

# The Influence of Natural Selection and Other Disciplines on Ecological Economic Values

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## Abstract

The motives behind the economic value in human behavior are a topic of longstanding foci of research interest. Two motives, self-interest and altruism influence in different degrees in form of inclusive fitness in natural selection and contribute in determining and reasoning the values in human societies. We elaborate how inclusive fitness (self-interest and altruism) shapes the values, and behavior resulting sustainability of species and ecosystems. We argue self-interest and altruism combine in different scales that determine human values. The concept of value in economic analysis changes over time with the development and influence of other disciplines and in economics, propagates in more multi-disciplinary way per se in ecological economics currently. Animal behavior studies provide examples that value originated as result of natural selection in animals as a biological process. The paper contributes to the debate on how natural selection generates the mechanism of surviving which in turn originates in particular existence value, option value and values which support the sustainability of ecosystems.

## Keywords

Altruism, Culture, Ecosystems, Existence Value, Inclusive Fitness, Self-Interest and Sustainability

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## 1. Introduction

The discipline of Economics is considered to be established after Adam Smith's masterpiece "Wealth of Nations". Likewise, the theory of evolution and biology are considered to be established after Charles Darwin's masterpiece, "On Origin of Species". Both philosophers have examined the impact of scarcity and some

claim that Charles Darwin inspired and studied from Adam Smith's work. Smith (1776) first defined the term value in his masterpiece (p. 22). Since then, the definition of value in Economics and in Ecological Economics has changed over time with the development of the discipline and influence of the development of other disciplines. Natural selection is a physical and mechanical process by which only the fitted individuals survive and pass their genetic materials to offsprings. In this review paper, I discuss natural selection behavior and explain how it generates self-interest and altruistic behaviors in line with Value-Belief-Norm (VBN) theory. I elaborate how natural selection originates ecological economic values, existence value, bequest value and other unestablished and undefined values that I attempt to explain and define in this paper, such as value of sustainability and intra-group values through varieties of altruism. The self-interest combines with altruism in different combinations and contributes, and influences to the existence value, and option value so as to progress the natural selection. The group behavior in form of culture as a result of evolution creates religions which in turn contribute to the existence value and cultural values of ecosystems which I elaborate in this paper. Natural selection creates three main spheres of values self-interest altruism (caring relatives and those care about), humanistic or social altruism (altruism on human beings) and Biosphere altruism (all living beings), which means the altruism is at different levels of sustainability. The paper is outlined as follows. Firstly, I search the definitions of economic value and evolution of its definition with the development of its branches, such as environmental economics and ecological economics in the face of the influence of developments of other disciplines and the definitions of value in those disciplines. Next, I concentrate evidence in animal group behavior such as eusociality and argue that natural selection contributes to the ecological economic values in human society followed by scrutinizing all values as a result of natural selection as an optimal combination for killing an animal for self-interest and committing suiciding for other's benefits in the group. The kinds of values that has weak reasoning and explanations in literature are expanded towards a sound reasoning of biological sustainability or survival of individuals to total global system shifting the value for sustenance of global ecosystem. I discuss the theories of anthropologists who argue origin of religions is a mechanism of corporation among groups and entire ecosystems. Next, I discuss the influence natural selection on cultural values in line with Value-Beliefs-Norm (VBN) theory, followed by a discussion on nature of future values in modern society.

The contribution of this paper is such that it explains multi-disciplinary nature of knowledge in thinking of value in ecological perspective with analysis of natural of selection as a base. Moreover, the paper explains the literature relating to origin of values in animals and how they are observable in human societies. Finally, this paper contributes how the other disciplines influence to expand components of ecological economic values followed by scrutinizing poten-

tial future of values in the modern world with spreading of knowledge in modern culture through modern technology.

### 1.1. The Concept of Value

In the consideration of animal kingdom, obviously in economic point of view, value even in animals is associated, when they consume something in short-run or long run, even though their values are not that much various as ours, human beings. In primary stages of evolution, a bacterial cell and say a paramecium cell response only in chemical means for food and sex as they have no sound, smell, light and contact organs to attract and communicate with each other and environment, but they have chemical responses to move towards where food is available and for sexual behavior. In Mollusca phylum they, have eyes along with nervous system and hence they could have values. Firstly, development of nervous cells and systems could have developed value; the generating a value in animals need to receive the information, process them and make a decision. With the development of nervous systems, the value processing in animal minds would be increasing. Any observer could currently see the word value is coming originally from Latin and then in English (Dietz et al., 2005). However, I accept the reality that there are different words in different languages, which make different measurements to the value. In this case, I limit my discussions and explanations to English. Assuming that the dictionary professionals would have searched, the meaning of word in time horizon, I keep priority for what standard English dictionary explains the value in general before moving to a few disciplines. As Dietz et al. (2005) cited, value comes from Latin word *Valorem* to be strong to be worth. According to Webster's 1913 dictionary (accessed on March 20, 2021), value has several meanings: property of a thing that is useful or desirable, worth estimated by market price, precise importance and relative duration of a note-to-mention some.

In Economics values are defined more than in the other disciplines. However, these other disciplines discuss the economic values in somewhat broader context in order to explain human behavior in those disciplines. Firstly, I discuss economic values, and value in environmental economics, followed by value in sociology, anthropology and environmental philosophy respectively.

### 1.2. Values in Environmental and Ecological Economics

In classical economics, value is obviously centered always around the utility maximization function to be obtained from a materialistic consumption, non-materialists service or any satisfaction to be achieved from something happening. It is observable that the father of economics Adam Smith (Smith, 1776: p. 22) explains that the value could be expressed as the utility of purchasing of another good in two ways, "value in uses" and "value in exchange". This means exactly the value or utility of consuming some good and value of substitution is lucid and straightforward. Human behavior could be modeled in rational actor

model, in that people select some from a bundle of choices which makes outcomes that maximize the utility of former decision-makers with some level of uncertainty. The theory rational expectations developed by Robert Lucas are the underline assumptions of rational actor's model that is every decision made by an individual is to maximize the consumptions either in short-run or long run is to maximize the utility. This could be an individual decision-making. Next a group of individuals could select a choice or choices which makes some outcomes that maximize utilities of individuals in the group. Value is twofold: individual value and group value. Rational actor model is greatest good to greatest number of individuals. With the evolution of the group behavior, value system changes where individuals have to value some things by compromising other values the "give and take business". As economic theories do not say anything about why people select what they would like (Dietz et al., 2005). However, I believe and attempt to explain why people select what they like to through natural selection defining values that is, to certain extent, the sustainability.

In environmental economics and ecological economic mostly value is discussed in estimating the values of ecosystem, virgin forest and their services and/or any environmental change to be taken place or already happened. Ecological Economics examines and attempt to estimate more complex values of scientific processes of physical ecosystem and more complex behaviors of society such as cultural and historical values compared with environmental economics. In most cases researchers quantify each component of total economic value in monetary terms. Here I discuss in general total economic value of an ecosystem in a lucid manner, while paying somewhat deep attention to behavior and dynamics of ecosystems. Mostly in environmental economics, researches discuss total economic value of an ecosystem. The researcher categorizes total economic value in a few methods. In one method (Munasinghe, 1993) total economic value is divided into two parts-use values to human beings and non-use values. The values are utilities attained from direct consumption of goods such as food (fruits, leaves) or non-material values such as scenery value of the environment like Grand Canyon. Indirect use values are fixing carbon by plants, regulation of temperature by ecosystems and conservation of soil by forests or any environmental change the respondents would wish to happen. Option value is the value of keeping the environment or ecosystem as it is in order to use or convert to any other system. Option value is coinciding with existence value and sustainability (if not reversible). I later analyze this value under the value of sustainability. So this has a relationship in evolutionary biological point with sustainability. Value of preservation of some ecosystem, forest or a landscape is an aggregate value of existence value, option value and bequest value (Freeman, 2003).

Next more recently with the advent of environmental economics discipline, (Krutilla, 1967: p. 3) explains the existence value as a significant portion of real income of individuals who are willing to convey for the conservation of critical ecosystems, landscapes, and endangered species. This is the first definition for

the “existence value” in environmental economics that is the critical portion of many individual’s incomes to be conveyed for preservation of such landscapes like Grand Canyon and critical endangered species and ecosystems. This value could be spiritual that is out of utility of consuming or option value the ambition of choice of utilizing in future if the ecosystem or landscape were not changed by using it particularly in absence of substitutes to obtain more or less similar utilities. Option value of preserving for future use may not, in most cases, only a local interest-but a universal for the use of all people in the world and other living beings. Many goods and environmental services that are useful for people and have utility, but have no market prices. However, these kinds of goods and services are valued in the discipline of environmental economics employing the techniques of non-market valuations. These kinds of services are flood prevention by forests, climate regulations and scenery values.

Ecological economics is more young compared with environmental economics. Environmental economics developed mainly in 1960’s. However, ecological economics developed in 1980 moving toward more ecological aspects, equity, inter-generational and sustainability issues of economics. Therefore, value in ecological economics moved more advanced in which values became more close to values defined in other disciplines and values of complex chemical reactions and biophysical processes. The Millennium Ecosystem Assessment (ME, 2005) categorizes values to main four groups-provisioning services, regulatory services, habitat services and cultural and amenity services. The inspiration for culture, arts and design is more towards anthropological perspective., whereas cognitive development for psychological perspective. Dietz et al. (2005) explain norms and beliefs have to be integrated in the environmental management. However, Millennium Ecosystem Assessment (ME, 2005) has defined spiritual and cultural aspects which is an integration of other values to the ecological economics.

According to Dietz et al. (2005) behaviors could not be reasoned for decision making always and values estimated in environmental economics are far away from real values as respondents report themselves these values in Willingness to pay (WTP) studies. However, it is admitted that in environmental economic revealed preference method displays more reliable values than stated preference methods. Samuelson (1983) explains that Neo-Darwinian synthesis could appeal to kin selection and inclusive fitness as the basis for viable altruism in individual natural selection. Samuelson (1983) attempts to justify altruism in biology that contributes to group fitness through natural selection and explains the biological mechanism of group fitness and altruism. He explains natural selection, fathering and constant returns and talks about sex ratios of male and female. The Malthusian point is that every species is constrained by environment’s limits and by competition with other species so as to have its ultimate growth rate go to zero rather than growing to maximized positive value. He explains more on validity of natural selection and explains that in genetics no linear programs, no thought and limitation.

### 1.3. Values in Sociology, Anthropology, Psychology, Philosophy and Ethics

Fransson & Gärling (1999) describe the differences between values, attitudes and norms. The attitudes are positive or negative assessments of values whereas norms the statements about a value. The concept of value is explained in other disciplines such as sociology, philosophy and political sciences, (Diets et al., 2005). Further they (Dietz et al., 2005) argue that values influence individual and group behavior. Dietz et al. (2005) explain in environmental economics values are assigned to environmental change. They continue that value is related to broad literature in an altruism in evolutionary theory, empirical studies in sociology, social psychology and political sciences that examines values not relating to behavior, such as norms, beliefs, and attitudes. In environmental economics attitudes are not in a position to convert them to values, however under planned behavior in social psychology (Ajzen, 1991), attitudes are the proceeding to make decision of keeping values by people or decision making. The norms and beliefs are not in the scope of environmental economics. However, people themselves develop norms and belief as a group (group behavior) and then claim for their values. Norms and beliefs are the elements of group behavior that is, the vital for group selection and group survival. The original norms and beliefs of a tribe or a particular group society are shared by others in order to maintain cooperation in the group. Even though, Dietz et al. (2005) argue that weakness of value is that people imitate others values and people have less information about environmental unknowns. The counter argument is such that imitation is falling in the scope of psychology and imitation is safe in the case, first decision maker is accurate. Becoming more multi-disciplinary currently ecological economics attempts to capture the impact of unknowns such as valuing ecological functions as well as other disciplines like anthropology taking into account spiritual values more information of ecological dynamics, defined in Millennium Ecosystem Assessment. Next I move towards values in philosophy and ethics.

The value, as it is obvious, is discussed in each discipline in its scope to meet the own disciplinary objectives and boundaries. According to Dietz et al. (2005) values arose in economic life and thoughts in 18<sup>th</sup> century and particularly in German philosophy in 19<sup>th</sup> century. However, I extend this ideology such a way that the basic idea of value among living beings origins, in philosophical point of view, in original life forms with the origin of the symbiosis and competition. The altruism could be found in early evolutionary stages of life in living beings such as protozoans. According experiments of Strassmann et al. (2000), variety of amoeba namely social amoeba (*Dictyostelium discoideum*) develops a multi-cellular structure, though they live in most of the time as a single cellular form, as a simple model for altruism. At fruiting stage, it becomes a society. The amoeba breeds asexually. In keeping in starvation 104 - 105 number of cells aggregate into a slug. About 20% of anterior part of the slug differentiates into non-variable stalk which supports altruistically to some cells to produce viable

spores. This is a model of social evolution. Altruistic stalk cells give up reproduction in order to benefit spore cells. *D. discoideum* aggregate includes more than one clone and analogous to societies of social insects. Therefore, this is an evidence to claim that natural selection develops altruism in early stages of life.

According rational actor model, people weigh alternatives and make decisions for our preferences. Then they choose options. Therefore, it is as expected discussed instrumental value the estimates of human use values of environmental amenities or direct benefits are coming under the rational actor model.

Instrumental value is discussed in ethics too. It is difficult to use intrinsic value in policy decisions but instrumental value is. However, for intrinsic value there needs to listen to people. Freeman (1992) continues the discussion on value that some aspects of biophysical environment, beautiful landscapes, fragile ecosystems that have intrinsic value. That is the value is independent from value humans assign to them. Intrinsic value is such that biophysical environment always has a value, but some argue value is assigned by humans in quantifying intrinsic value. This intrinsic value looks more like as a thought of philosophy. However, accepting the intrinsic value in environmental economics (Freeman, 2003), could support more environmental economic in order to accept other disciplines in ecological economic itself. Problem of intrinsic value versus instrumental; value in environmental ethics relates to a core question of study of behaviors. Dietz et al. (2005) say assigning intrinsic value to other species and ecosystem is that we keep value regardless to importance of human beings.

#### 1.4. Neuroeconomics

The recent branch of economics the Neuroeconomics, reveals more evidence on human behavior through scientific experiments. In this discipline, Krawczyk (2002) describes that the nervous foundation of decision making behavior is hard to examine and often expected as a wide area to examine. My argument is such that the neural basis of the decision-making is totally a route of evolution the natural selection that is surviving of most clever decision makers to survive.

This means, with this evidence, that value has foundation of natural selection. The study of Krawczyk (2002) contains several sub-processes and activities that go into some form of decision making that was difficult to examine. The study has used animals to examine and generalize the results. With this evidence I argue the chemical and physiological basis that is definitely a result of evolutionary process through natural selection has a basis for decision making, and values specially existence and option values. Sanfey et al. (2006) explain the question of how human beings make decisions and judgments and continues to pose important challenges for scientific research. However, neuroeconomics attempts to bridge this gap in bridging research in neuroscience and psychology to investigate neural bases of decision predictability and value, the central parameters in the economic theory of expected utility. Hoffman (2004) argues that great developments in our knowledge of evolution, neural system and human behavior

pave the foundation for the law. However, while I agree with this explanation, it should be elaborated that evolution, in our case the natural selection and inclusive fitness, is the root cause of the developing neural system and behaviors. Moreover, Hoffman (2004) elaborates that developments in neuroscience provides missing part of roles played by a brain-to behavior mechanism. The development in neural system is as result of natural selection, the natural selection could be too a great explainer of missing components of brain and behavior.

## **2. Value of Preservation (Sustainability, Reversibility and Existence, Bequest and Option Value)**

The total value of preservation of an ecosystem is the aggregate of existence value, bequest value and option value (Freeman, 1992). Chomsky (1986) says that people have developed language skills during the evolutionary history and therefore language skills could be a part of natural selection. Therefore, I argue cultural values have the basis of natural selection. The attributes of the value could be beauty, complexity of the ecosystem or existence of both useful or non-useful animals. I argue existence value has a component of sustainability that is against irreversibly. The value is starting from self-interest for the survival, move towards different varieties and degrees of altruism and finally for the sustenance of global ecosystems. Dietz et al. (2005) explain the value bases for environmental concerns: self-interest, humanistic altruism and biosphere altruism. The self-interest the value of benefits to those we care about relatives and so on, which are direct values in total economic value to the relatives and family members, that is a combination of self-interest and reciprocal altruism. Then the humanistic altruism is, of course, the concern of human race. I believe this value is more with existence value with altruism for human beings. This could be coming from developing group behavior in evolution as a parochial altruism in one sense a kin selection. The finally biosphere or biocentrism, the altruism for all living beings. In sustainability point of view, this value is the existence value of ecosystems and even the ecosystems unknown to the human beings living far away on earth from where they live in. Once some carnivores killed the mother prey, they protect the babies of mother which could be biosphere altruism.

## **3. Influence of Natural Selection on Culture vs Cultural Influence on Values**

Now I discuss the influence of natural selection on culture followed by influence of culture.

People develop cultural values themselves first and later they claim these values as their values and heritage. Samuelson (1993) explains most of the human behaviors could be explained in biological context. Therefore, it is discussed in this section that these values have some influence from natural selection in line extending Samuelson (1993). Human babies have in born talents in languages and abstract mathematics (Chomsky, 1986). This inborn talent would enhance



developing efficient communication and language skills. Therefore, these languages are the stock of knowledge, values, customs, traditions, norms and notions. These factors all together determine values of the culture. Therefore, I observe something valued in one culture, but devalued in another. These in born talents are inherited genetically from natural selection. In another point, origin of religions is a result of group behavior through natural selection. Some researchers argue the religions are a byproduct of evolution whereas others as a part of adaptation (Pyysiäinen & Hauser, 2009; Sosis, 2009). Pyysiäinen and Hauser (2009) explain that while some scholars argue that religion to be evolved as an adaptation for developing cooperation with other species whereas others suggest the emergence of religion as a by-product of evolving cognitive skills over time. I explain whatever the method the religion evolved in, both are related to natural selection and these religions shape the values of humans. So my argument is such that ultimately natural selection shapes the values. Same as Pyysiäinen and Hauser (2009), Sosis (2009) say that the community of scholars who study religion remains divided. Most scholars studying religion are in the humanities—historians, philosophers, religious studies scholars, theologians—consider that evolutionary aspects of the religion could explain great insights and provide new productive avenues for the research. However, both adaptation and cooperation are the products of the natural selection.

For homo sapiens, culture is the major influential behavior. However, I argue, with the evidence of other disciplines, that the culture is also a group behavior inherited from natural selection. Self-interest is common and altruism is rare because over time altruism gone. Altruism co-exists with self-interest rather than replacing it. Schwartz and Bilsky (1987) explain values are concepts or beliefs which describe end stage or behavior, guide selection or evaluation of behavior and events, and ordered by relative importance. I argue that people develop culture with their language skills. In support to this conceptualization, Slagsvold and Wiebe (2011) show social learning mechanism. The birds train their babies for predator recognition, singing, mate choice and foraging. This mechanism is more than imitation, but sufficient for faithful transmission depending on the ecological circumstances and also early learning causes a shift in the foraging sites depending on seasons and analysis of prey items. This foraging behavior can be culturally transmitted over generations in the wild. Next I have the evidence from behavior of social animal's bees on teaching their babies. Chittka and Leadbeater (2005) examine behaviors of insects as social learning animals. They explain that individuals learn from others. Further they explain how insects can adjust their behavior adaptively by making use of cues generated inadvertently by other individuals. Moreover, Noss (2007) explains that in spite of market, animals have values and it has to be examined which elements should be behind these values. This makes my position that the value is an element of natural selection that is the only mechanism which inherited all things living beings including the value as the value supports to survival and progress in ecosystems.

Therefore, I hold the position that social learning behavior is common to human beings and animals which pave the basis to argue that human cultural behavior is inheriting from genes as a result of natural selection. Therefore, it is not so hard to come into a conclusion that cultural behavior has the components of natural selections. Now I move towards cultural influence on values.

Culture could be defined that it is an integrated system of beliefs, values, attitudes, norms, meanings, and symbols all of which are followed by the individuals in a society (Hofstede, 2001). Cultural values are more obviously a kind of group values inherited to an individual or a group from birth and learning from adults, observing, experiencing and practicing these values. Some value of a particular good or service of an ecosystem or forest could be worth to cultural groups whereas the same would have a zero or negative value to different groups. However, this behavior and value system, in evolutionary point of view, is a group behavior, a result of natural selection. With spreading the knowledge in societies, these values could change in different rates over the time. However, some of them would still remain in cultural groups. These values could be influenced by religion or else another belief they practice.

Einstein (1940) explains what religion such a way that being religious means liberated from selfish desires and distracted from aspirations, thoughts, and feeling due to super-personal value. He goes on that religious means humans become clearly conscious of these values, thoughts and feelings; religions support evaluations of human feelings, thoughts and values. My argument is such that natural selection generates religions and then religions shape the values. Costanza et al. (1993) compare the genetic evolution with cultural evolution. The genes generated from mutations, combine with others in sexual behavior and select through natural selection would store information and pass to new generations. They argue, in the same manner, cultural values (and ecological and economic values) also pass and propagate over time in cultural system. The information storage medium, in propagation of cultural values, is traditions, beliefs, religions, languages, drama, folk talks and customs. However, I extend that there exist critical differences between natural evolution and cultural evolution-natural evolution completely based on physical competition for sex and survival whereas the cultural values are mostly arising as a group values. The genetic information passes through the sexual competitions and cultural values propagates as a group value as a base of how fast information passes and accepts by the others. It is difficult to perceive a competition in propagating values in cultures. In human society and social animals, group behavior such as priority selection of individuals for mating pre-determine which genes to be passed, in cultural evolution from culture values disturb to pass the genes of dominant individuals as limited family life and cultural values to limit sexual behavior to a one or a few individuals. In human societies passing genes to new generation through sex is mostly determined by the culture as marriages limited to one or a few wives in some cultures and raising a limited number of off-springs. In ani-

mal species always powerful individuals have the chance of mating and giving birth to any number of individuals. [Costanza et al. \(1993\)](#) argue that Cultural evolution is potentially much faster than genetic evolution. The costs of this rapid cultural evolution, therefore, are potentially significant. As [Arrow \(1962\)](#) has pointed out, cultural and economic evolution, unlike genetic evolution, can to some extent employ foresight. [Chomsky \(1986\)](#) explains babies have skills of languages and abstract algebra when they are born. My belief is such that these kind of knowledge which help to pass values to new generations are inherited to humans as a result of natural selection. As language skills of any individual change with aging ([Chomsky, 1986](#)), the values could change. [Vidyaratne et al. \(2020\)](#) finds that old people have high bequest values and tend to plant trees as inheritance to descenders.

#### 4. Self-Interest and Altruism

In early literature, self-interest and altruism were separate motives of behavior. In this paper I frame the self-interest and altruism dynamics in determining the values and associated behaviors. According to [Becker \(1976\)](#), self-interest could be considered as dominating all other motives. The central problem of self-interest and altruism is that it is difficult, in most instances, to distinguish whether it is self-interest or altruism. Nevertheless, we believe the understanding the dynamics of them and interactions between them would bolster in deepening the cognizance of the roles played by each of them. [Becker \(1976\)](#) admits the weakness of analyses is that economists and sociobiologists rely on rational actor models and sociobiologists believe that surviving either as an individual or group is as the rationality; he argues the analysis could be more powerful by combining both the individual rationality and group rationality. As my belief is such that it is not easy to combine individual rationality and group rationally, I attempt to define and evaluate the issues of self-interest and altruism regardless of disciplinary aspects. The altruisms could be found in form of eusociality where the group behaves in an effluence mechanism by compromising some satisfaction (utility) sex in order to gain something such as security in living in a group. [Thorne \(1997\)](#) provides information on the contribution and examples of eusociality in family Hymenoptera, as a mechanism for fitness and natural selection. In small social animal's family's helpers get the choice of breeding or not breeding. In eusociality of termites, they have to survive as a group as if they disperse, life is high risky for small animals, as to survive as group, they need attackers. The generations are overlapping, display monogamy and multiple reproductive cycles. [De Waal \(2008\)](#) argues empathy as a variety of altruism that is directly responding to other's pain and distress. Of course this is, not like reciprocal altruism, the motivation to help weak individuals or whenever any individual is in a problem, other without expecting any benefits in future. In supporting this argument, our classical economics argues sympathy not to be at all a selfish motive ([Smith, 1759: p. 317](#)). Therefore, I believe sympathy contributes to existence

value and ecological sustainability as it helps to preserve animal lives themselves. Therefore, this confirms that existence value has, at least, a non-altruistic component which contributes to the survival of the ecosystems. Then according to the definition of empathy, sympathy could mean empathy that is helping weak living beings without expecting future benefits when the beneficiaries are at stress in any situation where they need a help to survive. As [De Waal \(2008\)](#) explains that evolutionary theory postulates altruism behavior as a reciprocal one, where motivation is return benefits, then what motivates empathy and sympathy. My view is that it is the value inherited from natural selection for sustainability of global ecosystems. We believe and then argue empathy in this context contributes to the existence value and as it contributes to existence values and subsequently negative irreversibility, stability, existence of systems, sustainability. Empathy may be unequally well suited for bridging the gap between egoism and altruism, since it has the property of transforming another person's misfortune into once own feeling of distress ([Hoffman, 1981: p. 133](#)). Then I move to explain how group behavior as results of natural selection, I argue in that line of empathy, and sympathy both have evolutionary routes which strengthen fitness of ecosystem. Therefore, we hold the position that the existence value behavior, empathy and sympathy all contribute to the fitness of other animals in the ecosystem. The female predators (lioness) protect, and raise, for example, the babies of preys after they killed the prey mother ([Smithsonian Channel, 2015](#)). This behavior is a fitness of entire ecosystem. However, in the case of group fitness, prototypical altruism is applied where attacker bee in the bee colony scarify life to protect hive from any enemy. This can happen in human beings as well as in many social animals, ants, termites, and insect colonies as well as in mammal per se rat race. This motivation is aggressive than benign. [De Waal \(2008\)](#) explains primate cooperation is promoted by social tolerance. Tolerance is a mechanism for corporation offering benefits to all contributors. However, [De Waal \(2008\)](#) explains three ways of direct altruism, occur-learned altruism where helping as a conditioned response expecting appositve return for the actor, intentional altruism where help by predicting return benefit for the help (reciprocal altruism) appreciation is expected based on prediction and empathy based altruism behavior as same as direct altruistic behavior, may display intrinsically rewarding qualities it helps ameliorate intentional state (satisfactory) of the helper by observing the other is happy. Adding to that, [Kagan \(2000\)](#) explain that human society is altruistic species, they always expect a return. In following all biological theoretical foundations such as scarifying life for the benefits of other in the group and survival of the group, and influence of existence value for sustainability, I am not in that position that human society is altruistic expecting always returns as I hold the position that altruisms is common in animal kingdom as inherited from natural selection mechanism. Another evolved behavior is motivational autonomy that is motivation is disconnected from original goal. For example, sexual behavior in animals and humans display greedy and humans have sex

many times as much as without pregnancy for pleasure. However, one might argue that long-term pleasure as a goal of survival and keeping the sexual strengths to have sex whenever, they need off-springs.

## 5. Future Values

Currently people in different parts of the world learn faster than ever about fragile ecosystems, landscapes, and behaviors of animals through internet and youtube. This could change the knowledge and hence influence the values. Internet usages are becoming cheaper, affordable and spreading faster in rural areas which in turn develop the user's knowledge in English. By 2050, two-third of the world's population would live in urban areas (Salam, 2020). According to Ernstson and Sörlin (2013), ecosystem is valued in social science perspectives in urban setting rather than just quantifying values. They argue as cities continue to grow in size and numbers, increasing intellectual energies have been mobilized to develop analytical and policy tools that can be used to sensitize urban decision-making to complex biophysical processes. As urban population increases by 2050, their ecological economic values could be changing. Currently people study small change of ecosystem in one part of the world and quantify its impact in another remote part in the globe through their new discipline ecoclimate teleconnection (Garcia et al., 2016). Therefore, in future with this knowledge will influence their values.

## 6. Conclusion

In this research, I expected to securitize the influence of the development of other disciplines on economics values. I expected to examine the influence of natural selection to value also. I could find that the development of ecology and anthropology have contributed to diversify the ecological economic values including cultural values, historical values and beliefs from anthropology and values of ecological functions from understanding the importance of ecological, chemical and physical process of the environment. In future, with the development of knowledge on ecosystems and spreading of it quickly in every part of the world through internet, there could be common value in every part of the world.

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## Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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