

ALTRUISM AN EVOLUTIONARY PATHWAY. A REVIEW ON THE EVOLUTION OF ALTRUISTIC BEHAVIOR

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Abstract.- Since the brave attempts to bring Biology to the center of the social sciences discourse, by Edward Wilson and Richard Dawkins with their books *Sociobiology* and *The Selfish Gene*, more than forty years ago, Biology has gained recognition as one of the, if not the, main area in the search for human behavior understanding. Disciplines such as behavioral genetics, cognitive neuroscience, and evolutionary psychology among others have been brought to the center of the spectacle in the quest for the understanding of the mind and the influence of those areas is growing every day. Within this perspective this article brings attention to how the problem of understanding human altruism could be better comprehended with the addition of the information brought by the biological disciplines involved in the understanding of human behavior.

KEYWORDS.- *Altruism, Human Evolution, Evolutionary Psychology*

1 Introduction

The matter of altruism has been object of scrutiny in biology since 1872 when Charles Darwin used his theory of evolution, based on natural and sexual selection, to explain what he called “moral sense” in his own words “Any animal whatever, endowed with well-marked social instincts, the parental and filial affections being here included, would inevitably acquire a moral sense or conscience, as soon as its intellectual power had become as well developed, or nearby as well developed, as in man’ (Darwin, 2002, pg. 121).

Since that time this subject has been scrutinized by biologist and psychologists alike with a perspective centered on evolution, physiology and genetics among other biological sciences. This perspective generated different theories during the XIX and XX centuries to explain the subject of altruism, theories such as parental selection and reciprocal altruism, but until today researchers in evolutionary psychology and behavioral genetics are still trying to bring some light to the subject of altruism and a lot of knowledge has been produced in the comprehension of our altruistic behavior.

This article is a historical review on the biological perspective of the origin and function of altruistic behavior as it is a closer look in the recent research done by the evolutionary psychologists on the subject. This article is divided in four parts being part one this introduction, on the second part we show how a behavior can be the result of an adaptive trait, in the third part we show how kin selection, reciprocal altruism and indication of suitability are adaptive traits that can lead to altruistic behavior, and finally in the fourth part we make the final analysis on those themes and conclude the article.

2. Altruistic adaptive behavior in animals and Humans

For most part of social scientists culture is something limited to human beings and sometimes to other primates. But, for what we have seen nowadays, it's a limited and hasted view, and if we are to understand culture as a system of patterns, preferences and behaviors regarding animal activities socially transmitted, we have precedent to start questioning current views on the matter. In the case of social animals the development of patterns in the behavior which includes altruistic decisions and what we call "moral sense" gives them some adaptive advantages in their own social environment, and sometimes, among other groups or tribes. Within the field of ethology this is common Knowledge, Insects such as ants and bees, all sorts of mammals, some birds, display some kind of altruistic behavior, be it to parents, or to their social group. Still nowadays to be common place for social scientists to display all kinds of reservation that moral sense and cultures are disseminated all over animal kingdom (Jablonka & Lamb, 2005, 2006, 2007, 2008).

In human beings, which are social mammals¹², the same pattern is easily observed. The social team work during hunt, war or environment exploring was paramount for the adaptation of early hominids. This kind of behavior diminished in group fighting, sexual disputes and facilitated food sharing. The efforts to keep group cohesion went from the sense of reciprocity to punishing among partners of different social contracts. In that context we can say that human beings developed cognitive adaptations to process social information³. We are mentally adapted to solve the adaptive problems faced by our ancestors

¹ 300 thousand years ago the human brain reached the same proportions as it has today. That doesn't mean it had the same structure, and its undeniable that in the last 200 thousand years mankind lost some of its primitive facial outline and also became technically more skilled (Cavalli-Sforza & Cavalli-Sforza 1993, p.83; Mithen, 2002; Haviland et al., 2011).

² We can't delegate only to culture the causes of human behavior, we have to take in account the adaptive circumstances in which the brain developed because in some measure culture is a product of it. In this sense evolutionary psychology along with social science are breaking the backbone of ingenuous theoretical models of human behavior such as the theory of rational choice, since empirical and theoretical data have been showing that we are not that rational as the theory propose (Kennair, 2007, 2010)

³ The different social practices within the variety of human cultures point to the fact that human beings have an intrinsic necessity to socialize. A good example of that are the different organized rituals among different human cultures, according to some anthropologists, rituals are not only manner to externalize faith, but beyond that it's a socializing tool that brings the individual to the group. To take part in a sacred dance or in an office celebration man symbolically adheres to the values and practices of that group due to his own propensity to socialize (Barkow, 1989, 2006; Kennair, 2007).

and that our minds were architected by hundreds of thousands of years of environment pressure through natural and sexual selection during our evolutionary journey. (Cosmides, Toby, 1997; Miller, 2000; Kanazawa, 2008).

3 Altruism an adaptive solution.

A biological approach for the matter of altruism is result of the work of Charles Darwin whom in his work *The Descent of Man, and Selection in Relation to Sex* in which Darwin already talked about the evolution of a moral sense, he argued that a proto moral sense is already perceptible in some social insects. And some vertebrate animals.

Many of these animals help each other in many important ways, being the most common to warn each other about possible danger by a set of being able to depend on the senses of all members in the group..... like when a sentinel in a group of apes sends a warning cry about the presence of a predator other animals get deeper involvement with their own group, like wolves who hunt in packs or pelicans that fish in groups or apes that take care of infant from another ape in their own group (Darwin 2002, pg. 124)

In this context humans aren't a singular species it is a deep characteristic of our nature the fact that we not only cooperate with each other but we also build strong social networks, in which we depend (Stanovich & West, 2003; Okasha, 2006; Cohen, 2012; Apicella, Azevedo, Fowler & Christakis, 2013; Moffett, 2013). It is important to consider that social changes, technological development, environmental changes changed the landscape of the species environment. However there are patterns that remained in every culture which suggests that natural selection may have had an important roll in the development of cooperation between individuals. For us to analyze about the adaptive value of cooperation and altruism we should take a good hint is to observe modern hunter gatherers tribes which live in the same way as our ancestors, in every single one of them cooperation and altruism is easily observed what shows the basic valor of such an adaptation. (Apicella, Marlowe, Fowler & Christakis, 2012).

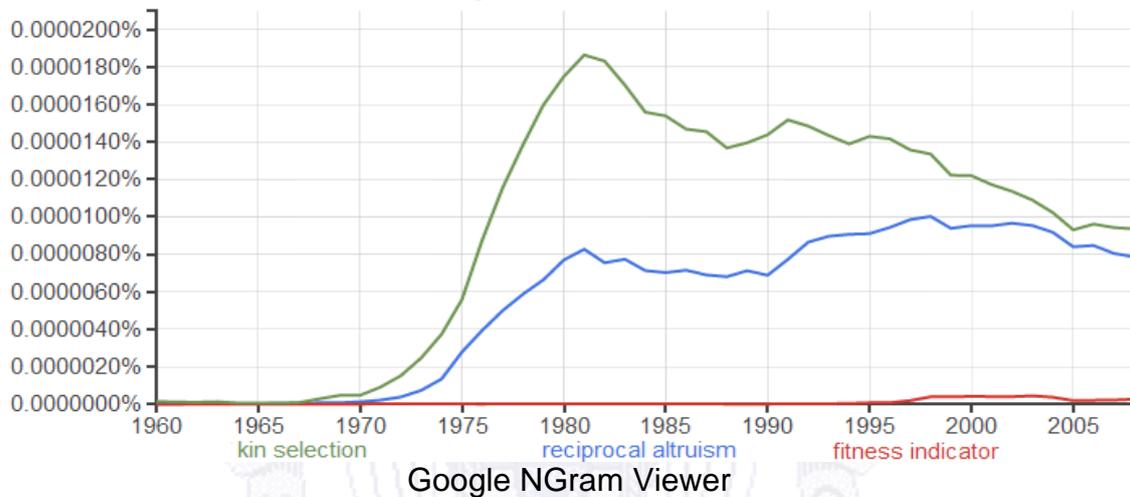
Altruism is a traceable trait in most animals but in most cases this kind of behavior is restricted to family, some species go beyond that, but human beings extend this behavior to most other humans. In which bases did this extension of altruistic behavior to a large number of individuals was built on? To answer that is always good to remember that human societies have complex relations based on the division of labor. Historians and economists argue that such division started a few centuries ago, however archeology and paleontology findings tell another history and it probably goes back to at least 10 thousand years ago and maybe all the way to a 75 thousand years ago when we were already biologically identical to what we are today. About that time it seems that individuals had specialized functions and already divided labor. For example, during hunt one individual might have been a arrow maker, while another was a good spear thrower while yet another was a good strategist, it seems that since man are man we divide labor. Some other hints go even further and suggest

that there was a sexual division of labor as well with different specialization regarded do gender (Ridley, 2000, p.50-61).

To argue about altruism and moral behavior considering the behaviors of other animals enriched our perception of such a phenomena, since we can observe such similarities between our and their moral behavior, especially in regard to the 3 pillars in which altruistic behavior are based in all animal kingdom including human altruistic behavior, and these three pillars are:

1. Kin selection
2. Reciprocal altruism
3. Fitness indicator

Figure 1. Frequency of publications



The graph that we generate with Google Ngram Viewer shows that these three theories have gained greater importance in literature from the late 1970 and the decades following it is observed a movement of consolidation of this vide that there's a constancy as the frequency of publications.

We will analyze these three characteristics of moral sense always resorting to parallels within the rest of the animal kingdom, ranging from social insects to primates and try to understand how this behaviors are the result of neural structure of these animals and this structure subsequently being the result of specie evolution.

3.1 kin selection

The main idea behind this theory is that we have an innate tendency to favor our kin, according to modern biology it happens because we share a larger portion of our genome with them therefore favoring them would be favoring our own characteristics. The theory of kin selection was initially proposed in 1964 by W. D. Hamilton. The term kin selection suggests that Darwinian selection may affect not only the individual level but also family, but In fact what it shows is that the natural selection occurs at the gene level and therefore favoring our family we are favoring the same entities we favor acting selfishly which are our own genes (Wright, 1996, 2010).

This idea of natural selection occurring at the gene level and allowing the development of altruism towards family was made popular by Richard Dawkins classic "*The Selfish gene*" where he masterfully exposed the concept.

According to Dawkins that occurs because in the beginning of life evolution there were only self-replicating molecules (DNA – RNA) which competed for survival. These molecules, as time passed by, developed new methods of survival and replication leading to replicating inside cells and finally living as colonies which we call organisms. In this perspective we are the vehicles for the real "units of selection": the genes. In this view when we improve our chances of survival by any means, including behavior, we are just doing our genes work since they are the ones who will get to the next generation, through our gametes (Dawkins, 2004).

In this way in the gene perspective, helping copies of our genes located in someone else's body, yields the same results as helping these same genes within our own body (Wright & Jones, 2006; Okasha, 2006; Wright, 2010). According to Dawkins genes that are able to help the propagation of their copies in other bodies give us the impression of individual altruism display, but in fact it is a masked genetic display of selfishness. (Dawkins, 2001, p.113).

Therefore helping family, we are helping the individuals with the most probability to have copies of our own genes within their body and in a genetic perspective that's advantage of altruism display towards family. We have to always keep in mind the very important fact that a biological function for any kind of behavior doesn't mean a biological motivation for such behavior, for example: in the same way a person displaying sex drive towards someone of the opposite sex is not motivated by the desire to perpetuate his or her own genes, the simply sex drive is a motivation in itself, likewise when someone experiments the feeling of compassion and acts altruistically towards a family member we are not motivated by the genetic gain of such act we are just taken by the sense of compassion which propels us to act in such manner.

We believe that there is no necessity to argue that altruism towards kin is spread through out of most part of animal kingdom, it is common knowledge that most animals specially vertebrates display selection towards kin specially towards offspring. But it's worth to mention social insects in which kin selection can explain self-sacrifice in benefit of the hive or the anthill which are genetically very similar such animals display mutual help in a very harsh hierarchy⁴.

In this context we can perceive that our most common display of altruism, selection towards kin, has a deep root in animal behavior, since the simpler

⁴ Evolutionary process works on populations throughout long periods of time generating not only physical adaptation but psychological as well. In recent years has been a development in the understanding of the relation between the evolutionary process and psychological process in such a manner that many researches have been done to understand the control of emotions, thoughts and actions. These studies offer important insights upon the logical strategies that operate on psychological processing. But evolutionary psychology goes beyond showing the close relation between observable human behavior and its evolutionary context, it offers new ways to understand modern human behavior. In this context we can affirm that a evolutionary root offers a better base for theoretical assumptions (Park, Schaller, Faulkner, 2003).

form of animals such as the invertebrates exemplified by Ridley to our most related animals the chimpanzees whom like us display selection towards kin parental (Martinez, 2003; Costa, 2012).

But that is not the only kind of altruism displayed in human societies, kin selection can account for some parts of the altruism displayed by humans, but is far from explaining all kinds of altruism observed in our specie. In human societies social exchange is as old as humanity itself, social exchange provides individual access to protection, livelihood what enables individuals to live longer and healthier lives. Social exchange is something so old and important that in the evolutionary beginning of our specie adaptive pressure developed through natural selection neural and cognitive mechanisms that facilitated social exchange. In this manner theory says that human being have specialized cognitive mechanisms for cheating detection in social exchange makings us inclined to search trustworthy and cooperative partners instead of cheaters for social exchanges (Stanovich & West, 2003; Barbey, Krueger & Grafman, 2009; Pääskeläinen, Ahveninen, Andermann, Belliveau, Raij & Sams, 2011). This type of relations gave basis to the development of reciprocal altruism and to indication of suitability as we will argue next.

3.2 Reciprocal altruism

At the end of the sixties biologist Robert Trivers pointed to the fact that animals could benefit themselves being cooperative with each other as far as they interacted long enough to establish the necessary trust. Sharing their resources with those who do the same, “fulfilling their contract”, they could benefit much more in the long run than simply cheating and benefiting immediately, Trivers argued that repetitive interaction worked as a strengthening for the behavior that he named reciprocal altruism (Trivers, 1971, 1972).

This idea wasn't new since in game theory an experiment called prisoner's dilemma demonstrated that repetitive interaction generated more altruistic behavior. In this experiment accomplices in crime are jailed in different cells, the prosecutor proposes a deal for each of them separately, which consisting of: if a prisoner denounces his partner and his partner doesn't denounces him the prisoner is freed and his partner gets a ten year sentence. If both denounce each other both take a five year sentence. The accomplices can't communicate to each other, and they don't know what their accomplice is going to do (Trivers & Willard, 1973).

In the classical prisoner's dilemma problem the best approach, determined by innumerous interactions between mathematical models, is to cover your accomplice and not denounce him, of course as long as the problem is faced a few times, therefore Trivers realized that the same would happen in species where individuals repeatedly interacted with members of the same group.

Trivers suggested that emotions related to moral sense could evolve when individuals of the same group interacted repeatedly enough and could reward present cooperation with future cooperation, and present deceive with future deceive. Robert Axelrod and William Hamilton observed this theory in a computer model tournament. A simple strategy

which consisted in cooperating in the first round and then repeating your opponent's last move defeated another 62 strategies. Cooperation can evolve as long as parts interact repeatedly enough and each part remembers the others last behavior repaying it properly (Pinker, 2004, p.529).

This dynamic, showed in mathematical models, to win the prisoners dilemma is also observed in many social animals besides human beings.

With the exception of human beings the animals that show a very developed type of cooperation based on reciprocal altruism are the apes, specially chimpanzees and bonobos. Many primatologists have been observing these animals in their natural habitat as well as in captivity for the last forty five years and its well established that they display many altruistic behaviors based in reciprocity. From low hierarchy males forming coalitions to overthrow alpha males, to females grouping to protect their infants and each other from male's beatings (Goodall 1988, De Waal 2004, Sapolsky 2002).

A strong and evident example is described by the primatologist Frans De Waal. Trawling through decades of research and observation, he describes all sorts of behavior in bonobos, chimpanzees, and monkeys, he finds altruism in bucketfuls among the primates. De Waal argues coherently that this behavior has evolved over millennia within social groups of mammals for the better survival of the group – and that human morality has similarly evolved (De Waal, 2013).

In his book "Our Inner Ape" he tells us about his observation of a group of chimps in the Arhen zoo in Amsterdam where two chimps named Nikkie and Yeroen formed a coalition to dethrone the alpha male of their group named Luit, since none of them were able to take on Luit alone, after forming their coalition the chimps killed Luit in a bloody battle during one night when there were no zoo keepers and according to De Waal: "then they helped each other up to keep the group power, dividing the gain, power and sexual privileges" (De Waal, 2004, p. 212). The coalition between chimps in a group is an ordinary thing to be observed by any primatologist.

But reciprocal altruism isn't observed only in primates, another well documented example of such behavior comes from hematophagous bats⁵ as described by the biologist Gerald Wilkinsom. In 1983 Gerald was studying bats in Costa Rica and realized that reciprocal altruism was the rule and not the exception in their behavior. These bats, feed on the blood that flows from wounds caused by them in big animals such as horses or cows, it's a matter of life or death for these bats since if they stay 60 or more hours without blood ingesting they have

⁵ Among all bats the hematophagous seem to show the most evident social behavior and the biggest frontal cortex as well. We suppose here that do be able to have a complete social live animals need big brains. In this context human beings seem to live in societies where the average number of members is 150, of course societies are much bigger than that but this number refers to the amount of individuals which we develop more intimate relations. For reciprocity to develop there must be trust during our remote past when we live in small tribes reciprocity seemed to be effective (Ridley, 2000, 2004).

serious chance of dying due to hunger. Mature and experienced bats rarely stay one night in ten without consuming any blood while the young and inexperienced bats stay one out of every three nights without access to any blood.

Wilkinson realized that drank more blood than they needed regurgitated the excess of blood for their fellow bats, these animals tend to live in hollow trees and seem to have excellent memory, since they only regurgitate their excess of blood to the ones who do the same, therefore if a bat never regurgitated his blood to another bat it will have no chance of receiving this benefit from other bats in his group, Wilkinson stresses that most of males in a bat group aren't genetically related and that the name of the game is reciprocity and not kin selection (Wilkinson, 1984, 1985).

Reciprocal altruism is not observed only between organism of the same specie but also among partners of different species! In the field of ecology partnership of individuals of different species in which both benefit (reciprocal altruism) are called mutualism or cooperation depending on the level of dependency within the relation, biologists already demonstrated this relation among termites and their digestive track protozoa, between human beings and their digestive system bacteria, again in crabs and sea anemone, in brazil there are well documented cooperative⁶ relations between alligators and birds, who eat the parasites in the alligators mouth, making a favor for them as they gain a free meal⁷, and in many other species showing that reciprocal altruism is well established throughout all the animal kingdom.

In this context most part of the altruism observed within animal is based on the effectiveness of reciprocity as a manner of attaining individual objectives, this kind of relations are much commoner among social animals such as bats, wolves, primates and some birds, the benefits gathered through this form of altruism are in the realm of survival and reproduction. Here, again, is important to stress the fact that an adaptive reason for such a behavior doesn't mean an adaptive intention, the love of a mother for her child isn't felt by her as a biological effort that helps the propagation of her on genes, therefore feelings that propels us to certain behavior considered altruistic are not consciously self-interested they can be felt as compassion or love or benevolence, doesn't matter the form of altruism involved, be it kin selection or reciprocal altruism or any other kind.

So it happens in human beings, altruism and reciprocity are made possible by man's social intelligence grounded in his neural structure. The logic is that when an individual infringes his reciprocal altruism pact he reduces his chances of surviving and or reproducing, therefore he is a smaller influence within the species genetic pool (Mealey, 1985; Faux & Miller, 1984; Zahavi, 1990; Smith &

⁶ It seems that all these behaviors were molded by natural selection who defined that social live can not only be beneficial but vital (Ridley, 2000, p.72-9).

⁷ The females of social insects helping their sisters to procreate transmit more copy of their own genes to the next generation than if they tried to reproduce themselves. From the genetic point of view the ant's altruism is undoubtedly selfish, in this sense, the mutual altruism displayed by ants in fact is an epiphenomena of their genetic strategy to expand the number of copies of their genes transmitted to the next generation through the queen (Ridley 2000, pg. 27).

Winterhalder, 1992; Wright, 1997;). On the other hand if all individuals were selfish in absence of altruism, there wouldn't be cooperation of anyone, what would make social life impracticable⁸. Our species according to the definition proposed by political scientist Axelrod developed at least three ways to identify and neutralize profiteers: 1) recurrent interactions, 2) distinguishing between known and not known individuals, 3) remembering the level of cooperation displayed by known individuals. In this logic individuals who cooperate increase the chance of being target for altruistic behavior. Our hominids ancestors developed these three adaptations, since evolution bequeathed to man sophisticated face recognition and memory for social interactions, what enables our species to be sensible to altruistic behavior and enables us to have a social accounting where we rank other individuals according to their altruistic behavior (Axelrod, 1987; Axelrod & Hammond, 2003).

But human altruism surpasses kin selection and reciprocal altruism we also act kindly to other human beings who are not genetically related and will never be able to pay our kindness back, and again we can easily find similar behavior on other species of the animal kingdom.

3.3 Fitness indicator theory

"Fitness indicators are signals of the characteristics and quality of an individual that can be perceived by another" (Miller, 2012, p.24). Throughout animal kingdom fitness indicators are used to discourage predators, rivals, to attract sexual partners, to forge alliances and so on. Peacocks indicate their fitness by keeping their tail iridescent, the nightingales learn how to sing, the elks grow their immense and heavy horns, babblers care for no genetically related nestlings, bowerbirds build incredible nests and human beings perform acts of charity and spend lots of money on luxury items (Zahavi, 1997; Saad & Gill; 2000; Saad & Vongas, 2009; Miller 2012).

Here again we find a general principle in biology which is distributed all over the animal kingdom and gives evolutionary drive for the development of altruism as a solution an adaptive problem now being indication of suitability. Fitness indication through altruistic behavior can very well be paid as social status and sexual enterprise in a given social group, be it in human society or throughout the animal kingdom.

Among humans and other primates we can always see inside groups of any of those species some kind of hierarchy developed, specially in the division of labor between males and females. We can stress that this hierarchical stratification is more egalitarian between humans in comparison with other primates, even more if we compare to chimpanzees which are our closest related primates. In some measure all apes show some sort of egalitarian labor division nevertheless but the weak and less skilled members of a group usually copulate less with a lesser variety of females in relation to stronger and skillful males. In human beings the political behavior resembles that in primate groups, being strong don't count much but being socially skilled is still important in climbing the social ladder (Goodall, 1986; Wright, 1997; Ridley, 2000; Waal,

⁸ In this way we can affirm that selfishness as a social behavior is unsustainable among social species (Tooby & Cosmides, 1996).

2000, 2001; Fuentes, 2006). In this context of more or less defined hierarchy altruistic behavior can be very profitable not only in a reciprocal way but also in a fitness display manner in showing for the group the abilities that an individual has and may be of group interest, which would lead to more social status, sex, resources and other conceivable social benefits for such individual.

Israeli biologist Amótz Zahavi, during his time studying desert babblers in his homeland realized that these birds showed a behavior which he called sentinel. The alpha male of a group would put himself in evidence when a predator would show up attracting the attention of the predator for himself, whenever another male of inferior position would try to do the same, the alpha male would deter him through the use of violence. The same happened whenever another male besides the alpha would feed non related nestlings apparently altruistic behavior is a disputed labor among males, alpha males can't have competition with such behavior (Zahavi, 1990, 1999).

In this bird species, put yourself in peril or spend time hunting for feeding non-related nestlings signals genetic superiority in relation to the other males who didn't have the necessary ability to put themselves in peril and be able to trick their predator or being able to properly group nestlings. This way males that surpassed his contenders in these activities would have their investment (time, energy and putting himself in danger) well paid having more access to female partners, more social status, and more resources. Therefore these birds are competing to show altruistic behavior, in this manner altruism can't be understood as kin selection since these males are feeding non related infants neither can be characterized as reciprocal altruism cause they compete to "serve" and are not worried about being repaid by group members as did Wilkinson's bats, therefore a new theory must be the logical explanation for such behavior, and that theory is fitness indication, in which animals display genetic superiority and behavioral tendencies through behavior and body parts development. In his 1999 book Zahavi demonstrated how this principle applies throughout animal kingdom in his own words:

This principle revealed to us an endless array of new ways to understand phenomenas such as the extreme expenditures often involved in sexual advertisement, the evolutionary enigma of animal altruism, and the workings of collaborative systems in the animal kingdom, which could not easily be explained in terms of straightforward, utilitarian natural selection (Zahavi, 1999).

In human beings the "not so hidden benefits" of charity are even more evident. Psychologist David Buss demonstrated that altruistic behavior in the form of kindness towards sexual partners is one of the main factors of female mating choice throughout human cultures all over the globe. In this sense display of kindness is a technique to display commitment towards sexual partner, parental care towards infant, cause it signals romantic interest and not only sexual interest (Buss, 1994, p. 103).

It's not new to anyone that during sexual courtship man emphasizes their generous behavior, they buy presents and they spend much of their time money and energy with attitudes that please their partners (take them out for dinner, buy flowers, take them for trips) regardless of the material benefits of such behavior men spends lots of their resources acting in such a manner and the reason for it is because of the sexual benefits that it entangles.

Researches such as the presented by as the ones conducted by William Tooke and Lori Camire shows that during courtship men act more polite than they normally do, they display more consideration for others than they usually do, appear more vulnerable than they really are, these same researchers identified 109 different tactics utilized by men to attract partners in bars all over the United States, besides that they observed the efficiency of 100 different courtship tactics in American universities. In both studies they found out that show good manners, offer help, being kind and care for others are among the most pleasing forms of courtship (Tooke & Camire, 1991; Buss, 1993).

Another way in which the investment in altruistic behavior as a fitness indicator pays off is in the gain of social status (Mealey, 1985; Faux & Miller, 1984; Smith & Winterhalder, 1992), in all known societies past and present we find individuals whose altruistic behavior became the defining mark of their personality and in this way acquired immense social status in their social group (Zahavi, 1995; Gintis, 2000; Anderson, John, Keltner & Kring, 2001; Caravita, Di Blasio & Salmivalli, 2009). We must not forget that within human beings survivability and reproductive success are intimate related to social status, therefore the big advantages of investing in altruistic behavior towards any member of a certain social group (Miller, 2000; Harris, 2002).

Having reviewed the three different forms of altruistic behavior spread throughout the animal kingdom, and how common they are and that these three same forms of altruistic behavior are easily observed within human beings and the fact that the evolutionary pressure for the development of these types of altruism are easily observed in the three of them, strongly indicates the evolutionary root of the moral behavior and its role in the adaptation of our specie as a social one.

It's important to stress the fact that every adaptation must be comprehended in its evolutionary context and that its optimal efficiency is related to the period when it developed and the environmental conditions of that period and, in the case of fitness indication, the altruistic behavior still is a valuable tool due to the fact that despite all cultural, environmental and technological changes we still live as a society where the social status is as important today as it was during the Pleistocene period (Buss, 1989, 2008) .

4. Conclusion

Through this article argumentation we tried to understand the altruism phenomena through a biological evolutionary perspective and therefore show the necessity of a closer approach of the field of psychology to biology disciplines such as behavioral genetics, evolutionary psychology among others for it to grasp the totality, or at least a bigger part, of human behavior. Following

evolutionary psychologists, behavioral geneticists, cognitive neuroscientists we argue that any science that search for the understanding of human behavior cannot distance themselves from the biological factors that dictates the behavior of every other animal in our kingdom, and that isn't productive to ignore the physiological factors that are intimate related to our behavior and last but not least the evolutionary process responsible for the development of our neural apparatus and its behavioral abilities. In that scope our moral sense can be much better understood in a broader context in which account the social variations of such phenomena but don't forget its evolutionary roots shared with other animals.

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