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**Critique and Investigation of the Evolutionary
Ethical Behavior Explanations based on Francisco
Ayala's Theories**

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Abstract

Ayala (American philosopher and biologist) has presented new theories on the evolutionary ethical explanations. Following Darwin, Ayala distinguishes the moral sense and the moral norms accepted by the human community. Therefore, he believes that the biological-natural processes lead to the evolution of the human mind; this growth and development in the mind results in the moral sense in the human. On the one hand, the norms and ethical systems of any human society have been emerged due to the cultural evolution in that country. Hence, cultural evolution is the foundation of Ayala's ethical pluralism theory. As such, Ayala advocates the objectivity of moral values and Kantian substantive morality. since he, like Kant, regards human rationality as the only reason for justifying moral sense. In this paper, Ayala's theories on ethical pluralism and the role of cultural evolution in the formation of moral norms are discussed and criticized. Ayala's success in establishing a universal normative ethical system will be approached skeptically; however, his biological explanation of the origin of moral sense can be considered as a Kantian account of morality, but on the other hand moral pluralism related to cultural evolution led to a split between two aspects of meta-ethics and normative ethics in Ayala's theory, that disorganizes the coherence of his theory. It seems that Ayala's theory needs explanation more than cultural evolution.

Keywords: evolutionary biology, moral sense, cultural evolution, moral norm, moral substantivity, Kantian rationality, moral pluralism

Introduction

Francisco José Ayala Pereda was born in 1934, is a Spanish-American philosopher, and is a professor at the University of California, Irvine. He was first a Dominican priest. He graduated from the University of Salamanca in Spain, 1961; then, he went to America to study Ph.D. at Columbia University, under the supervision of his professor, Theodosius Dobzhansky. Now, he teaches biology, ecology, evolutionary biology, and philosophy of science. He is famous mostly because of his research on evolutionary genetics. He is a serious critic of creationism and intelligent design. He is of a great place in the evolution research program because of writing a lot of papers and books on the theory of evolution. His books are mostly in the area of evolutionary biology; yet, he is especially interested in the philosophy of biology and the relationship between the theory of evolution and Religion.

Ayala is one of the evolutionary biologists considering himself as a Christian God-fearing and faithful though he is strongly committed to evolutionary explanations in biology. In fact, he is one of the philosophers-biologists placed between two completely opposite attitudes in terms of thought and his theories about religion, ethics, and biology. On the one hand, atheist biologists and philosophers not only regard the biological evolutionary process as the only acceptable explanation for the process of the creation of the creatures, but also use it in contrast of the god-believing explanations of the universe creation and concepts such as religion and God and believe that these concepts are inefficient and not understandable. On the other hand, there are the God-fearing ones who are very religious and firmly believe that the biological theory of evolution is incorrect; hence, they aim to rescue the other people from the realistic illusion of the theory of evolution, an example of such people are the advocates of the intelligent design theory.

Ayala was the student of Theodosius Dobzhansky; Dobzhansky is one of the towering figures in combining the theory of evolution and genetics which resulted in neo-Darwinism. Ayala introduces his professor as a religious man though he had not believed in God as a person and the life after death. Of course, Ayala was superior to his professor such that he had in-depth studies in the three areas of biology, religion, and philosophy. He was trained as a Dominican priest in his youth; then, he studied evolutionary biology and philosophy such that he became a professor of philosophy at the University of California, in addition to teaching biology.

Like Dobzhansky, Ayala believes that evolution is certain in biology and is of a high explanatory power such that everything in biology makes sense in the light of evolution. (Dobzhansky-1973) Therefore, the emergence of the moral sense in

human beings can be explained by evolutionary mechanisms such that natural selection has been the major factor in the emergence and development of advanced rationality in the human. Human is an ethical being since it is a rational being. As such, Ayala considers himself as a Kantian philosopher who believes in objective moral autonomy and is in contrast with the biologists who deny objective foundations for morality. From Ayala's perspective, there should be a basic distinction between moral sense and the moral norms accepted in the human society. That is because the moral sense is the result of biological evolution and the ethical systematizations result from cultural evolution. These two claims of Ayala will be introduced and investigated in detail in this paper.

1. **Evolutionary approaches to human behavior**

Some sciences such as ethology, comparative psychology, behavioral ecology as well as the science emerged in the 1970s, i.e. sociobiology, claim that they can provide the ability to perceive, explain, and elaborate animal behavior. The term ethology is derived from the Greek word *ethos*, meaning trait. After the emergence of the theory of evolution, particularly since the 1970s, the evolutionary approaches to human behavior emerged and sought to explain the human behavior, especially the ethical behaviors such as altruism, by biological processes. Some of these approaches include:

A) Cultural evolution

Cultural evolution is an excellent distinctive style of human evolution which is superior to biological evolution of human since it is a more effective kind of adaptation which is faster than the biological evolution and is controllable, of course. It was introduced to human due to advanced growth and development of the human brain. As such, the biological evolution surpassed its limits which resulted in adaptation with the environment, not by common biological methods, of course, but by changes the human being makes in the environment by manipulating the nature and using technology. Having changed their genetic structure during generations, other creatures adjust to the environment through natural selection so as to fit the environmental needs. The adaptation capacity with undesirable environments which do not fulfill the needs is only developed and evolved in the human being; they manipulate the environment to fit their needs (Ayala, 2007, CH. 6).

Therefore, from its emergence in Africa, the human being changed into the widest and most abundant mammal on earth and this is due to the superiority of the cultural adaptation effectiveness over the biological adaptation. Cultural evolution has led to the birth of culture, a biological super organic aspect of evolution which

has changed into the dominant mode of human evolution in a millennium (Baniolo & de Anna-2006-p.146).

B) Gene-Culture Coevolution

Coevolution is a process taking place when two or more species influence each other evolutionally. It is often used for explaining the coadaptation among species and presents an explanation on the manner of coadaptation in some species during the process of evolution. According to the argumentation and opinion of some psychologists, philosophers, and sociobiologists, biological evolution and cultural evolution should be defined under a term which manifests the relationship and overlap between the two concepts. The term coevolution was used for the mutual relationship and influence between evolution and culture. Therefore, according to gene-culture coevolution theory, two components of gene and culture (a set of traditions, behaviors, and values) have a mutual effect on each other (Ayala & Cela Conde, 2004, p.181).

C) Sociobiology

behavioral ecology, sociobiology investigates functional aspects of behavior; the first stimuli of this school were the biologists who conducted widespread studies so as to scientifically explain altruistic behaviors of the social insects. Among all issues Darwin dealt with, the origin of the emergence of altruism and, more clearly, the whyness of the emergence and survival of sterile castes in insects were two issues that he regarded them as two problems of natural selection (Kartwright, 2000, p.26). Darwin answered this issue by using the term community selection; it means that if a community of immediate relatives has been made, the value of sacrifice in that community increases. Later, the biologists and specifically W.D. Hamilton (1964) proved that natural selection can be also explained in the community of sterile insects. They show the highest level of altruistic behavior by sacrificing their lives to take care of another person's generation, i.e. the queen (Ayala & Arp, 2010, pp.328-329).

David Wilson is one of the contemporary evolutionists and a towering advocate of the theory of group selection. He considers the group selection in the human species as a powerful force. From Wilson's perspective, moral behavior is a concept which has a firm relationship with his multilevel selection theory. Conformity (to a specific behavior) eliminates especial variations of phenotypic variation in the group, regardless of any genetic variation which may exist. Behaviors which are considered as good conduct are not determined genetically, but they depend on open mental and cultural processes. The open nature of good conduct means that there is phenotypic variation between groups even if it decreases inside the groups. Hence,

based on its nature, ethics changes the balance between levels of selection in favor of the group selection (Wilson, 2002, p.224).

D) Evolutionary psychology

Psychology and biology are related to each other such that change in one of them influences the other one. Evolutionary psychology is a science seeking to use evolutionary ideas in order to understand and analyze the human behaviors. Darwin believed that the living things have evolved from inferior antecedents and behavior, morphology, and physiology all have been created by natural selection and sexual selection. Therefore, he believed in a viewpoint that some people call it “psychoneural monism”. It is a view indicating that mind and body do not have two separate natures and both mental and physical states of animals are explained in the same way, i.e. the effect of the natural selection. In his book titled *The Descent of Man*, Darwin analyzed four kinds of human activity which are of noticeable human characteristics and raised the question that “Can these characteristics be traced back in the inferior species or not?”. These four characteristics include tool use, language, aesthetic sense, and religious ardor. Darwin believed that at least a primary talent for each of these four characteristics can be presented for the inferior species (Darwin, 1871, pp.53, 57, 64, 68, & 88).

Therefore, it can be said that evolutionary psychology considers the mental mechanisms, as the biological mechanisms, as the result of the effect of the evolution process over the years. As such, in this approach to human behavior, human psychic actions are inherited and formed in the human antecedents so as to survive the generation and increase fertility.¹

2. Ayala’s evolutionary explanation of the human moral sense

From Ayala’s perspective, human beings are a successful and distinctive species of living things who have obtained specific and unique capabilities during the evolutionary processes. Human beings are the only vertebrates standing upright on two feet. Furthermore, in addition to being bigger than other mammals, the human brain is more complex than the others’. Therefore, human beings have considerable

¹ Konrad Lorenz was an Austrian physician and zoologist, studied the behavior of animals, and considers it important to compare the behavior of a species with its family species to understand the evolutionary relationships between species. Lorenz believed in a fixed action pattern which resulted in the stimulation of a particular behavior by an external stimulator. He believed that this fixed pattern has been formed by natural selection, is common among all persons in a species, and it does not need to be learned. From his perspective, animal instincts are able to be instruments for reconstructing the evolutionary regeneration of the species: in a species of flies, the male fly gifts an empty silky bag to the female fly and mates with her when she is opening it. The problem of the male flies of this family is that they may be eaten by the female flies while approaching them. Hence, the male fly puts a piece of food in the silky bag, gives it to the female fly, and he easily mates with her when she is opening it (Kartwright, 2000, p.9).

differences with other mammals in terms of anatomy and functional and behavioral abilities, both individually and socially. These unique characteristics of the human species have played a basic role in the formation of Ayala's theory such that he considers the most fundamental difference between human beings and other creatures in the specific distinctions of the human species, particularly its advanced rationality power. The exclusive traits of the human species enable it to categorize the issues (considering detailed affairs as components of a whole), think in the abstract, visualize the realities which do not exist (prediction power for future events and planning for future behaviors), and argue. Moreover, self-awareness, death awareness, symbolic (creative) language, social cooperation and arrangement, establishing legal codes and political organizations, science, literature, art, ethics, and religions are the traits which have made the human species successful (Ayala, 2006, p.143-146).

Contrary to other evolutionists, Ayala does not accept any of the evolutionary approaches as justifying human morality because he believes that the moral sense results from the human wisdom development and does not depend on the other evolutionary approaches.

Therefore, the ethical behavior is the definite consequence of the human biological structure and the human brain evolution; as a result, the high degree of rationality that human beings achieved during the process of evolution, has made them ethical creatures. Regarding the common ethical behaviors between animals and human beings, parental care for children is a behavior which is generally attended by natural selection; hence, it is present in all ethical systems from early to advanced societies.

The three claims of Ayala's theory are as follows:

First: the human ethical behavior has its roots in his biological structure. (Ayala & Arp-2010-p.321)

Second: the evolution of the ethical behavior is not due to the inherent adaptability characteristic of such a behavior, but it is the indirect result of the development and evolution of rational capabilities. (Ayala-1987-p.235)

Third: moral norms are determined by cultural evolution and not by biological evolution. It means that the assumptions of ethical judgments are adopted from religious and social traditions. (Ayala-2008-p.249-251)

2.1. The origin of the moral sense in the human species from Ayala's perspective

It is of great importance for Ayala to answer the question which seeks to explain the origin of the emergence of ethical behaviors in human.

According to Ayala, human beings can distinguish good and evil because their biological structure determines the three necessary conditions for ethical behavior.

2.1.1. First condition: “owing to a high mental power, human beings necessarily are willing to judge ethically. Therefore, they can accept ethical values” (Ayala, 1987, p.237).

It needs to be explained that ethical behavior is the necessary consequence of the human biological structure which is obtained during their process of evolution. This viewpoint may have nothing to say with regard to meta-ethics theories such as the rationality of ethical behaviors or explanation of ethical duties. As such, Ayala mentions that his first theorem does not mean that the moral norms have been specified biologically or are the unambiguous and conspicuous consequence of human rationality. Humans are *Homo moralis* because they are *Homo rationalis*; it means that humans are ethical since they are of ration and logic. Ayala believes that the high degree of rationality in human beings has made them ethical creatures (Avisé & Ayala, 2007, p.327). Human beings evaluate their behavior as good or bad, moral or immoral, and a consequence of outstanding intellectual capacities including self-awareness and abstract thinking. These intellectual capacities and intelligent capabilities result from the evolutionary process which distinguishes human beings from other creatures. Ayala clarifies that the ability to predict a person's consequences of an action has a close relationship with the ability to create a relationship between means and end. Ayala means to consider a specific means as a thing which is used for a specific end, i.e. considering a means exactly as a means and what which has a completely clear end. (Ayala, 1987, p.238)

What Ayala is seeking for in this regard is the emphasis on the human mind to create a relationship between different means and their end which itself demands the ability to predict the future and the formation of mental images of the realities that have not existed so far. The ability to create a relationship between means and ends is a basic mental capability that makes the basis for the formation of the human culture and technology. The evolutionary origin of this ability can be considered as the evolution of the human body in changing into standing upright on two feet. According to this evolutionary account, natural selection developed the mental capability of the human two-foot antecedents because a more powerful intelligence facilitates the perception of the efficiency of various tools; hence, constructing and using them improve reproduction and biological survival. The growth and development of the human antecedents' mental abilities during several million years gradually increased the capability of connecting the means to their ends. Therefore,

it was made possible to build more complex tools to be used for superior ends. As such, the natural selection developed the human two-foot antecedents' rational ability and intelligence, made developed intelligence, facilitated the use of tools, and considerably improved survival and biological reproduction (Ayala, 1987, p.238, 239).

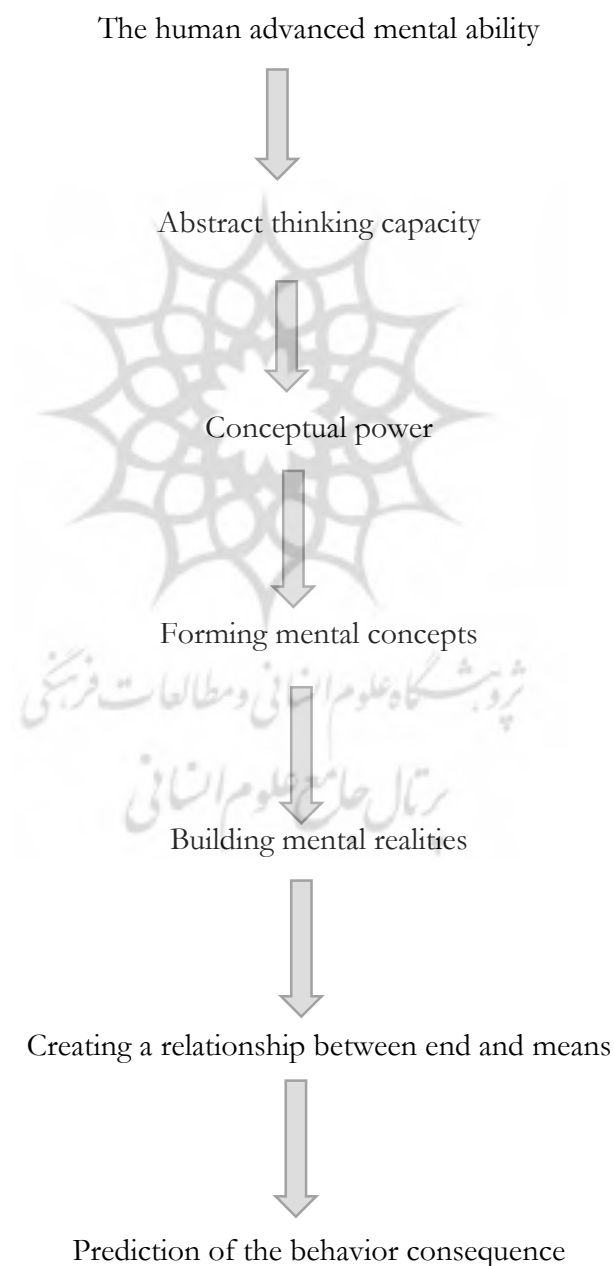
2.1.2. Second condition: "the existence of the ethical behavior entails the existence of the ability of value judgments so as to perceive a specific action or behavior that can distinguish the desirability and superiority of a behavior from other behaviors".

Ayala stresses that a human can prefer the death of his enemy over his life or vice versa, it is only the case in which the action which leads to the death of his enemy can be assumed as an ethical action. Therefore, if the consequences and results obtained from the alternative actions and performances of a specific action are neutral and ineffective in terms of their value, that action cannot be ethical. This ability depends on the human "abstraction capacity", meaning that human is able to perceive specific behaviors or ends as a part of general classes. In other words, the human is able to compare the things, actions, and behaviors with one another and select some of them as the more desirable alternatives. This abstraction capacity needs an advanced intelligence like what human has (Avisé & Ayala, 2007, p.330) and (Ayala & Arp, 2010, p.323).

2.1.3. Third condition: "a behavior is considered ethical if the person is able to select between alternative functions".

According to Ayala's argumentation, dragging the gun pistol to defeat the enemy is considered an ethical action only when the human does not have the choice for not dragging the pistol. The unintentional compulsory activity and performance beyond a conscious control is never considered as an ethical action such that the circulatory system or the process of the human digestive system is not considered an ethical performance. However, when human faces a situation which needs his performance, he can mentally seek alternatives so that he can widen the area in which he can show his free will; it means that the ability to search for new actions in facing specific conditions widens the human intentional decision-making area. One of the necessities of this claim of Ayala is, in fact, the emphasis on the existence of the human free will. He believes that if the free will does not exist, no kind of ethical behavior will exist; if it is true, i.e. if people are not free in their behaviors, the ethics and ethical behaviors would be just a delusion (Ayala, 1987, p.239). Among the three abovementioned conditions, the first one, i.e. the ability to predict the results of the human behavior and performance, is considered the main condition needed for ethical behavior. Doing a specific action is not a moral or an

immoral behavior by itself, but it can be ethically evaluated due to the consequence it causes. The human performance is called ethical only when he is able to predict its consequences. Because the ability to predict performances has a close relationship with the capacity of creating a rational relationship between the end and means in human being; therefore, the existence of the conceptual mind and forming the mental concepts make the major foundation of this structure. The human mind is able to predict the future and visualize the realities which are not present in the outside world and have not been present before; hereby, they can evaluate the consequence of their behavior (Avice & Ayala, 2007, p.329, 330). The human mental ability diagram based on Ayala's theory can be drawn as follows:



2.2. Distinction between moral sense and moral norms

Ayala believes that the human biological nature is of conditions which enable him to judge ethically, achieve the ethical values in the human community, and be committed to them. Therefore, human beings are naturally ethical creatures, meaning that ethical behavior results from the great rational abilities of this unique species which is due to evolutionary processes. Emphasizing the significant distinction between moral sense and moral norm, Ayala believes that the moral norms based on which specific actions are called good or bad, are the result of the cultural evolution in different human communities. In this regard, he places the moral norms in the category of the phenomena and concepts such as religion, politics, and art. He believes that like other human concepts which construct cultural evolution, moral principles and traditions completely adapt to biological tendencies of human species (Cela Conde & Ayala, 2007, p.365).

Emphasizing the distinction Darwin considered between moral sense and moral norms for the first time, Ayala believes that most conflicts about the origin of ethical behavior in human are due to the negligence of this fundamental distinction. Culture and cultural evolution are considered as a fundamental component of Ayala's intellectual system. Culture includes all political and social organizations, moral and religious practices, language, the sense of good and bad recognition, scientific knowledge, art, literature, technology, and whatever devised by the human mind. This distinction is of great importance for Ayala because it makes the main core of his hypothesis. He believes that most historical discussion between scientists and philosophers about the fact that the moral sense has a biological origin or not, has originated from lack of distinction. Scientists often believe that ethics is one of the human biological characteristics since they think of the human ethical judgment ability which is the thing makes some actions be evaluated as good or bad. Some philosophers believe that ethics is not of a biological origin and it originates from cultural traditions and religious beliefs; when they talk about ethics, they mean ethical systems which include a set of norms determining which actions are good and which ones are bad. Therefore, the question "are the ethical behaviors of biological origin or not?" refers to one of these issues:

First: is the ethical capacity, i.e. judging about good and bad actions of human beings, determined by the human biological nature?

Second: do the systems related to moral norms accepted by the humans have a biological origin? (Ayala-2008-p.249-251)

A similar distinction can be made regarding language. The question whether the ability to devise symbolic languages refers to our biological nature or not is different from the question whether the specific language we speak, i.e. English, Spanish,

Chinese, etc. is of biological origin or not; with regard to language, the answer is obviously negative (Ayala, 2016, p.242).

2.3. Cultural evolution and the formation of ethical systems

As stated, Ayala considers a significant distinction between moral sense and ethical systems such that he believes the distinction between the two is like the language learning talent and devising different languages. As the language learning talent and speaking are of human biological traits, the ethically biological talent is a natural biological trait which has developed during the process of evolution in human beings. As different ethnicities have their own specific invented languages, moral norms have also been formed with regard to specific culture and principles of different tribes. Hence, ethical standards and norms which determine good and bad deeds mostly have a cultural origin and emerged because of cultural evolution. The emergence of culture in the human community has been manifested by cultural evolution, a super organic (beyond physical structure) aspect of the process of evolution which is superior to its organic aspect and has changed into the dominant aspect of the human evolution in the recent millennium. Cultural evolution has been developed by cultural change and inheritance and is, in fact, the distinctive method of human adaptation with the environment and transferring it to the next generations (Avic & Ayala, 2007, p.320, 321). Ayala emphasizes the significance of cultural evolution since he intends to finally relate the emergence of the moral norms in the intelligent human species to this process. Therefore, the very distinctive important characteristics of human beings are, in fact, those that took place in his brain before birth and changed him into human. The mental traits of human which are responsible for his identity and mind have created the human culture and the ethical human. Human has established advanced societies with specific ethical systems by his biologically ethical ability in cultural evolution. Moreover, it is important that, in Ayala's intellectual system, the ethical instructions, like other aspects in the cultural-evolutionary systems, completely depend on the human biological nature and should adapt to it. According to what mentioned above, the ethical systems developed in the societies, like other cultural systems, cannot last for a long time and they will be deconstructed if they are contradictory to the biological characteristics of human life. To survive in a human society, the moral norms should adapt to the human biological nature because ethics is an issue which is only present in the human individuals and societies. Therefore, the acceptance of the moral norms is facilitated when it adapts to the behaviors that have a biological origin. Of course, it is expected that the accepted moral norms develop behaviors which increase the biological fitness² of the people who behave based on those

² The term "Darwinian fitness" is used in two meanings by the evolutionary genetics scientists: a local concept which means fitness and adaptation with the environment and the second concept that

norms (Ayala, 2006, p.149). Yet, Ayala clarifies that the correlation between moral norms and biological fitness is not necessary because some of the common moral laws and norms in the human societies not only do not have a relationship with biological fitness, but also some laws are contradictory to biological fitness. Hence, the relationship between moral norms and biological fitness is not necessary because some common laws in the human societies have a slight relationship with biological fitness and some of them are contradictory to the benefits of biological fitness (Ayala & Arp, 2010, p.327).

However, it is obvious that the human societies are of ethical values, meaning that they have some criteria that they judge the good or bad behaviors and actions based on which and accept the others' judgment. The moral norms based on which the ethical behaviors are judged, vary from person to person and culture to culture. Nevertheless, some moral norms such as the badness of murder and the goodness of respect for parents are common universal norms (Avic & Ayala, 2007, p.328).

2.4. Moral pluralism in Ayala's intellectual system

An ethical pluralist introduces the manner of explaining moral norms and systems based on Ayala's cultural evolution.

Edward Wilson (the founder of sociobiology) is one of the biologists who believes in moral pluralism. From his perspective, the commitment to an evolutionary approach for morality is self-evidence and no independent set of moral patterns can be used for all human societies, let alone using it for all age-gender classes in every population. Because the actions of a system are uniform and matched, creating a complicated ethical issue is difficult and uncontrollable (Wilson, 1975, p.564). According to Wilson's opinion, biology helps us make sound decisions at least regarding the certain ethical systems (particularly those pretending to have the capacity to be used universally) which do not adapt with human nature and are unacceptable. To answer the whyness of the existence of moral behavior in human being, Wilson mentions that the aim of human in progressing towards moral

means the measurement of the amount of change in in the plurality of the genetic species. Species that adapt themselves with the environment in a better way, i.e. they are more fitted to the local meaning, are also of more Darwinian fitness such that the number of which will considerably increase over several generations. Hence, the process of natural selection increases the adaptation with environment. A group of evolutionists concluded that the process of evolution, in addition to intervening and influencing the gene level, has a mechanism for group selection such that if a trait is probably harmful to an individual, it is selected and developed for its public benefits for the group. According to this, the origin of religion is also considered to be group selection such that religion is a factor for unity and solidarity of members in a coworker group so that they can increase the survival chance of each other by sacrificing themselves. According to this approach, the values, virtues, and all conservative thoughts such as patriotism, religiosity, and chastity are placed in the category of collective values; they are prescribed for the survival and superiority of the group (Ayala & Celacondea, 2004, p.174, 175).

evolution in his actions is to provide a tool to protect his genes; the thing which can be called the human biological nature. In his book titled "*on human nature*" (1978), Wilson stresses that like the deepest capacities which stimulate and direct the emotional responses, the human behavior is an indirect method the genetic material of human remains intact and protected by which. Morality has no other describable ultimate performance (Wilson, 1978, p.167).

Ayala's emphasis on cultural evolution as the main factor in establishing ethical systems and considering the variation of norms from culture to culture has made him a moral pluralist. Moral pluralism is a theory of normative ethics dealing with the structure of the ethical theories related to moral goodness and badness. The major claim of the moral pluralism is that there are a plenty of moral norms which cannot be diminished to a basic unit norm . Moral pluralism is different and distinctive from moral relativism because this theory does not regard the moral standards to be mental and illusionary or a product of a certain taste or culture, but it indicates that objective valid laws can be issued for values and, hence, it is consistent with moral realism. It basically considers the ethicality of a law as a product of a series of rational constraints; the moral laws are not totally adaptable to each other. In other words, although, in theory, the moral laws depend on rational constraints, in practice, development of a harmonic coherent ethical system will face some problems due to the existence of different cultures in human societies. Moral pluralism proposes that some theories need to be presented to maintain the stability of moral behaviors so that they can maintain their solidarity and stability. However, solidarity, stability, and universality of morality are an ideal and not a necessary condition for efficiency in practice (Becker, 2001, p.1138).

Ayala was consistent with Wilson regarding the existence of various ethical systems in accordance with the specific culture of any society; he believed in moral pluralism. But, he disagrees with the theories of Wilson and the like regarding the explanation of the origin of the moral behavior and belief in moral realism; it is because he believes that human is a moral being based on his innate ability, has a natural ability to predict the consequences of his actions and behaviors, and is able to judge in this regard. Human is able to formulate his value judgments and freely select. A creature in the name of human shows moral behavior by his innate nature and existential necessity; he does not do it for protecting the genes or other alternative goals (Ayala & Arp, 2010, p.329-330). Here, the distinctive point between Ayala's theory and Wilson and the like is made clear; regarding the justification of human moral rules, Ayala does not accept that the function of the ethical systems in human societies is only to protect human genes. Ayala rejects Wilson's idea as the theory of justifying the origin of ethical systems and believes that if we consider that the ultimate goal of using moral norms is to protect human genes, the actions of racism and genocide in a specific culture and society would be ethically considered

desirable because it is a factor which protects desirable genes and eliminates the undesirable ones. However, such behaviors raise public disgust (Baniolo & de Anna, 2006, p.154).

Therefore, Ayala has a specific definition of moral pluralism: human is naturally ethical since is of a specific rationality, this rationality has been a factor of cultural evolution in human societies, and cultural evolution is the basis for establishing ethical systems and moral norms. Hence, Ayala's moral pluralism is only relevant in the area of normative ethics and makes the ethical systems depend on culture and religious beliefs.

3. Ayala's Kantian viewpoint in justifying moral realism

From the Kantian substantive morality perspective (1790), a moral action is an action doing which has been issued because of the action itself and not because of another purpose that it is predicted the action would be realized by which. The affairs resulted from morality are made with certainty without considering that this certainty in law is in accordance with forethought or any special side benefits. The Kantian substantive morality introduces a behavior as a moral behavior which is unconditionally necessary and is not done to result in another specific purpose. According to Kantian teachings, morality is not related to what is in the surrounding world. Hence, moral concepts such as good or bad do not have any cause in the external world and our knowledge is shaped by observing the phenomenal world (Darwal, 2006, p.284).

However, some evolutionists like Michael Ruse believe that morality is an imagination or an illusion shaped by natural selection so as to improve the human being. Ruse stresses that actions that human calls them bad, are not of a certain justification dependent on a moral knowledge with ultimate goals, but it is our feelings which manifest those actions despicably. This kind of inner feelings of human beings is made by adaptation and the phenomenon of the natural selection so that the humans can evolve and become favorable social creatures, the creatures that are able to have a peaceful social life. From Ruse's perspective, moral behavior is only a feeling resulted from natural selection and embedded in the human essence so that humans would become more socially complete creatures and respect the rights of each other. This kind of feelings helps the survival of the generation and their reproduction (Ruse, 2008, p.109). Therefore, according to Darwinism, the theme of the Kantian substantive morality is a kind of illusion embedded in our genes so that we human beings would be favorable social colleagues and partners for one another (Ruse & Wilson, 1985, p. 50, 52). Such an illusion functions as a powerful and successful adaptation because humans not only believe in moral autonomy, but also they believe that it is of an objective foundation and base.

Hence, according to Ruse's deduction, there is not an objective foundation like what Kant describes in his moral philosophy, but human assumes that morality is of an objective base because of the deception of the genes (Ayala & Arp, 2010, p.330).

Ayala names his moral theory a moral autonomy theory because, on the one hand, he rejects any dependence of a moral action on factors such as group selection, relative selection, fitness increase, mutual altruism, and gene selection; on the other hand, he considers the moral sense as an objective concept (not an illusion caused by the activity of the genes). However, he believes in the existence of a moral end in human which makes him distinctive from other species. Since Ayala does not clearly determine the moral action end in human, it seems that he means that end is a kind of tact and thought in the end of the moral act which is specific to human species and is not present in any inferior species. Ayala ties his theory of evolutionary ethics to the Kantian substantive morality theory and founds an extensive moral theory which is different from the other evolutionists' viewpoints. According to Ayala's belief, moral behavior is the necessary consequence of human biological structure and is, in fact, the product of biological evolution. Ayala mentions that his viewpoint is related to the area of meta-ethics, a theory which is known as deontological ethics. (Ayala & Celandroni-2004-p.177)

4. Review

According to what mentioned above, some points can be discussed about Ayala's theories:

4.1. Ayala considers ethics as a universal human phenomenon that human beings across the world adhere to moral values. They accept specific standards, direct their behavior based on which, and judge the goodness or badness of their acts. Moreover, according to Ayala's theory, the specific ethical norms by which a moral act is judged vary from person to person and culture to culture. However, some norms such as not killing other humans, not stealing, and respect for parents are very common and widespread in a way that they are regarded as universal ethics. Therefore, the human behavior value is judged and arbitrated in all cultures (Ayala, 2016, p.239). With regard to this explanation, Ayala, on the one hand, states that the moral judgments with respect to the goodness and badness of moral behavior are different in diverse human cultures; of course, he believes that this difference depends on the cultural evolution of different societies and on the other hand, he considers some of the moral norms pervasive and universal. Ayala does not explain where the boundary of these two kinds of the moral norms is, how much the moral pluralism can be justified in different cultures, where the universality foundation of some

pervasive moral norms is, and for what reason murder, rape, and incest are regarded as absolute moral rules. It seems that Ayala should state his stance about moral pluralism in a clearer way; how can a person both believe in moral pluralism and exclude some moral norms from this rule?

4.2. Ayala puts moral norms in the category of the phenomena which we know them under the title of the politic and religious concepts or art, science, and technology or even the specific language we speak by which. Therefore, from Ayala's perspective, like other achievements obtained from human culture, moral rules and systems are often consistent with biological pre-tendencies of human species such that the moral systems in human societies are shaped because of biological evolution goals. However, many of the moral norms are shaped independently from biological requirements or pre-tendencies of human since these norms are not necessarily considered as biological consequences. Hence, Ayala does not consider biological welfare (enjoying life and reproduction) as the only factor in determining all moral norms in a society or culture.

But, it is certain that, according to Ayala's attitude towards ethics, moral rules, like other cultural systems, depend on the human biological nature and should be consistent with it. It means that these norms cannot cope with human nature and they themselves do not become destructed. Furthermore, the acceptance and durability of moral norms become simpler when these norms become consistent with those human behaviors which are shaped due to biological conditions. However, moral norms are independent of these behaviors, meaning that some norms may not be favorable for human and postpone the life and reproduction of the individual and the genes that are the goal of biological evolution. Lack of harmony and consistency between the accepted moral rules and biological life necessarily has limited goals; otherwise, they lead to the extinction of a group that follows these rules.

Ayala admits that some moral norms are not shaped in accordance with evolutionary goals and he states that these norms should be deconstructed. It seems that limiting the structural basis of the moral systems to the phenomenon of cultural evolution excludes the explanation of the nature of these systems such that, according to Ayala's opinion, no comprehensive unconditional theory can be presented about all moral systems shaped in human societies and their evolution. Moreover, there are some moral norms that although they have not followed evolutionary rules, they have not been deconstructed and still exist in some societies (like cultures in which homosexuality and incest are considered as a part of the accepted moral norms).

4.3. From Ayala's perspective, the distinction between moral judgment and moral norms in human is like the difference between the theories of meta-ethics and normative ethics. Ayala states that the objective of the meta-ethical affairs is to show us why we do what we should do while normative ethics merely tells us what we should do. The initial claim of Ayala is that the moral evaluation of actions originates from human rationality or, as Darwin puts it, it originates from the very advanced mental forces of whom. The very high intelligence of human lets him predict the consequences of his actions and categorize his acts as good or bad in terms of the consequences they may have for others. Therefore, Ayala includes his theory as a meta-ethical theory in the area of the Kantian ethics or deontological ethics (Ayala, 2016, p.244). From Kantian substantive morality perspective, a moral action is an action doing which has been issued because of the action itself and not because of another purpose that it is predicted the action would be realized by which. In Kantian viewpoint, the affairs resulted from morality are made with certainty without considering that this certainty in law is in accordance with forethought or any special side benefits. From Kant's and Ayala's perspective, the human moral behavior is completely and merely related to human rationality, emphasizing that this rationality, according to Ayala's opinion, is the result of biological processes which have been obtained from natural selection over time.

4.4. Kant considers the human rationality power as the distinctive feature of human with other creatures. This power is manifested by the determined will and is presented in the form of the rational rules and propositions. Kant believes that if freedom is to be the attribute of something, it should be the attribute of will. Will has the power to create works and actions, but it is not caused by something else. In the Kantian expression, freedom is placed against natural necessity, a necessity which is an obvious feature of all causal acts in the materialistic nature. Therefore, human authority and his free will are the criteria for moral acts in Kantian philosophy (Kant, 1997, p.21, 52). As such, in Kantian philosophy, will entail morality and it is unique and essential for all wise creatures. Ayala, too, considers the free will as one of the main conditions for the human moral behavior and believes that the ethicality or unethicity of an act can be judged only with considering the existence of the free will. However, he states that moral systems are created by culture, have been formed in accordance with biological conditions in every society, and do not make up a generally united and necessary system. Hence, specific moral system and moral rules of a culture and community will be confirmed as the necessary

moral rules consistent with the culture of every community during a specific period. Some Kantian philosophers who believe that the evolutionary explanations diminish morality to biology, remark that this kind of reductionism violates the Kantian substantive morality principles. Thomas Nagel³ is one of the deontological ethics philosophers who not only considers the moral independence in its independence from religion, but also believes that morality is not even diminished to psychology, sociology, and evolutionary ethics. Therefore, these philosophers believe that Ayala's claim about the substantivity of the evolutionary ethics is problematic because although Ayala considers rationality as the foundation of ethicality, he is still committed to the rationality which is a product of the evolutionary processes; a rationality whose foundation is biology. Thomas Nagel considers the issues related to ethics as a kind of theoretical subject based on adopting the rational-analytic methods having independent and internal criteria for criticism and justification. He believes that attempting to understand morality as a kind of specific behavioral patterns or habits that biological theories seek to explain it, would lead to no result. Nagel believes that ethics is a kind of development process whose results are continuously revised and progressing. Therefore, ethics cannot be regarded as a set of the intellectual and behavioral habits. Moreover, he states that as biological theories cannot explain mathematics, a biological approach to ethics also leads to no result. (Nagel, 1979, p.142)

According to the opinion of people like Nagel, we cannot analyze the ethical issues with a biological approach since it nearly leads to no result, let alone we consider such explanations in line with deontological ethics philosophy and Kantian substantive philosophy (like what Ayala follows). However, it seems that Ayala has been committed to the Kantian morality in explaining human moral sense and considering it to be specific to human species. Like Kant, he regards rationality as the only cause of morality in human. Yet, his ideas are not consistent with Kantian

³ Thomas Nagel (1937) is an American philosopher university professor of philosophy and law at New York University (NYU) at the present. His main areas of philosophical interest are philosophy of mind, political philosophy, moral philosophy, and epistemology. Nagel is well known for his critique of material reductionist accounts of the mind, particularly in his essay "What Is it Like to Be a Bat?" and his contributions to deontological ethics. His famous works in the area of moral philosophy are:

Nagel, Thomas (1970). *The possibility of altruism*. Princeton, N.J: Oxford University Press. ISBN 9780691020020. (Reprinted in 1978, Princeton University Press.)

-Nagel, Thomas; Held, Virginia; Morgenbesser, Sidney (1974). *Philosophy, morality, and international affairs: essays edited for the Society for Philosophy and Public Affairs*. New York: Oxford University Press.

- Nagel, Thomas (2010). *Secular philosophy and the religious temperament: essays 2002–2008*. Oxford New York, N.Y: Oxford University Press.

morality and rationality and he believes in pluralism in the area of the normative ethics.

5. Conclusion

Although Ayala's emphasis on the unique rationality of the human species in the formation of the moral sense foundations is based on naturalism and biological evolution, he believes that it is only the human intellectual power that makes him a moral being; hence, it can be considered as a Kantian account. However, this theory is a controversial issue from the perspective of the neo-Kantianism philosophers like Nagel. Furthermore, pluralism in the moral norms is a belief that considers the moral values as objective and is not able to present a coherent universal moral-normative system though it seeks to liberate itself from relativism. Therefore, Ayala attempts to justify pluralism in the area of the normative ethics by emphasizing cultural evolution and highlighting its role in the formation of the moral systems of different societies, but he faces a deep hole or gap between two parts of meta-ethics theory and normative ethics, a gap which destroys the coherence of his theory. A part of his theory which justifies Kantian morality with regard to the origin of morality is placed on one side of the hole and the second part which justifies the moral norms is placed on the other side of the gap. It seems that Ayala needs to build a bridge so that it can connect the two sides of his theory because cultural evolution and biological explanations are not able to connect these two parts of Ayala's theory by themselves.

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