forms assumed by the human embryo in its successive changes do not prove that it is animal in its essential character ... Realising this we may acknowledge the fact that at one time man was an inmate of the sea, at another period an invertebrate, then a vertebrate

and finally a human being standing erect. Though we admit these changes, we cannot say man is an animal ... <sup>6</sup>

### **A scientific look at the human species and the Neolithic revolution**

Five million years ago, the biological species that was to evolve into human beings were tree-dwelling creatures living in a jungle. Two million years later, they foraged and scavenged for food throughout the open grasslands of African savannahs. Two million years later again, they were very successful hunter-gatherers living all over the world. 10,000 years ago our ancestors began planting crops and domesticating animals. This was the beginning of agriculture, and with it came profound changes in our species. Before we began farming, people lived together in semi-nomadic tribes. With the arrival of agriculture we began living in permanent villages. The day-to-day lives of the villagers were no longer taken up with the continuous search for food to survive. They had more time to develop other matters like art, crafts, technology and language. These early farming communities represented the very beginnings of civilization.

As civilization began to emerge, natural selection had less and less of an effect on our species. Eventually, natural selection was no longer determining how we could and could not develop psychologically and culturally. Our escape from the rigours of natural selection has had many consequences. Here are ten examples.

#### *Old Age*

Advanced old age does not occur in natural systems. It does occur in our species. So we must learn to tend to the unique needs of the elderly, and learn how to benefit from the unique gifts and experiential insights they have to offer all of us.

#### *Diet*

In natural systems, salty, fatty and sugary foods are scarce. However, these foods are of great benefit to a creature struggling to survive. Thus many animals are programmed to gorge on these kinds of foods when they become available. This genetic programming is also found in human beings. Eating salty, fatty or

sugary foods makes us feel good as chemicals are released in our brains. This encourages us to consume more of these foods than we need. While our species was governed by natural selection, over-consumption of these foods when they became available helped us to survive. These types of food were scarce and so their consumption was naturally regulated in our diet. Now, we must regulate the amount of salt, fat and sugar in our diets ourselves or suffer consequences such as obesity and tooth decay, to which a poor or unbalanced diet undoubtedly contribute.

### *Physical Fitness*

Natural selection evolves creatures to be physically fit in their environment. Now, the onus is on us to develop lifestyles and environments which encourage fitness.

### *Sexuality*

Human sexuality used to be an integral part of the workings of natural selection in our species. As this is no longer the case, we need to relate to and integrate our sexuality in a new way.

### *Physiological Disease*

In natural systems, disease has a very important role to play. As a device of natural selection, disease removes the weakest members of the species. Physiological disease used to perform this important function in our species. However, natural selection no longer applies to our species in this way, so there is no need for physiological diseases to occur in it. Thus we must endeavour to live in a manner where the occurrence of disease is minimal.

These various new challenges which face us can overlap. For example, the species' new relationship to sexuality and physiological disease together play a part in the way sexually transmitted diseases occur.

### *Starvation*

The phenomenon of starvation is a necessary part of natural systems. It is a part of the natural world and has a place in it. Starvation is the effective result of there being a limited food supply. In order for a natural system to work, the presence of a limited food supply is vital.

However, the starvation which has occurred in the human species since the Neolithic revolution 10,000 years ago amounts to sheer pathology.

#### *Environment*

Another example is the relationship of the human species to its environment. When the process of natural selection governed the human species, physiological, psychological and cultural fitness were paramount. Efficiency and recycling were therefore essential elements of human lifestyle. However, now we must learn to regulate our relationship with our environment ourselves, or suffer consequences like litter and pollution.

#### *Genetic deterioration of the gene pool of the human species*

Genes that are a contributing factor to the occurrence of an illness or that actually cause illness are permitted to remain in our gene pool as their carriers stay alive and propagate. Unless the illness directly affects sexual ability, chances are the carrier will have as many offspring as someone not carrying the offending gene. Examples of illnesses in which genetic make-up can be a factor are heart disease, cancer, schizophrenia and panic attacks. Dealing with our deteriorating gene pool requires minimising non-genetic factors which contribute to the occurrence of these illnesses such as smoking, poor diet, dysfunction and pollution. It also requires limiting the symptoms of gene-related illnesses by tending to them as best we can.

#### *Population*

Natural selection used to regulate the population densities occurring in the human species. Now the species must learn to do this for itself or suffer consequences such as chronic traffic congestion, to which population density is a contributing factor.

#### *Self-destructiveness*

Prior to civilization, natural selection tested all of the attributes of our species for fitness and facilitated the human species to evolve accordingly. Natural selection had been able to test our physiological, psychological and cultural fitness. Without this strong and strict guiding force, our species was free to develop in new ways. Unfortunately, we have become self-destructive in

many ways, for example, in wars and in a multiplicity of mental illnesses.

The human species is in an extremely difficult period of transition. Its development is no longer ultimately governed and facilitated by natural selection. However, it has yet to learn how to adequately govern or facilitate itself. In the words of Bahá'u'lláh:

Consider the pettiness of men's minds. They ask for that which injureth them, and cast away the thing that profiteth them. They are, indeed, of those that are far astray. We find some men desiring liberty, and priding themselves therein. Such men are in the depths of ignorance.

Liberty must, in the end, lead to sedition, whose flames none can quench. Thus warneth you He Who is the Reckoner, the All-Knowing. Know ye that the embodiment of liberty and its symbol is the animal. That which beseemeth man is submission unto such restraints as will protect him from his own ignorance, and guard him against the harm of the mischief-maker. Liberty causeth man to overstep the bounds of propriety, and to infringe on the dignity of his station. It debaseth him to the level of extreme depravity and wickedness.

Regard men as a flock of sheep that need a shepherd for their protection. This, verily, is the truth, the certain truth ... <sup>7</sup>

### **Natural systems**

Natural selection is a process whereby the traits that provide the best survival advantage, i.e. fitness, are propagated in the species. Thus, species evolve. To explain how this happens I will use the example of a herd of zebras in an African savanna.

The herd roams the grasslands of the savanna in search of fresh pasture for grazing. From time to time, a male and female zebra will mate and have offspring. Each newborn foal has some genetic mutations. These mutations give rise to new traits in the species. With each generation of zebra, many thousands of new mutations occur in the species. As the herd roams the grassland, the zebras have to overcome many adversities in order to stay alive. Predators, such as lions, are constantly watching the herd

looking for the zebra that they can take down most easily. Each zebra must also be strong enough to overcome any physiological disease it may catch. These diseases often occur only in zebras that are already run-down. The zebras also have to contend with a limited food supply.

In order to talk more easily about natural systems, I will apply some terms to the various events that happen in them. When a male and female zebra choose to mate with each other, this is called sexual selection. The various adversities, such as predators and disease, which test the zebras for fitness are mechanisms of natural selection. Sexual selection is also a mechanism of natural selection. It is through these mechanisms that the traits of the species are linked to the genes of the species.

In order for natural selection to perform, this gene-trait link is vital. In natural systems, the gene-trait link is present for physiological, psychological and cultural traits. A physiological trait of a zebra is its black and white stripes. A psychological trait is its ability to be aware of the presence of a lion nearby. A cultural trait is the bond between a foal and its mother. Another cultural trait is the way the animals of the herd stay close together in order to better protect themselves from predators.

Understanding the relationship of natural selection and health is vital to understanding our species. Natural selection evolves animals to be physically fit. In order for an animal to be physically fit, it first must be physically healthy. Thus animals evolved through natural selection are designed, in their genetically proposed form, to be physically healthy. In the same way, natural selection evolves animals to be psychologically healthy. Natural selection also tests animals' collective cultural performance, and therefore also evolves cultural performance to be healthy. Thus we can say that the human species has been evolved to be physically, psychologically and cultural healthy.

### **What we have been evolved to do**

While the development of our species was being facilitated by the governing force and principles of natural selection, we dynamically developed lifestyles and ways of living together which were fit for the situation and surroundings in which we



found ourselves. We were so successful at this that we survived in various habitats all over the planet.

It is our nature to develop our fitness individually, collectively and as a species. It is also our nature to develop our health and well-being as they are prerequisites for our fitness.

### **Life after natural selection**

The occurrence of agriculture in our species changed human beings remarkably. We were no longer semi-nomadic hunter-gatherers. Instead, we were settled villagers farming the land. Our new lifestyles prevented the mechanisms of natural selection from doing their job. The strict gene-trait link was broken. Natural selection was no longer able to test our traits for fitness as it had before.

The invention of farming 10,000 years ago brought many advantages. For example, people no longer had to worry about where their next meal would come from. Our species no longer had a limited food supply, as all species governed by natural selection are required to have: we had an abundant food supply. A sign of this is the exponential population growth which has occurred in our species. The species population has grown from approximately 3,000,000 people 10,000 years ago to over 6,000,000,000 today. Another benefit of farming was that people lived together in larger numbers and had more time to devote to developing things like language, technology and the arts.

### **Hygiene and warfare**

Our new lifestyles brought many new threats to our species. The village lifestyle which accompanied agriculture meant that many new diseases flourished among the people of the time. These diseases were no longer the workings of natural selection: they were just something harmful happening to the species. Farming meant that some people had to do tedious and back-breaking work they had not been evolved to do. The crops and animals had to be protected. Villagers had to fight to protect the possession of their crops and animals. The hurt, physical damage and distrust this fighting engendered was just more needless pain, occurring because we had not adjusted to living beyond the bounds of natural selection.

## **Feedback loops in our species**

In this way, our species began performing self-destructively. People responded to these new hostilities in a way that caused even more harm. Thus our self-destructiveness began feeding on itself: hostility and harm became the origin of hostility and harm. This feedback loop of self-destructiveness has been a part of our species for some 10,000 years. It generates wars, famines, murders, suicides, mental illnesses, pollution, economic crises and lots more and is profoundly complex.

There are different types of feedback loops. One is a reinforcing feedback loop. This is when the more something occurs, the more it tends to occur - for example, the retaliatory paramilitary violence occurring between nationalists and loyalists during the troubles in the Northern Ireland. Essentially, 'violence breeds violence.'

Another type of feedback loop is a balancing feedback loop. This is when the more something occurs, the more things which inhibit it will occur. An example of this is imprisonment. The more crime there is, the more people will be put in jail and so less crime will tend to occur.

The reinforcing feedback loop of self-destructiveness occurring in our species has the potential to destroy all of us. It does not fulfil this potential because the balancing feedback loop occurs in response to it. The balancing feedback loop puts a limit on how much damage the reinforcing feedback loop can do.

However, the balancing feedback loop does not remove the reinforcing feedback loop or its cause. In fact, the balancing feedback loop can itself cause harm. An example of this is imprisonment. Imprisoning people justly does limit the amount of crime occurring, but the act of imprisoning someone is or can be harmful to that person. Of this 'Abdu'l-Bahá observed in one of His table talks:

... communities are day and night occupied in making penal laws, and in preparing and organizing instruments and means of punishment. They build prisons, make chains and fetters, arrange places of exile and banishment, and different kinds of hardships and tortures, and think by these means to

discipline criminals, whereas, in reality, they are causing destruction of morals and perversion of characters. The community, on the contrary, ought day and night to strive and endeavor with the utmost zeal and effort to accomplish the education of men, to cause them day by day to progress and to increase in science and knowledge, to acquire virtues, to gain good morals and to avoid vices, so that crimes may not occur. At the present time the contrary prevails; the community is always thinking of enforcing the penal laws, and of preparing means of punishment, instruments of death and chastisement, places for imprisonment and banishment; and they expect crimes to be committed. This has a demoralizing effect.

But if the community would endeavor to educate the masses, day by day knowledge and sciences would increase, the understanding would be broadened, the sensibilities developed, customs would become good, and morals normal; in one word, in all these classes of perfections there would be progress, and there would be fewer crimes ...

Therefore, the communities must think of preventing crimes, rather than of rigorously punishing them.<sup>8</sup>

Ironically, the harm caused by the balancing feedback loop can feed the reinforcing feedback loop.

## **Conclusion**

Before the Neolithic revolution, there was an immense external pressure (natural selection) on us to attain maturity. After the Neolithic revolution, this pressure was no longer present and in its absence we fail to mature.

In our time this pressure is returning: pollution, genetic engineering, unguarded multinational corporations, the refinement of devices of war and terrorism, the rapid spread of physiological disease and so on. It is now internal. We must, as a species, mature or else face extinction. In his letter, *The Unfoldment of Civilization* (1936), Shoghi Effendi observed:

The recrudescence of religious intolerance, of racial animosity, and of patriotic arrogance; the increasing evidences of selfishness, of suspicion, of fear and of fraud; the spread of terrorism, of lawlessness, of drunkenness and of crime; the unquenchable thirst for, and the feverish pursuit after, earthly vanities, riches and pleasures; the weakening of family solidarity; the laxity in parental control; the lapse into luxurious indulgence; the irresponsible attitude towards marriage and the consequent rising tide of divorce; the degeneracy of art and music, the infection of literature, and the corruption of the press; the extension of the influence and activities of those 'prophets of decadence' who advocate companionate marriage, who preach the philosophy of nudism, who call modesty an intellectual fiction, who refuse to regard the procreation of children as the sacred and primary purpose of marriage, who denounce religion as an opiate of the people, who would, if given free rein, lead back the human race to barbarism, chaos, and ultimate extinction - these appear as the outstanding characteristics of a decadent society, a society that must either be reborn or perish.<sup>9</sup>

Likewise the Universal House of Justice pointed out in *The Promise of World Peace* (1985):

The human race, as a distinct, organic unit, has passed through evolutionary stages analogous to the stages of infancy and childhood in the lives of its individual members, and is now in the culminating period of its turbulent adolescence approaching its long-awaited coming of age.<sup>10</sup>

The process of global integration, already a reality in the realms of business, finance, and communications, is beginning to materialize in the political arena.

Historically, this process has been accelerated by sudden and catastrophic events. It was the devastation of World Wars I and II that gave birth to the League of Nations and the United Nations, respectively. Whether future

accomplishments are also to be reached after similarly unimaginable horrors or embraced through an act of consultative will, is the choice before all who inhabit the earth. Failure to take decisive action would be unconscionably irresponsible.

To mature, the change must be both systemic and atomic. 'Systemic' means that changes will have to be made to all aspects of human life: political, cultural, artistic, economic, etc.; 'atomic' means that the smallest unit of the global society will have to change: '... peace,' 'Abdu'l-Bahá wrote to one believer, 'must first be established among individuals, until it leadeth in the end to peace among nations ...'<sup>11</sup>

As delineated in the Bahá'í Writings, the maturity of the human race is most likely to be represented by its diverse members consciously achieving and sustaining a balance between individual spiritual success (the atomic level) and collective or social progress (the systemic level). Thus will be erected, in the words of the Universal House of Justice, 'a social system at once progressive and peaceful, dynamic and harmonious, a system giving free play to individual creativity and initiative but based on co-operation and reciprocity.'<sup>12</sup>

## References

1. Bahá'u'lláh *Gleanings* pp. 177-9.
2. 'Abdu'l-Bahá in London pp. 3-5.
3. Bahá'u'lláh *Gleanings from the Writings of Bahá'u'lláh* p. 12.
4. Bahá'u'lláh *Gleanings* p. 7.
5. Bahá'u'lláh *Gleanings* p. 196.
6. 'Abdu'l-Bahá *Promulgation of Universal Peace* pp. 358-9.
7. Bahá'u'lláh *Gleanings* p. 335.
8. 'Abdu'l-Bahá *Some Answered Questions* pp. 272-3.
9. *The World Order of Bahá'u'lláh: Selected Letters* rev. ed. (Wilmette: Bahá'í Publishing Trust, 1982) pp. 187-88.
10. The Universal House of Justice *The Promise of World Peace*, (Bahá'í World Centre, Haifa, 1985) p. 3.
11. 'Abdu'l-Bahá *Selections from the Writings of 'Abdu'l-Bahá* p. 246.
12. The Universal House of Justice *The Promise of World Peace* (Bahá'í World Centre, Haifa, 1985) p. 3.