

UNDERSTANDING THE BIOLOGICAL BASIS OF THE LANGUAGE OF LOVE

Presented at
Symposium: "VI. Mersin Philosophy Days" - **LOVE**
Mersin University
Faculty of Philosophy
Turkey
13-15 October 2000

By:

Sofronios E. Papoutsoglou
Professor

Agricultural University of Athens
Faculty of Animal Production
Department of Applied Hydrobiology
Tel. and fax: +03 01 5294401, e-mail: sof@aua.gr
Iera Odos 75
118 55 Votanikos
Athens
Greece

Introduction

The existence of love and its language in humans and animals

General

Definitions and meanings

The existence of love

The biological sequence of love

Mating (reproduction)

The stage of attraction (infatuation)

The stage of orgasm and after lovemaking

Friendship (social behaviour)

Love (altruism)

The language of Love

Mating (reproduction)

Friendship (social behaviour)

Love (altruism)

Epilogue

Understanding the biological basis of the language of LOVE

Sofronios E. Papoutsoglou

Introduction

Who is able to say how many people have already said, “I love” (not necessarily you), and how many are saying it, this very moment and, most importantly, how many really mean it, and when they really mean it, what exactly do they mean?

It is common sense that love is an issue about which everybody knows something and nobody knows everything. However, love is something that can unify not only people but ideas and objects also. It is something that can be expressed by humans regardless of their sex, age, profession, social position, physical condition, financial condition and, of course, regardless of their cultural level.

It is well known also, that love and, everything that could be connected with it, has already been and still is and, probably is going to be an issue of great interest for many people if not of everybody. The number of philosophers who have been and are still analysing the meaning of love could be figured out to many hundreds, while the number of the poets and writers who have been inspired from it, could be estimated to hundreds of thousands and, of course, there are billions of songs which are dealing with love.

It is an issue with an endless number of definitions. However, none of them has prevailed as to be recognised by everybody.

If somebody asks why people have been dealing with love to that extent, it seems to me that the answer is rather simple. It is because they feel like doing it. In other words, they do feel the need to express a kind of internal impulse by an unknown number of ways.

It could be said that it is a natural reaction or phenomenon that addresses from people to themselves, to other people, to animals, to several objects, to ideas (religious, political, social etc.), to science and to art.

Seriously considering the number of the combinations that arises from the number of times that each individual uses the word “love” and the number of all those that could be loved from him or her, it is obvious that love is widespread among humans. Since, it is well known that everything that could be done by living organisms has a biological basis, it must be stated that the challenge of love is characterised by a biological basis, also.

So, since love is a biological phenomenon, it is worth pointing out that its expression is extremely closely related with the strict mechanisms and regulations of Physiology, Biochemistry and Genetics (Heredity). In other words, it is closely related to that procedures (most of them are probably still unknown) which characterise the human being.

Being aware of and, probably in agreement with that stated by Αριστοτέλης (Aristotelis-Aristotle) “...επει ούτε περίεργον ουδέν ούτε μάτην η φύσις ποιεί...” (...nothing that nature does is odd or in vain...) and, in association with the theory of evolution of animal species, it would not be worthless trying to trace the existence of

love within all living creatures and especially in animals. I personally believe that it is worth doing it in order to, deeply and better, understand the role of this natural phenomenon within humans and animals, but also to understand its importance for the Life on earth.

Undoubtedly, this understanding could be achieved more successfully not only by proving the biologically based existence of love, besides humans, and within animals, but also by detecting the “language” which humans and animals are using to express it.

The existence of love and its language in humans and animals

General

Tracing the existence and the language of love, we should, from the very beginning, be sure, what exactly we are up to. In other words, we have, firstly, to be certain what do we mean by using this word. It has to be mentioned that this attempt is extremely hard and difficult, mainly because of two reasons: First, there are already stated many kinds (types) of love within humans and animals. Second, counting the forms by which love is expressed mainly by humans, leads to a continuous adding of an endless list.

So, if we are still willing to proceed to this understanding, we have to accept a definition for love and to determine the forms of its language.

Definitions and meanings

Defining love looks like an adventure that has to lead to the adaptation of a term expressing the meaning and concept of all the terms that have been already used. This attempt is exceptionally unapproachable because it needs semasiological understanding of the words already used by humans, since they were able to write and to speak.

The first written statements for love are found in Όμηρος (Omios-Homer) texts, Ιλιάδα (Iliada-Iliad) and Οδύσσεια (Odissia-Odyssey). Nevertheless, the term **Αγάπη** (Agapi-love) is not found in these texts. Instead, the verb **Αγαπάω** (Agapao-I love) is present and it means, “Είμαι φιλικός (Ime filikos-I am friendly)” to somebody, although the main reason of Trojan War was the well-known love story of Πάρης (Paris) and Ελένη (Eleni-Helen). In the same texts, the word **Έρωσ** (Eros) appears. Its meaning is related to both pleasure (directly) and reproduction (indirectly), as well as to friendliness.

Obviously, the tremendous importance of Έρωσ (Eros), is related with the Natural Need of reproduction of the species (life continuation). From the biological point of view, the achievement of this Need is strongly associated with the most exceptional way of stimulation of the nervous system of animal species. This offers to them the greatest of the pleasures in the most limited time. We are talking, apparently, for the wisest foresight of nature for the achievement of the perpetuity of animal species. Something similar happens with the satisfaction of nutritional needs through the pleasure of taste and by which the animals’ life can continue.

Because of the above mentioned, Έρωσ (Eros) has been registered by the ancient Greek philosophers as the most primordial God. Ησίδοσ (Isiodos) in his “Θεογονία” (Theogonia-Creation of Gods) presents the God Έρωσ (Eros) as the son of the first, ever mentioned, Elements of the planet: Χάος (Chaos-representing the

continuous dynamic of being) and Γη (Yi-Earth-representing the place that everything can be placed). So, according to Ησίοδος (Isiodos), Έρωσ (Eros), the most beautiful of the immortal (Gods), does not only represents the outcome of power and beauty but also he is the third, after Χάος (Chaos) and Γη (Yi-Earth), cosmogonic Element. He is also the first Element that the origin of all living species, as well as, the origin of the environment they have to live, have been based on. Because of him, all immortal and mortal Elements of Life have been created, as Αριστοφάνης (Aristophanis) says in his Όρνιθες (Ornithes) “...πρότερον δ’ ουκ ην γένος αθανάτων πριν έρωσ ξενέμειξεν άπαντα. Ξημειγνομένων δ’ ετέρων ετέροις γένετ’ Ουρανός, Ωκεανός τε και Γη πάντων τε θεών μακάρων γένος άφθιτον...” (...nothing was before Έρωσ-Eros put together everything. The result of his involvement was the creation of Ουρανός-Ouranos-Sky, Ωκεανός-Okeanos-Ocean and Γη-Yi-Earth, as well as, all the immortal and imperishable Gods...). This statement has been amplified by Εμπεδοκλής (Empedoklis), who tries in his poems “Περί φύσεως” (Peri fiseos-About nature) and “Καθαρισμός” (Katharmous-Expiations) to give a more philosophical dimension of love. He says that it is Έρωσ (Eros) the reason for a definite unification of the four most important Elements of Κόσμος (Kosmos): Γη (Yi-Earth), Νερό (Nero-Water), Αέρας (Aeras-Air), Φωτιά (Fotia-Fire).

It should also be mentioned that Ησίοδος (Isiodos) calls Έρωσ (Eros) as the λυσιμελή (lisimeli) power (he who can loose the parts of a body), as well as, he who can dominate the soul of all Gods and humans. Also, the one who almost always can make Gods and humans illogical, depriving them of the ability of thinking logically.

Σωκράτης (Sokratis-Socrates) expressing his ideas about life, act, will and knowledge, which, according to him, should be united, believes that the only way to achieve it is by the power of Έρωσ (Eros).

This power has been more clearly addressed by Πλάτων (Platon-Plato). According to him, Έρωσ (Eros) is a strong inclination of the soul for Commodity or for Eternal Beauty. When Έρωσ (Eros) regards (rather objectively than subjectively) a particularly beautiful person, then it is a kind of passion for the achievement of immortality through the descendants. Becoming, in other words, the most suitable carrier to eternity. From the clear philosophical point of view, Πλάτων (Platon-Plato) believes that Έρωσ (Eros) is leading to the vision of the major Master of everything. In his “Συμπόσιο” (Symbosio-Symposium), he states that Έρωσ (Eros) is the most unbeatable power, which can turn mortal to immortal, or in other words to turn mortal to God.

Later, Αριστοτέλης (Aristotelis-Aristotle) supports unreservedly the opinion that love is **Φιλία** (filia-friendship). It is extremely important to mention that Αριστοτέλης (Aristotelis-Aristotle) in his “Ηθικά Νικομάχεια” (Ithika Nikomachia-Moral Nicomachia) and “Ρητορική” (Ritoriki-Elocution) strongly emphasises that friendship is the only power that can establish the **Sociality** and the **Solidarity** not only among individuals, but also mainly among human communities. It is believed that this dimension of sociality probably is the most important step in the course of the efforts made, even today, in order to meet the real importance of love from both the philosophical and the practical-biological point of view. This is due to the fact that without underestimating the importance of Έρωσ (Eros), the differences between Έρωσ (Eros) and Φιλία (filia-friendship) must be distinguished. In other words, the need of the existence of both, in humans’ life, is obvious, but most obvious, is the fact that Φιλία (filia-friendship) lasts much more than Έρωσ (Eros), usually.

It should also be mentioned that the fundamental significance of the Chinese ideogram called “yen” is strongly related to love. Expressing its meaning, Confucius

suggested that everybody should love everybody with joy from the bottom of his or her soul.

An entire “**respect**” to Life is the dimension that is given to love by Hinduism. Similarly, one of the ten principles of Buddhism concerns the idea of the “**general love**”.

More emotional and directly related to God is the meaning of love that has been given by Christianity, in which however, an essential differentiation between Ἔρως (Eros) and love, is easily found. Ἐρωτας (Eros) characterises humans, while love, the relationship between humans and God and vice-versa. In this case, the dimension of love should be considered as of divine origin, that clearly is offered to all creatures. This concept of love strongly involves the sense of sociality with main features **Altruism** and **Selflessness**, which lead to a peaceful way of living. The altruistic dimension of love, which is characterised by a continuous effort of humans to overcome their weaknesses is outlined by Apostle Paul in his first Letter to the Corinthians.

Also, a broad meaning of love, and especially that of **God origin**, characterises the principles of Islamism.

A more religious meaning of love is given later by Augustine. He tries to prove the divine concept of love, based on humans’ traits and mainly on the power of their mind, their knowledge and the power of Ἐρως (Eros), announcing in advance his wish for the establishment of Trinity.

Generally, during Middle Age, nothing really new, in terms of definition of love has been presented. Whatever has been mentioned is strongly influenced by former theories and by the scientific and social level existing that period in the West World. However, that which could be called new, during this period, is the fact that love, fully addressed by God, could be approached by **Mysticism** and **Vision**. The establishment of this opinion, already included in several religious and philosophical theories, has been expressed, mainly by Francis of Assisi. He declared the Secret Vision of love. Also, by Bernard of Clairveau and Peter Avelard who both spoke about “Pure love to God” without expecting reward. Later, Cartesious defines love as a touching of the soul, caused by mental functions which connect love with the most suitable “object” to be loved. Thus, Cartesious is giving to love a quite clear biological meaning and dimension.

However, the most intense biological dimension to love has been given by Freud, who connects it directly with the **sexual instinct**.

The present philosophical approach of the meaning of love includes the ancient Greek, all the religious-related, the unitary, the reconciliatory and the mystic aspects of love, as well as, the dimension of sympathy and sharing others’ problems and difficulties.

It is rather clear that analysis, study and definition of love were caused by the strong willing of man, not only to find the best way to express love, but also to identify the reasons for its existence. In other words, it is clear that humans have been trying to understand better themselves in terms of virtue, pleasures, desires, as well as, to understand better their relation with God.

Ἐρως (Eros) (physical or divine), friendship, desire, sympathy, passion, sociality, solidarity and altruism are the most dominant definitions and meanings for love. They cover its significance both broadly (mentally, philosophically and religiously) and specifically in terms of satisfying rather temporary human desires.

The existence of love

It is apparent that most of the terms used to define love have two common points. One of them concerns the instinctive tendency for reproduction (desire, passion and mating). The other (friendship, sociality) concerns the intrinsic strong desire for care and self-preservation either for the same individual or for others (parents, brothers, sisters, etc.) or for all the people or even for the natural or artificial environment (animals, plants, objects) or for God (superior power) or for all of them. Within the frame of this concept it is worth emphasising the importance of a need, which characterises humans, to live in peace with themselves. Also, their desire to communicate with God especially when they have been convinced (and wish) that their life will continue after their death. The first of the above mentioned points might have a possessive dimension, the second has not. Nevertheless, both (especially the first) are of instinctive origin which, however, takes several forms depending on individuals' character, age, sex and the existing religious, financial and social circumstances.

The above mentioned strong differentiation of the expression of instinctive dimension of love is related to the fact that each person has the ability to think in his or hers own way. It is uncertain whether this could be applied to the animals, especially when they are living in groups.

The lack of the ability of logically responding in animals is almost entirely associated with the presence of their instinctive reaction. Nevertheless, instinct might be implicated in human reaction as well, especially when they have limited time to think, as for example when they have to encounter a sudden danger.

The biological sequence of love

Trying to achieve a better approach and study of the existence and expression of the instincts of reproduction and sociality of animals (including mankind), we should take under serious consideration the fact that instincts are nothing more than the expression of specific genes. Also, we must admit that the expression of instinct genes, within animal kingdom, has a common origin and is modified according to the systematic level of each species. So, it is obvious that we are investigating an evolutionary progress, regarding instinct gene expression, from the lowest to the highest species. In this case, this progress concerns the perpetuation of species and the social behaviour of individuals in their communities.

It is my believe that this progress represents a sequence of three extremely important, for animal life, steps, which determine not only the origin and continuation of life, but also its quality. Especially, with reference to human couples (man and woman). In this case, this sequence starts from the step of **Mating** (reproduction), goes through the step of **Friendship** (social behaviour) and ends with the step of **Love** (altruism).

However, in mankind communities, it could be possible, this sequence to start from the second step (friendship) from which mating (reproduction) desire may be satisfied or not. Also, it should be emphasised that the last step (altruism) is not easily present.

Tracing the expressions of the genes responsible for mating, friendship and Love, among the systematically different animal species, according to the information available, we could state that the common biological data between mankind and other animal species is dramatically decreased going from mating to Love. In other words,

the similarities of the expression of these common origin genes in all animal species, including human, should be plenty in the case of the first step of this evolutionary sequence, that is mating. These similarities should be much less in the case of friendship, and even lesser in the case of Love, if present at all. Probably, this fact explains the difference between mankind and animals, regarding to their mental abilities, the presence of which offers to human to live the way he or she wants.

Biological data that we have to deal with are specific chemical substances and biochemical mechanisms that are involved in those three steps.

Mating (reproduction)

The common points of sexual behaviour of mankind and animals are extremely numerous. These points are associated mostly with the physiology of this procedure and especially with the function of nervous, hormonal and enzymatic systems. These functions are referring to the existence and involvement, in human and animals, of molecules of almost identical chemical composition, as well as to almost identical regulation of their activity.

Substances that have been detected in fish and human, which represent the lowest and the highest levels of living vertebrates, and that are involved before (infatuation-attraction), during (orgasm) and after lovemaking, mainly belong to hormones or hormone-like (neurohormones-neurochemicals) groups.

The stage of attraction (infatuation)

Neurochemicals of adrenaline (epinephrine) group express the result of infatuation, which is transmitted to almost all nerve cells by phenylethylamine. Also, amphetamines or similar to them molecules, like catecholamines (dopamine and noradrenaline or norepinephrine) are involved. They cause the release of adrenaline, which is closely related to the release of cortisol.

What happens to humans, and probably to other animals, when these chemicals are in action, I believe it is well known. We feel like seeing stars. We have the sense that we are flying between them. The presence of our heart becomes extremely obvious and, at the same time, we do believe that life is beautiful. We are full of euphoric energy, which could be only satisfied by making love. We feel bewitched and happy. At this stage, especially when we are talking about first site love, respect, honesty and loyalty are not necessarily needed. Instead, sense of humor, causing impulsive laughter, and intelligence are most probably required. This is the stage of charm or the stage of “chemistry”, as the present days youth use to call it and, of course, it is the stage of stress. Unfortunately, or maybe fortunately, this stage usually does not last that long. According to the data available, it is a matter of few months (weeks?), period which could not be extended to more than three to seven years.

In fish, the presence of neurohormones, like catecholamines (adrenaline, noradrenaline and dopamine) and cortisol, has been closely related to the maintenance of their homeostasis, especially to their genital maturation.

The stage of orgasm and after lovemaking

The stage of infatuation comes to its normally intended and anxiously expected aim. This is orgasm. The substances that are involved belong to a group known as the group of oxytocin-vasopressin. However, some of them (oxytocin) are

involved just before and after lovemaking, as well. Emotional and physical factors, like the tone of the voice and fantasy, usually cause to human the production and the release of oxytocin.

It should also be emphasised that vasopressine has been called the substance related to monogamy and that very limited proportion (about 3%) of mammals are naturally monogamous. Humans are not included.

In fish, these substances have been detected to be involved in mechanisms that control, through the nerve cells, among others, their reproduction procedure.

It is worth noting that vasopressin may be related to the male jealous syndrome, as experiments, on voles, have shown.

Similarities of the same importance are found in biochemical and neurohormonal pathways that are involved for the production of the genetic material. In both fish and human this mechanisms start from the action of external factors, which are received by the nervous system and especially by the mechanisms of smell, taste and vision. These, cause stimulation of internal factors which are mostly related to age and sex. The final result of these procedures is related to the stimulation of cells of hypothalamus and transmitted to the hypophysis, which causes the production of gonadotropins, steroids, prostaglandins etc.

It is easy, from the above mentioned, to realise that the similarities concerning molecules and biochemical pathways involved, between mankind and higher than fish vertebrates (terrestrial and aquatic mammals), are not only more numerous, but also more intense.

Friendship (social behaviour)

Most of the substances, as well as the directly or indirectly involved biochemical systems concerning the social behaviour (friendship) of animals, are still unknown. If there are some, they have to be associated with animal species that usually live in groups. As an example, a special type of molecules could be mentioned. They are known as pheromones and more specifically as alarm pheromones and pheromones of social behaviour that could be found even at the level of fish.

In humans, and particularly in the case of a happy couple, specific substances that are acting like opiates (endorphins), have been linked with warmth, dependability, special intimacy, care and serenity. It should be mentioned that human couples, being married for a long time, are characterised by a certain level of endorphines, which is decreased when they are apart. This reduction causes them to yearn for each other.

In fish, endorphines have been found in several parts of their body, including brain and gonads. It should be assumed that they are implicated in fish reproduction, and according to some indications, they are related to fish stress release.

That all friendship means, and especially the creation of a calm, peaceful and intended dependability living, in relation to the wish of shared life experiences, could be attributed to our need for loving. On the contrary, catecholamines are linked, more or less, with aggressiveness and possessiveness.

Special attention should be paid to a substance called serotonin. According to the results of several studies, serotonin has been closely related to the feeling of happiness in humans. In some fish species, serotonin has been shown to be involved

in mechanisms of suppression of aggressiveness. In other words, serotonin makes these fish more “civilised”.

Love (Altruism)

To my knowledge, substances directly related to the expression of altruistic behaviour in animals and even in humans, have not yet been reported. However, I assume that they must belong to the group of those of specific hormonal or/and neurotransmitting action. Probably, most of them are of similar chemical composition with those involved in friendship behaviour. It could also be possible that friendship substances are involved in altruistic behaviour, as well, in combination with some others. Regarding the biochemical pathways involved in altruism, we should be sure that they include mostly functions of the nervous, endocrine and enzymatic systems, influenced by the personality, circumstances and the environmental conditions. However, it should be emphasised that the genetic origin, by means of the expression of specific genes, of altruism, within members of the same family and mankind (?) communities, should be taken for granted, according to the Hamilton’s rule.

The language of love

Mating (reproduction)

The language that man uses to express his or hers sexual intention is different among almost all individuals. However, it could be mentioned that there are some rules, which can unify their behaviour. These rules are related to any signal that could be transmitted and received. This fact emphasises the involvement of the nervous system by means of the sense of vision (his or hers looks, body language, laughing, smiling etc.), hearing (speaking, music), smell (natural or artificial scent), touching (all the parts of the body are involved) and taste.

More or less the same situation exists within animal kingdom and especially regarding vertebrates. The language used by male fish of many species during their reproductive period involves courtship, sound production, production of electricity, production of mucus substances, increase of the diameters of their eyes, elongation of their fins, modification of their jaws, colour changes and increase of the width of their epidermis. Females are characterised by increasing the ability of receiving acoustic, chemical and optical stimuli, increase of the width of their epidermis, modification of their fins and body size, courtship behaviour, building of a nest and, most important, choice of a partner.

On the other hand, how can we close our eyes and ears and not appreciate, to full extent, the magnificent dancing courtship behaviour of some bird species, their superb colours and of course their extraordinary call when in quest of a match?

Similar and more close to man behaviour examples could be found concerning the language of the higher vertebrates and especially mammals during the expression of their sexual intentions.

Friendship (social behaviour)

Regarding the language that man uses to express his or hers social-friendship behaviour, it could be said that it is an issue which is almost impossible to be expressed by numbers or even by examples. This is because, each one of us is not

identical to any other, even to ourselves, changing our type and level of friendship behaviour expression many times even per day, depending on many factors. This differentiation is due to the fact that each one of us is a unique world and our nature wants us to act independently. However, since the companionship seems to be dramatically related to humans' well being (nobody can live alone even in heaven!), it could be said that the expression of humans' friendship behaviour could be unified to some extent.

This unification could include providing assistance to somebody who needs it, as well as, participation to common entertainment, working or even living together. Talking about the case of two individuals, the friendship behaviour comes after a well knowledge of the characters and the satisfaction of accepting each other. In this case, the friendship intention aims to achieve a deep appreciation and respect between the two individuals. This appreciation and respect, when we are talking about more than two people, should be succeeded with limited personal communication.

The examples within the animal kingdom concerning the language of expressing friendship behaviour, although they are not too many, they are extremely remarkable. This is due to the fact that they are referring to well organised communities, like those which are presented even by invertebrates, as in some insect species (ants, bees). Within the lowest vertebrates (fish), friendship could be expressed by many ways. Special mention has to be done to those that are related to the protection of the individuals of a community from natural enemies. Also, to the parental care that in some cases involves a continuous watching of the juveniles during the first stages of their life. Of course, the friendship expression of higher vertebrates (mammals) is much more similar to that of man. Amphibians, reptiles and birds represent intermediate stages.

Love (altruism)

In humans altruistic behaviour is usually expressed by selflessness, and whatever it means, and even by self-sacrifice. Examples of a clear language for altruistic behaviour, in animal species are not known, to me at least. However, we should assume that if there are some, they have to be expressed by higher mammals which have been provided with more, compared to the other vertebrates, logic abilities, close to the level of mankind (dogs, horses, monkeys, dolphins and whales). It should also be mentioned, that examples of altruism between individuals of the same species of animals are not so easily available.

Nevertheless, we would be unfair to animal kingdom, if we didn't mention the remarkable parental care of some animal species that could reach even self-sacrifice.

A rather similar behaviour is found in animals emotionally related with humans. Within the frame of this behaviour we should mention an obvious willing of self-sacrificing of individuals of some mammal species (mostly dogs) trying to defend their master. This, could be explained by the fact that not only logic abilities are present in these animals, but also that they are provided by special centres in their brain able to express emotional feelings and behaviour.

Without considering it as an altruistic action, a man or a woman can offer even their lives expressing their Love for several ideas or objects. This type of Love can be only expressed by humans. Most of the times this is not understandable even by other men but everybody has to accept that everything can be loved by man.

Epilogue

It is clear, ladies and gentlemen, that love, by any means, is a hereditary phenomenon. Its expression in both mankind and animals is realised by specific molecules and biochemical pathways.

It should be believed that the origin of this phenomenon is based on the involvement of common, for humans and animals, genes. The laws of heredity dominate their development within and among different animal species, since their appearance. It is worth reminding that between the first appearance of fish and that of mankind on earth is characterised by a considerable difference in millions years. Fish appeared about 400 million years ago, amphibians 325, reptiles 255, birds 165, mammals 39 and humans about only 2 million years ago. That is why love shows an extremely tremendous variability of its existence and language, in both horizontal (different species) and vertical (mating, friendship and altruism) dimensions. This is more obvious in the case of humans and especially regarding to their expression of friendship and altruism. In other words, in this case, feelings are not only present (due to the function of specific brain centres), but they must also be expressed.

It is certain that, nowadays, scientists know a great deal about this phenomenon. But, it is more certain that they are still far away to explain everything. Although present scientists know much more than those Socrates knew 2500 years ago when by the end of his life he said "...the only thing I know is that I know nothing...", my estimation is that the relation between known and unknown, still remains the same. It is my believe that the more we know about nature and especially about love, the more we are approaching God.

Since all animal species and probably plants (why not?) are involved in the procedures of reproduction and friendship, and only humans have the gift of expressing the pure Love, two points should be emphasised. First, that love is needed, extremely badly, by each living creature and of course by the environment. Second, humans have the power not only to preserve but also to improve the meaning of love by any possible way and means. It is the only way for all of us to live in peace and in harmony, being surrounded only by friends, in a natural environment.

It is obvious my friends that I did not succeed, in my speech, to include, in only one word, the meaning of love. But I can say that Love is, or could become, the most clear and complicated, the most peaceful and stressful, the most dark and light, the most friendly and hostile, the most expensive and inexpensive, the most pleasant and unpleasant, the most sweet and bitter, the most explainable and hard to be explained, etc., etc., etc. thing. So, that I can only say love is love, nothing more and nothing less. That is why nobody could be blamed being in love and, of course, that is why nobody can stop love.

Before I finish my speech, I would like, all of you, to permit me to suggest to the young participants in this symposium, that if you really want to be happy you must understand the difference between "I make love", "I am in love" and "I love". To the people who are close to my age, my suggestion is "Try to be young", and to all of us to remember always what Κλεόβουλος-Kleovoulos (about 2600 years ago) said "Μέτρον Ἀριστον" (Metron ariston-Avoid the extremes).

Dear Professor Inam and Dr. Aslan, I have to confess, openly, that I took your invitation as a special honour, expressing your friendly feelings. That is why I accepted it. I believe that our relationship is towards reaching the level of an honest

mutual respect. I think that we all have to believe that this is something important and worth to be extended to most of the people of both countries, especially this period. After all, we can continuously state that the existence of friendship decreases, to the lowest level, the need of laws and state regulations, as Αριστοτέλης (Aristotelis-Aristotle) said (about 2400 years ago). Let us honestly try to be good friends. Not only because of all those mentioned before, but also because being friends we can use the remarkable wise saying of yours, here in Turkey, which says: “Eski dost düşman olmaz”.