CAN CULTURE BE CONSIDERED IN CONTINUITY WITH NATURAL EVOLUTION? SUSAN BLACKMORE'S MEMETIC APPROACH AND ITS CRITIQUES

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ABSTRACT

CAN CULTURE BE CONSIDERED IN CONTINUITY WITH NATURAL EVOLUTION? SUSAN BLACKMORE'S MEMETIC APPROACH AND ITS CRITIQUES

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This work is about cultural evolution. Memetics and particularly Susan Blackmore's memetic approach is examined as an example of a Darwinian Theory of cultural evolution. It is questioned whether Susan Blackmore's account of cultural evolution has original insights and whether this account is sufficient for explaining the phenomenon of culture. Her account is examined theoretically and conceptually. This dissertation consists of four main parts. In the first part, the forerunners and the background of Susan Blackmore are outlined. In the second part, key points of Susan Blackmore's memetic approach are summarized. The third part is devoted to criticisms of Susan Blackmore's memetic approach from within the memetics and some of the shortcomings of it are reviewed. Finally, coherency of this memetic approach is evaluated in the perspective of social sciences and its implications for cultural studies are discussed. It is concluded that Blackmore's theory of cultural evolution that takes gene-based evolution as a model has a number of shortcomings to shed a proper light on the matter of culture.

Key words: Evolution, cultural evolution, memetics, Susan Blackmore, culture, imitation, genes, memes.

ÖZ

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KÜLTÜR DOĞAL EVRİMLE SÜREKLİLİK İÇERİSİNDE ELE ALINABİLİR Mİ?
SUSAN BLACKMORE'UN MEMETİK YAKLAŞIMI VE ELEŞTİRİLERİ

Bu çalışma kültürel evrimle ilgilidir. Bu tezde, bir Darwinci kültür teorisi olarak memetik ve özelde Susan Blackmore'un memetik yaklaşımı incelenmektedir. Susan Blackmore'un kültürel evrimci açıklamasının yeni kavrayışlar getirip getirmediği ve bu yaklaşımın kültür olgusunu açıklamadaki yeterliliği sorgulanmıştır. Onun yaklaşımı teorik ve kavramsal olarak incelenmiştir. Bu tez dört bölümden oluşmaktadır. Susan Blackmore'un halefleri ve memetik yaklaşımının arkaplanı özetlenmiştir. İkinci bölümde, Susan Blackmore'un memetik yaklaşımının ana hatları özetlenmiştir. Üçüncü bölüm Susan Blackmore'un memetik yaklaşımının eksikliklerine ve memetik alanı içerisinde ona yapılan eleştirilere hasredilmiştir. Son olarak bu memetik yaklaşımın tutarlığı sosyal bilim perspektifinden değerlendirilmiş ve kültürel çalışmalar açısından sonuçları tartışılmıştır. Blackmore'un gen-merkezli evrim modelini temel alan kültürel evrim teorisinin kültür sorununa ışık tutamayacak kadar çok eksiklikleri olduğu sonucu çıkarılmıştır.

Anahtar Kelimeler: Evrim, Kültürel Evrim, Susan Blackmore, Kültür, Taklit, Genler, Memler.

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I would like to dedicate this work to my mother, who is the main cause of my life and to my wife, Tuğba Demir, who puts my life in a meaningful form.

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INTRODUCTION

This world we live in is a unity that consists of the two elements: what we describe as culture and nature. Human beings also are considered as a unity that consists of on one side given oe pre-existing natural things and on the other side the properties that are acquired trough social life. In Western culture these two notions, nature and culture, are generally treated as though they are in opposition. The notion of culture brings to our mind those phenomena, which are not natural, and likewise the concept of nature is seen as a pure area where any human invention is not included. These two interwoven concepts interestingly negate each other.

Culture is considered a skill peculiar to human beings and in this sense, human beings become uniquely different from all other living and non-living beings in nature. As culture is the distinguishing hallmark of humans, the uniqueness of humans in the universe can be understood by examining culture. To understand the essence of culture is to understand the essence of being human.

According to Giambattista Vico (1725/1948), since cultural artifacts are created by human consciousness and since the human mind is same both in the past and today, humans are capable of knowing cultural phenomena in ways that are not possible with respect to natural things. Indeed, phenomena created by us must be more understandable than natural things, which we do not create. We can understand our products. It seems very plausible, but when we attempt to explain the notion of culture this pure vision becomes blurred. The questions, such as where we can find pure nature which is not defiled by human invention, is culture really unique to human beings, can we understand culture inside the culture taking into account that we necessarily think through the lens of culture, is the concept of culture the same at all times and for all societies, restrain us

from easily capturing the essence of culture.

However, what Vico highlighted, nature and culture are different realities and we need different sciences. Whenever two interdependent concepts emerge, then the dialectical process begins to operate in which the two poles always exist by negating the other and in the end one pole of the dichotomy dominates the other pole. Today, this kind of oppositional struggle can be seen in academia.

One side of dichotomy will eventually dominate the other. Some thinkers assert that culture creates the notion of nature, others claim culture is a product of nature. There are two camps. One reduces culture to nature; the other reduces nature to culture. Today, we can see various examples of the two camps. There is a biologist reductionist camp, which gets inspiration from Darwin and increases its influence through the acceleration of researches of new sciences such as zoology, socio-biology, genetics, cybernetics etc. For them, culture is nothing but a property that serves only the survival of human kind in the course of evolutionary progress. Everything that seems to be transcendent can be explained by means of natural processes. Within this direction, socio-biology seeks to find some sorts of human behavior, such as social division of labor, altruism, parentage, aggression, in the behaviors of some animal communities and our ape ancestors. As such, bio-semioticians assert, in the aspect of semiotics, human kind's communicative ability is just a broader and more complex version of animal communications. Biologists treat culture, which was developed by humans who have the most sophisticated cerebral cortex, as a natural continuity in the process of evolution. Naturalist cognitive scientists lodge humans in nature because of the fact that human acts totally stem from some basic impulse-reaction processes and a set of physico-chemical reactions.

On the other side, there exists a social constructivist camp, which reduces nature to culture. Social constructivism, especially triggering by post-structuralism, has become an unchecked trend in the social sciences, which tries to cast doubt all phenomena that are regarded as given, biological, or natural. For them there is nothing to be taken as a given thing, all that we see is created or determined by what is social. Thinking that all the things are a construction of the human mind, prevents us from common sense

thinking, and tries to dismantle the opposition in favor of culture. This perspective produces a new noumenal domain, that is, it implicitly says that even if there is something beyond the realm of language or social conventions we can never capture it.

Hence, what is the main arbiter of human behaviors? Which side drives us? It is still an open-ended question but in this work, I especially focus on the biologist reductionist camp, its suggestions and shortcomings.

As Dobszhansky (1973) said "nothing in biology makes sense except in the light of evolution" (p. 125). Indeed, today still the Darwinian theory of evolution is the dominant paradigm in the life sciences. What is important in Darwin's theory, in terms of nature-culture opposition, is its attack on human's privileged position in nature. Humans, as a species, are not created by an intelligent designer and also have no different way of development dissimilar to any other living beings. Human kind is not the target of evolution, but rather it is a contingent station in millions years evolutionary process. This revolutionary insight affects our understanding of the surrounding nature and ourselves. From the date when *Origin of Species* published until today, a Darwinian industry has developed. Evolutionary sociology, evolutionary aesthetics, evolutionary psychology, evolutionary linguistics and even evolutionary cosmology have come on to academic scene. Evolutionary ideas are also applied in medical biology and immunology. Computer sciences have developed theories in which programs evolve through Darwinian notions such as variation, mutation, selection etc. Darwinian theory is moving towards becoming a theory of everything, a universally applicable theory. Blackmore calls this circumstance, Universal Darwinism.

After the Second World War, two evolutionary theories arose for explaining cultural phenomena. Evolutionary psychology and sociobiology gained popularity in a couple of decades. These two disciplines made efforts toward explaining human behaviors in terms of natural evolutions. For them, our body had formed though million years according to basic biological needs and the ways that would be advantageous to genes. However, these two discipline always seek biological advantages in the human brain and when facts, such as abortion or birth control are taken into account, they

evaluate these cultural facts as deviations because these are hazardous to our genes' survival. For them a cultural phenomenon must essentially sustain biological adaptability and gene survival. Thus, they reduce culture to nature as we can see various forms in history.

However, memetics, as a Darwinian theory, resists these kinds of reductionist approaches. It develops a new theory. Memetics, ushered in by Dawkins, claims that human behaviors are not only the upshot of genetic survival, but also the survival of memes. A meme is a gene-like cultural unit leaping from brain to brain, or brain to artifacts, which is the cause of culture. All living beings have DNA, a unit of biological heritage, which was the first replicator on earth. According to Richard Dawkins gene-based theory, the ambition of genes for survival, lead them to replicate themselves relentlessly and also make proteins and bodies in order to protect themselves. Individual living being are the outcome of this struggle for the survival of genes. But at a certain time in evolutionary process a second replicator came into being, which called a meme, a unit of cultural heredity. The interaction of these units gives rise to the cultural world. Memetics is the discipline that seeks to define a unit of meme, to find the existence of memes, and to explain the mechanisms of memes interaction.

The seeds the discipline of memetics were sowed by Richard Dawkins in 1976. Up until now, memetics did not manage to demonstrate its expected success. If we simply search Google for the term memetics, we find 504,000 results. This simple experiment shows that memetics has gained popularity especially among laypersons. But also there is an Internet publishing journal for the discussion of memetics academically. Hence, memetics deserves academic attention. Here, we focus on the meaning and the implications of memetics. The reason to choose this topic is not to study memetics per se, but rather to study it as a sample of contemporary approaches of nature-culture oppositions. Since, memetics has a slightly different position from other theories that attempt to account for culture in terms of natural evolution, this work would like to look at how memetics deals with this dichotomy, whether it makes a coherent theory or not, and the question can memetics be a cure for the problem of culture.

Since, memetics is a work in progress, there is no single, unified theory of memetics. For this reason, I limit this work to only Susan Blackmore's memetic approach, because she is the most popular writer among all memeticists, and it can be said that her book *The Meme Machine* made memetics a universally known theory.

This dissertation is about Susan Blackmore's memetic approach and its critiques. In order to do that, firstly Blackmore's background and her theory are given. Then in the second part some of the criticisms from within and from outside the discipline of memetics is researched. The final aim of this dissertation is to explain Susan Blackmore's memetic approach and evaluate it in terms of coherence in itself and also its implications for cultural studies. To realize this aim, we handle the issue in four chapters.

In the first chapter, Susan Blackmore's background, namely the history and the development of memetics are given. Since, it is essentially a Darwinian theory, first of all Darwin's theory of evolution by natural selection is considered briefly. Then, Richard Dawkins's, as a founder of memetics, theory of the selfish gene is described and related to theory; the concept of meme is introduced. After giving the initial description of meme theory, another important figure in memetics, Daniel Dennett is discussed. These two figures provide a base for Susan Blackmore, so their theories and insights are described.

In the second chapter, Susan Blackmore's memetic approach is explained. Her theories and claims in various articles and in her famous book *The Meme Machine* are examined. The key point of her approach is succinctly explained in order to clarify her understanding of memetics and prepare for further criticisms.

In the third chapter, some of the criticisms from within memetics are presented. Although there are diverse points that have questioned Blackmore's approach, they are categorizes here in five basic sections. Some of the cited claims do not directly target on

Blackmore, but they are mentioned because these are indirectly corresponding to Blackmore's shortcomings. In the first two sections, some of the mentalist and behaviorist criticisms are reviewed to show that Blackmore's indifference on the issue of determining the real place in which memes reside gives way to an epistemological crisis in her theory. In the third section, criticisms on the notion of imitation, which is positioned at the center of Blackmore's explanations, are tackled. It is notable to point out that her notion of imitation is self contradictory to some extent, and also insufficient in terms of accounting for all cultural transmissions. The fourth section is devoted to a Blackmore claim that says what makes humans different is their capacity to imitate. This assertion is examined and it is argued that this claim has no scientific basis. Finally, some methodological issues are handled such as the lack of a dependable philosophy of science, the necessity of stratification of the means of cultural transmission, and so on. Hence, in this chapter, the coherency and power of Blackmore's memetic approach are examined in the context of memeticists debates.

In the final chapter, this memetics approach is questioned in terms of the concerns of cultural studies such as anthropology, politics, history of philosophy, power relations, and so on. Although Susan Blackmore's memetics has many points that are debatable for cultural studies or other social sciences, such as the essence and the meaning of language, the notion of self, the explanation of altruism etc., it is particularly focused on her general initiative assumptions. In the first section, this work focuses on the matter of culture to which memetics allegedly offers a solution. It is shown that memetics has no well-defined notion of culture, let alone a solution. In the second section, the logical fallacies of Blackmore are explored. Some of the presumptions are made at the very beginning of the theory lead it to rhetorical and metaphysical fashion, rather than science. The third section is devoted to analyzing the discourse of memetics. The questions such as which world-view memetics uses and in which discourse it talks are questioned. Memetics is defined a member of the Third Culture and we discuss the intricate relationship between cultural studies and the Third Culture. Finally, a generally accepted claim that Darwinism is pulled down Platonism and its essentialism is

examined. While at first glance, memetics seems to destruct Platonic essentialism, it is argued that memetics conjures up the specter of Plato with new scientific terms.

CHAPTER 1

THE FORERUNNERS OF SUSAN BLACKMORE'S MEMETIC APPROACH

This chapter is devoted to the outline of the basic theories on which Susan Blackmore depends. As memetics is essentially a Darwinian theory, recalling what Darwin said is necessary. After that, Richard Dawkins's and Daniel Dennett's consideration of memetics will be recapitulated here since Blackmore develops her own approach on these thinkers' ideas. The purpose here is to give the background of Susan Blackmore's memetics

1.1. Memetics: A Darwinian Theory on Culture

Memetics is essentially a Darwinian theory on how the mind works and how social complexity evolved. So before talking about memetics, it is important to remember what Darwin said. His book *On The Origin of Species* is one of the most influential books in western modern thought. Below, I give a brief summary of his ideas.

The book is essentially on the theory of descent with variation by means of natural selection, which is mostly known today as *evolution*. It depends on two main themes: the variation of species and struggle for life among individuals. The main mediator of these two themes and the common principle in the organic world is natural selection. Darwin (1859/2008) explain natural selection in his introduction:

> As many more individuals of each species are born than can possibly survive; and as, consequently, there is a frequently recurring struggle for existence, it follows that any being, if it vary however slightly in any manner profitable to itself, under the complex and sometimes varying conditions of life, will have a better chance of

surviving, and thus be naturally selected (p. 7).

This is a succinct summary of Darwin's own work. For Darwin, those individuals who win the fight for survival would become dominant in the population of the species, "and, if that population is isolated from other populations of the same species, it will begin to diverge from them and may eventually form an entirely new species"(Price, 2008, p. 31). Darwin's general ideas can be summarized as such. What follows is, a brief outline of the book, *The Origin of The Species*.

The book starts with examination of a pigeon's variations under domestic conditions. Darwin, in the first chapter, shows that domestic pigeons vary in man-made conditions and thus, there is a man-made, artificial selection. He also shows that a great deal of hereditary modification is at least possible. Therefore, "species are mutable or subjected to change", so, they have no essence (Stefoff, 1996, p. 75). Although this claim is extremely revolutionary with regard to the traditional Aristotelian and Platonic philosophy of nature which regard that species should have primordial essence, the idea of variability did not begin with Darwin, because Lamarck and the grandfather of Darwin, Erasmus Darwin especially has propounded this idea before Darwin. But actually, "the question to which Darwin was trying to find an answer was not whether or not species could change, but how they changed" (Price, 2008, p. 49). So, Darwin shows again, to same extent, a known idea of the changeability of species under some circumstances.

Then in second chapter Darwin asks a crucial question: Is there such a variability of species in (the state of) nature? Darwin tackles here variation in nature by providing plenty of examples of the variety within species across their geographical ranges. His samples picked up in the Galapagos showed variations occur when a population is isolated from its parent's species. Organismic life has been changing with subtle variety, and their newly acquired characteristics are inherited by their offspring.

After that he describes what he calls "the struggle for existence" which means that organism have excessive capacity for reproduction. When most individuals of a species produce a great deal more offspring than can possibly survive, then they compete with

one another for the available resources. This conception came from political economist Thomas Malthus and Darwin (1859/2008) expresses it:

> The struggle for existence among all organic beings throughout the world, which inevitably follows from the high geometrical ratio of their increase, will be considered. This is the doctrine of Malthus, applied to the whole animal and vegetable kingdoms (p. 7).

In the fourth chapter, Darwin puts together the concepts of variations and natural selection; leading him to the concept of the survival of the fittest. "Variations that help organisms survive and adapt are passed on, and eventually new species evolve through natural selection" (Stefoff, 1996, p. 75). According to Darwin natural selection is a process for "the preservation of favorable variations and the rejection of injurious variations". He continues:

> It may be said that natural selection is daily and hourly scrutinizing, throughout the world, every variation, even the slightest; rejecting that which is bad, preserving and adding up all that is good; silently and insensibly working, whenever and wherever opportunity offers, at the improvement of each organic being in relation to its organic and inorganic conditions of life. We see nothing of these slow changes in progress, until the hand of time has marked the long lapse of ages, and then so imperfect is our view into long past geological ages, that we only see that the forms of life are now different from what they formerly were (Darwin, 1859/2008, p. 66).

This is the general framework of *On the Origin*. Much of the rest of the book is given over to providing illustrations of natural selection, explaining particular points in more detail and describing several problems with the theory in anticipation of likely criticisms, such as difficulties of transition or how a single organ can be changed into an elaborately constructed entity, the subject of instinct, hybridism, the problem of imperfection of geological records, details about geological succession and distribution and so on (Darwin, 1859/2008). "Many of the examples he uses come from oceanic islands, particularly those with which Darwin was personally familiar, having visited

them on board the Beagle" (Price, 2008, p. 34).

Another important book of Darwin is *Descent Of Man,* which can be seen as an integral part of the theory of evolution by natural selection. Here Darwin applies his evolutionary theory to human evolution and to details of his theory of sexual selection. Darwin (1871/2009) states his aim as such:

> The sole object of this work is to consider, firstly, whether man, like every other species, is descended from some pre-existing form; secondly, the manner of his development; and thirdly, the value of the differences between the so-called races of man (p. 2-3).

The book consists of two parts. In the first part Darwin occupies himself with the origin of human beings. For him, man is not a special kind of animal on the Earth, instead humankind is just another product of the evolutionary process. He states: "Man is the co-descendent with other species of some ancient, lower and extinct form" (Darwin, 1871/2009, p. 3).

Darwin argues, against the mind-body distinction, that both physical and cultural evolution of humans is a natural process; they evolve from primitive to complex. Human being's characteristic traits and their mental capacities are inherited the same as physical characteristics. (This claim may probably be the main inspiration for memetics and sociobiology). Darwin also handles such problems the roots of the mind, individuality, self-consciousness, which is regarded as unique features of human beings, and asserts that the differences between human and animal are not substantial. He puts it as follows:

> There can be no doubt that the difference between the mind of the lowest man and that of the highest animal is immense...Nevertheless the difference in mind between man and the higher animals, great as it is, is certainly one of degree and not of kind. We have seen that the senses and intuitions, the various emotions and faculties, such as love, memory, attention, curiosity, imitation, reason, etc. of which man boasts, may be found in an incipient, or even sometimes in a well-

> developed condition, in the lower animals. If it be maintained that certain powers, such as self-consciousness, abstraction, etc. are peculiar to man, it may well be that these are the incidental results of other highly-advanced intellectual faculties; and these again are mainly the result of the continued use of a highly developed language (Darwin, 1871/2009, p.105).

Then, Darwin claims that the weakness of the human species, which may have come from chimpanzee rather than stronger orangutans, leads to individuals to become a social animal due to the necessity of survival. In Chapter V, Darwin seeks to show that intellectual and moral faculties of our civilized world descend from barbarian forms. To convince us that "all civilized nations are the descendants of the barbarians" (Darwin, 1871/2009, p. 181), he adduces proofs from anthropology and biology. He then turns to the problems of the human race, namely, the problem of whether the different races of human beings are of the same species or not. For him, there are some visible differences among races, yet all races are essentially in the same species. He concludes:

> Although the existing races of man differ in many respects, as in color, hair, shape of skull, proportions of the body, etc., yet if their whole organization be taken into consideration they are found to resemble each other closely in a multitude of points (Darwin, 1871/2009, p. 232).

The second part of this book is about sexual selection that developed as a contribution to natural selection. Some members of the group have advantages over others, in exclusive relation to reproduction. "In such cases sexual selection must have come into action, for the males have acquired their present structure, not from being better fitted to survive in the struggle for existence, but from having gained an advantage over other males, and from having transmitted this advantage to their male offspring alone" (Darwin, 1871/2009, p. 257). Darwin points out that this struggle for mating leads creatures to produce secondary sexual organs, like tails of peacocks, and this eventually affects their life and survival. For Darwin, sexual selection is another force that formed the species.

The heritage of Darwin has become a source of inspiration in the past centuries.

From Bergsonian creative evolution to natural theology, from Weismann's mathematical contribution to the other theories of synthetic evolution, Darwin's theory of evolution by natural selection remains in the intellectual arena. But the synthesis of Darwin and Mendel led to the birth of Neo-Darwinism. The genetic view brought considerable insights to the theory of evolution and rescues it from a large number of unanswered questions. This association also paved the way for the disciplines such as sociobiology, evolutionary psychology, evolutionary genetics, and finally memetics. Memetics, founded by Richard Dawkins is now a quasi-science that attempts to account for culture including complex modern culture with terms of Darwinian evolution. The following sections will be devoted to a brief history of the development of memetics and key ideas of predecessors of Susan Blackmore.

1.2. The Father of Memetics: Richard Dawkins

Richard Dawkins, a British ethologist and evolutionary biologist, had considerable effect on evolutionary theory. Dawkins became popular with his 1976-printed book *Selfish Gene* in which he brings new initiatives to evolutionary theory and introduces the concept of the *meme.*

Dawkins negates the existing selection theories in *Selfish Gene*. Most biologist agree upon biological evolution by natural selection, which is Charles Darwin's main idea, but there were several different positions about how this natural selection works. "For Darwin and most evolutionists since 1859 the individual organism was the object of selection. The individual is the entity which survives or not, which reproduces successfully or not" (Mayr, 1997, p. 2091). Wyne Edward (1962) put forward that some certain features of evolution could only be understood by focusing on the group's survival rather than individuals. George C. Williams (1966) has a group selectionist model that asserts that an evolutionary unit becomes fixed or spread in a population because of the benefit it provides to the group. Thus main focus of his approach is groups. John Maynard Smith (1976) also takes position in the group selectionist camp. Stephen J. Gould and Neil Eldredge (1977) developed a different theory of speciation, which called "punctuated equilibria", that depends on sudden changes in species, eruption and extinction of species. Besides these, there are heated debates on the issue of choosing species as a selection unit among Vrba, Edredge and Gould (Lloyd, 1989). Leo Buss (1987) also develops a cell-centered view of evolution. Against these positions Dawkins (1976/2006) propose a new way for understanding: gene-based natural selection:

> I shall argue that the fundamental unit of selection, and therefore of self-interest, is not the species, nor the group, nor even, strictly, the individual. It is the gene, the unit of heredity (Dawkins; 1976/2006, p. 11).

For Dawkins the basic unit that should be taken into account is the gene. But what is a gene? There are controversies about what can be defined as a gene in genetics, but

here we put aside this elusiveness, and take the concept of a gene as Dawkins defined it. For him in evolutionary history "a particularly remarkable molecule was formed by accident called a *replicator*" (p. 15). A replicator is an entity that has property of being able to create copies of itself. The generation of organismic life stems from this replicative property. All animals, plants, fungi, bacteria, and viruses have the same kind of replicator-molecules called DNA.

> DNA molecules do two important things. Firstly they replicate, that is to say they make copies of themselves… At every division the DNA plans were faithfully copied, with scarcely any mistakes. This brings me to the second important thing DNA does. It indirectly supervises the manufacture of a different kind of molecule-protein. The coded message of the DNA, written in the four-letter nucleotide alphabet, is translated in a simple mechanical way into another alphabet. This is the alphabet of amino acids, which spells out protein molecules. Genes do indirectly control the manufacture of bodies (Dawkins; 1976/2006, 23).

Thus, a gene is a unit that contains DNA that is a replicative unit and provides instructions for the manufacturing of bodies through protein synthesis. He was aware that there is no agreed upon definition of a gene, so frequently he explain his own concept of a gene. Here Dawkins' (1976/2006) other definitions:

> One gene maybe regarded as a unit that survives through a large number of successive individual bodies (p. 25).

> A gene is defined as any portion of chromosomal material that potentially lasts for enough generations to serve as a unit of natural selection. In the words of the previous chapter, a gene is a replicator with high copying-fidelity (p. 28).

> I am using the word gene to mean a genetic unit that is small enough to last for a large number of generations and to be distributed around in the form of many copies. Defining a gene as a little bit of chromosome, which potentially lasts for many generations (p. 32).

> To recapitulate; for Dawkins a gene is a part of chromosome that includes DNA

which is basically a replicator, a replicator with high fidelity that replicates itself in bodies and can survive through a large number of individuals' successive bodies. Genes are producers of our bodies and all other animals and plants. Genes provide a program, in all living things, that direct all creatures.

> The genes are master programmers, and they are programming for their lives. They are judged according to the success of their programs in coping with all the hazards that life throws at their survival machines, and the judge is the ruthless judge of the court of survival (Dawkins; 1976/2006, p. 62).

As a basic unit in evolution each gene tries to survive for the sake of itself. In order to survive genes create proteins and ultimately proteins create the body. In this manner, bodies that are constituted of proteins are just the protectors of genes. Dawkins (1976/2006) sharply puts this point:

> I call the book The Selfish Gene. I said that I preferred to think of the gene as the fundamental unit of natural selection, and therefore the fundamental unit of self-interest. (p. 35). We are survival machines-robot vehicles blindly programmed to preserve the selfish molecules known as genes (p. xxi).

All creatures including human beings are nothing but survival machines created by genes. Genes produce the bodies they reside in and use bodies as a safe shelter for their own purposes. The individual, as a selfish machine, is programmed to do whatever is best for its genes as a whole. The word purpose is figurative here, because genes have no *telos*, they are only programmed to survive and copy themselves. As Dawkins notes, "genes have no foresight. They do not plan ahead" (p. 24). Nobody programs them; these selfish entities are just the product of relentless and blind natural selection.

A gene wants to survive and is trying to get more numerous in the gene pool ahead of other genes. If genes are the basic unit of selection, some genes must succeed and some others have to fail. A successful gene, namely those that increasingly spread into gene pool, must be a sound replicator. A replicator should have three main qualities: longevity, fecundity, and copying-fidelity. This means a replicator should preserve itself

in the long run of evolution by leaping from one individual to another, and also it should create more and more copies of itself, but these copies must be highly similar to or even the same as the original. A gene, which has an abundance of these three qualities will win the evolutionary competition and survive for a long time, thus get the chance to make more copies and spread all over the world.

Dawkins explains many controversial themes in evolutionary theory, such as family planning, aggression, altruism, sexual selection, cooperation, childcare, social life etc. by means of the selection of selfish genes. Although his gene-based natural selection model offers remarkable insights into the biological area, at the end of his book he expands his evolutionary theory to the social sphere and creates an original concept: the meme, to explain cultural evolution by Darwinian theory.

Dawkins (1976/2006) begins with a naturalist presumption that "cultural transmission is analogous to genetic transmission" (p.189). He acknowledges that he is not unique in that kind of analogy, before him especially by Sir Karl Popper, "the geneticist L. L. Cavalli-Sforza, the anthropologist F. T. Cloak, and the ethologist J. M. Cullen made an analogy between scientific progress and genetic evolution by natural selection" (p. 190).

All cultural evolutionist accounts agree on human products such as fashions in dress and diet, rituals, ceremonies and habits, crafts and arts, engineering and technology are outcomes of natural selection but they always try to look for biological advantages in various attributes of human civilization. Dawkins gives an example; "tribal religion has been seen as a mechanism for solidifying group identity, valuable for a pack-hunting species whose individuals rely on cooperation to catch large and fast prey" (p. 191). This explanation may be reasonable but not sufficient for Dawkins.

> These ideas are plausible as far as they go, but I find that they do not begin to square up to the formidable challenge of explaining culture, cultural evolution, and the immense differences between human cultures around the world, from the utter selfishness of the Ik of Uganda, as described by Colin Turnbull, to the gentle altruism of Margaret Mead's Arapesh (p. 191).

Although he develops a gene-based account of Darwinian theory, at the end of the book he decides to go beyond the gene eye view and draw an evolutionary schema for understanding culture and cultural diversity. This is the law that all life evolves by the differential survival of replicating entities. The gene, the DNA molecule, happens to be the replicating entity that prevails on our own planet. Dawkins (1976/2006) has a science-fictional assertion that apart from DNA or genes, a second, new kind of replicator emerged on this planet. He puts this second replicators name as *meme*.

> We need a name for the new replicator, a noun that conveys the idea of a unit of cultural transmission, or a unit of imitation. "Mimeme" comes from a suitable Greek root, but I want a monosyllable that sounds a bit like "gene". I hope my classicist friends will forgive me if I abbreviate mimeme to meme. If it is any consolation, it could alternatively be thought of as being related to "memory", or to the French word meme. It should be pronounced to rhyme with "cream" (p. 192).

A gene, the basic unit of natural selection, is the first replicator that is responsible for creating bodies and the second replicator came into existence in the atmosphere that was created by genes. The task of this second replicator, the basic unit of culture, is production of ideas and behaviors by spreading across the human brains. Roughly genes are responsible for bodies or organic life and memes are responsible for ideas or cultural life. For Dawkins (1976/2006),

> Examples of memes are tunes, ideas, catch phrases, clothes fashions, and ways of making pots or of building arches. Just as genes propagate themselves in the gene pool by leaping from body to body via sperms or eggs, so memes propagate themselves in the meme pool by leaping from brain to brain via a process, which, in the broad sense, can be called imitation. Imitation, in the broad sense, is how memes can replicate. (p. 192)

Dawkins says DNA was the first replicator on the earth for more than millions years, but at a certain time new conditions arose in which a new kind of replicator can make copies of itself, the new replicators came into the scene and a new kind of

evolution started. “Once self-copying memes had arisen, faster, kind of evolution took off. We biologists have assimilated the idea of genetic evolution so deeply that we tend to forget that it is only one of many possible kinds of evolution” (p. 194).

A meme is an idea or a behavior that is capable of transmission from one brain to another. “The meme of Darwin's theory is therefore that essential basis of the idea which is held in common by all brains that understand the theory” (p. 196). Memes reside in the brain. A meme seeks to make itself more room in the brain, so it struggles with its rival memes. Other than brains, memes also fight for dominating the attention in the mediums such as television, radios, newspapers, book, in short wherever they can reach the host’s brain. Memes compete for getting a home for itself in the brain, and the principles of this rivalry for home is just as the same principle for first replicator, that is longevity, fecundity and fidelity.

Memes interact with each other in order to preserve themselves. For example, the God meme could be regarded as an organized meme, associated with church, with its architecture, rituals, laws, music, art, and the written tradition becomes a co-adapted stable set of mutually-assisting memes.

“Memes and genes may often reinforce each other, but they sometimes come into opposition” (p. 199). For example a priest’s meme-driven behavior of celibacy is disadvantageous for genes but this manner is due to the meme’s own desire of survival. Celibacy memes try to spread from brains to brains even if this is disadvantageous for genes. This point has crucial importance, because memes have their own agenda, it is a replicator free from gene’s boundaries, it works for its own sake; so this point is what detaches Dawkins from other evolutionary explanation such as sociobiology, evolutionary psychology, genetics, and biology.

Dawkins asserts that human beings are just a vehicle for memes and genes. Two replicators work for their own sake, they sometimes cooperate and sometimes not. Each of them are subject to Darwinian natural selection. We are at the service of selfish, blind, unconscious replicators but Dawkins (1976/2006) interestingly claims that human agency may alter this case. He heralds that:

> We are built as gene machines and cultured as meme machines, but we have the power to turn against our creators. We, alone on earth, can rebel against the tyranny of the selfish replicators by means of human's conscious foresight (p. 201)

Selfish Gene is the first book that mentions memes and from that time on a quasi-science of memetics has gradually evolved. Richard Dawkins (1982) also elucidates his ideas in some of his other books; *The Extended Phonotype* in which he distinguishes between replicator and its phenotypic effects. "The phenotypic effects of a gene are the tools by which it leverages itself into the next generation and tools may 'extend' far outside the body in which gene sits, even reaching deep into nervous systems of other organisms"(p. vi). For example, bodies are the product of genes and our physical appearance is phenotypic effect of genes, and also our homes that were built to preserve our bodies can be seen as an extended phenotypic effect of genes.

Dawkins uses these concepts with his meme theory. After years he became aware that there should be drawn a distinctive line between memes as replicator and the phenotypic effects as meme products. American anthropologist F.T. Cloak, who suggested that culture is acquired in tiny, unrelated snippets, which he called "corpuscles of culture" or "cultural instructions", inspired him. And he defined the i-culture as the instructions in people's heads, and the m-culture as the features of people's behavior, their technology and social organization (Cloak, 1975). Cloak explicitly likened his i-culture to the genotype and m-culture to the phenotype. Dawkins too drew a sharp line:

> A meme should be regarded as a unit of information residing in a brain (Cloak's "i-culture"). It has a definite structure, realized in whatever physical medium the brain uses for storing information. Memes reside in brains and their phenotypic effects are its consequences in the outside world (Cloak's m-culture) (Dawkins, 1982, p. 109).

In the following passage Dawkins explicitly introduces what are phenotypic effects of a meme:

> The phenotypic effects of a meme may be in the form of words, music, visual

> images, styles of clothes, facial or hand gestures, skills such as opening milk bottles in tits, or panning wheat in Japanese macaques. They are the outward and visible (audible, etc.) manifestations of the memes within the brain. They may be perceived by the sense organs of other individuals, and they may so imprint themselves on the brains of the receiving individuals that a copy (not necessarily exact) of the original meme is graven in the receiving brain. The new copy of the meme is then in a position to broadcast its phenotypic effects, with the result that further copies of itself may be made in yet other brains (Dawkins, 1982, p. 109).

Phenotypic effects that a meme has on the behavior of a body may affect that meme's chance of surviving. A scientific idea is an example of a meme, effect is its article or book in printed, obviously its chances of surviving and spreading through the world of scientific brains is enhanced by papers, namely, meme's phenotypic effect. This phenotype-memetype distinction provides a base for explanation for non-replicator things. If a thing is not a replicator it is a vehicle for replicators. Here, Dawkins introduces another concept *vehicle*. "A vehicle is an entity in which replicators (genes and memes) travel about, an entity whose attributes are affected by the replicators inside it, an entity which may be seen as a compound tool of replicator propagation" (p. 112). For Dawkins a vehicle is an integrated and coherent instrument of replicator preservation. "A vehicle is any unit, discrete enough to seem worth naming, which houses a collection of replicators and which works as a unit for the preservation and propagation of those replicators" (p. 114). Thus, by this distinction he explains both ideas that grounds social domain and visible cultural behaviors and artifacts.

Finally, another article of Dawkins (1991) brings some inspirations to memetic approaches. In Viruses of the Mind*,* he explains religion as a mind virus, and other common social phenomenon can be regarded as viruses. Dawkins later develops an epidemiologic model for memes in Viruses of the Mind. There are parasites of DNA such as viruses, viroid, and plasmids.

> The only thing that distinguishes viral DNA from host DNA is its expected method of passing on to future generations. "Legitimate" host DNA is just DNA that aspires to pass into the next generation via the orthodox route of sperm or egg.

> “Outlaw" or parasitic DNA is just DNA that looks to a quicker, less cooperative route to the future, via a squeezed droplet or a smear of blood, rather than via a sperm or egg (Dawkins, 1991, p. 14).

Computer viruses also exist on the pre-established, programmed basis. Both viruses and worms relentlessly occupy with duplication. For Dawkins cultural items can be considered like virus infects from minds to mind and thus contaminate the whole society. Dawkins asserts that religion is a mind virus that infects the vast majority of people but those who are contaminated have deep inner conviction and cannot realize this suffering. However, in an extreme positivist manner Dawkins believe that science is not virus contamination but religion is a genuine example of virus infection. Apart this point this contagion model has profound influence on memetics

Actually there are many points that could be criticized in Dawkins’ account but since the purpose here is to criticize Susan Blackmore, so Dawkins’s approach do not examined here, this work indirectly criticizes him because Dawkins is one of the main sources for Blackmore. Here, he is mentioned as a forerunner of Blackmore and the founder of memetics. The other principal source of Blackmore is Daniel Dennet, an American philosopher of consciousness. His two books are deeply influential in memetics literature. First of these is *Darwin’s Dangerous Idea.*

1.3. Philosopher of Memetics: Daniel Dennett

Daniel Dennett contributes to Darwin's theory and memetics with new insights in his book *Darwin's Dangerous Idea*. According to Dennett (1995), what is revolutionary in Darwin is his assault on essentialism. The taxonomy of living things Darwin inherited was itself a direct descendant, via Aristotle, of Plato's essentialism. In fact, the word "species" was at one point a standard translation of Plato's Greek word for Form or Idea, *eido*s. Dennett (1995) says:

> In Darwin's day species of organisms were deemed to be as timeless as the perfect triangles and circles of Euclidean geometry. Their individual members came and went, but the species itself remained unchanged and unchangeable. This was part of a philosophical heritage, but it was not an idle or ill-motivated dogma. The triumphs of modern science, from Copernicus and Kepler, Descartes and Newton, had all involved the application of precise mathematics to the material world, and this apparently requires abstracting away from the grubby accidental properties of things to find their secret mathematical essences (p. 36).

Darwin points out that species were not eternal and immutable; they had evolved over time. "But there was a powerful Platonic bias against it: essences were unchanging, and a thing could not change its essence, and new essences could not be born" (p. 38). Thus, Darwinian account rejects eternal essences and unchangeable forms, instead it proposes a framework in which the unsettled structure of living world gain its meaning. Dennett (1995) claims that Darwin's brilliant idea is algorithm and says, "Darwin had discovered the power of an algorithm. An algorithm is a certain sort of formal process that can be counted on—logically—to yield a certain sort of result whenever it is 'run' or instantiated" (p. 50).

According to Dennett an algorithm must have three main features:

1) *Substrate neutrality*: The overall procedure based on a logical structure and the materials used in instantiation are in essential. An algorithm can operate in anywhere regardless of its material structure.

2) *Underlying mindlessness*: Each constituent element of algorithm and the transition between two steps must takes place without the aid of an intentional mind, even though the product of algorithms seems a brilliant result. Thus, the design has no intentional agent.

3) *Guaranteed results*: An algorithm gives always certain result. It works deterministically; certain input must change into certain output without misstep.

For Dennett, Darwin's natural selection is an algorithm. Although it initially had an exact substrate, that is, the organic world, then in the *Descent of Man*, Darwin expanded his theory to the evolution of culture, and supports the idea that material differences are inessential. Most importantly, the whole process of evolution is run by a blind mechanism, as Dennett (1995) puts it: "Darwin offers a skeptical world what we might call a get-rich-slow scheme, a scheme for creating *Design out of Chaos without the aid of Mind"*(p. 51). Dennet reformulates Darwin:

> Life on Earth has been generated over billions of years in a single branching tree—the Tree of Life—by one algorithmic process or another… [This is] Darwin's Dangerous Idea: the algorithmic level is the level that best accounts for the speed of the antelope, the wing of the eagle, the shape of the orchid, the diversity of species, and all the other occasions for wonder in the world of nature (p. 51).

Dennett describes this dangerous idea as *universal acid* because of "it eating though everything we believed and all the ways we look at the world" (p. 63). If we apply evolutionary theory to the development of consciousness, we could see that it is an outcome of an algorithm that has no essence. In his book *Consciousness Explained*, he developed an evolutionary theory of consciousness, which embraces the meme theory.

Dennet develops a theory of consciousness that seeks to overcome mind-body distinction or what he calls *Cartesian Theater*, which means an idea that supposes there should be a metaphysical self or essence in mind that decides and supervises all complex particular phenomena. But for Dennett, consciousness evolved by blind natural selection, hence there should be no transcendental essence.

According to Dennett's account, firstly there emerged a replicator on the earth and this paved the way for constitution of multicellular organisms and visible bodies, then a coherent body needed to recognize itself and drive a line between the inside and the external world, but all these processes of recognition must ultimately be accomplished by myriad of blind mechanical routines. The recognition of inside and defending boundaries of body lead to misrecognition that there need always be a higher executive, yet, it is just a product of blind selection. For Dennet (1991) "in nature, handsome is as handsome does; origins do not matter" (p. 176). Obviously he keenly takes a stance against dualism and Cartesianism, as a consequence of this he puts forward that consciousness has no essential, primordial, transcendental feature, rather it is concocted by the cooperation of memes and genes. Dennett (1991) narrates how did hard-wired genetic construction of mind occur and explains that this hard-wired system is too sluggish to confront rapid changes of environment so genotypes yields better adapted phenotype that has variable or plastic character hence can change and learn during their lifetimes.

> The emergence of plasticity in nervous systems occurred at the same time as the development of learning and it provided two new media in which evolution could take place, at much greater speed than unaided genetic evolution via gene mutation and natural selection (p. 182).

Dennett (1991) says Mother Nature provides a hard-wired mechanism for brain and each human is born with these properties, however it is coded for determinate cases, during a lifetime we live with unpredictable chaotic cases, and evolution should produce postnatal design fixing. Dennett asks how could such a process of postnatal design fixing be accomplished? The answer is clear: by a process strongly analogous to the process that fixes prenatal design. According to him, the Baldwin Effect settles up the task of post-natal design fixing process. Baldwin (1896) maintains that mutations that increase the capacities of learning and imitation are undergirded by natural selection. When a member finds a way that could bring it some advantages in surviving, then other members would imitate this novelty. These kinds of variances learned from other members of species, eventually would manipulate the gene pool, by manipulating the

route of selection pressure in the environment. Thus, acquired skills can indirectly affect genes. This process in not Lamarckian, who put forward the retention of acquired skills. Because for Baldwin, acquired skills gained by the vicissitudes in environment are not inherited in gene pool, instead they only cause selective pressure. Dennett develops his explanation of the evolution of consciousness from the perspective of Baldwin. Briefly, "plasticity makes learning possible, cultural evolution and transmission of its product, is the second medium of evolution, and it depends on phenotypic plasticity in much the same way phenotypic depends on genetic variation because of Baldwin effect" (Dennet, 1991, p. 193). And this new phase give rise to cultural evolution:

> Cultural evolution operates many orders of magnitude faster than genetic evolution, and this is part of its role in making our species special, but it has also turned us into creatures with an entirely different outlook on life from that of any other species (p. 339).

For Dennett (1991), the evolution of language served the function of eliciting and sharing useful information, and this "habits of auto-stimulation began to established as Good Tricks in the behavior of hominid population, then it quickly refined both learned behavioral habits of population and thanks to the Baldwin effect, genetic predispositions and further enhancement of efficiency and effectiveness" (p. 197). So, the arrival of language was the crunch time for human evolution. Things were chance after this good trick (language). Once our brains had built the entrance and exit pathways for the vehicle of language, they are swiftly parasitized by entities that have evolved to thrive in such a niche: *memes.*

What is a meme for Dennett? It is a new replicator emerged in evolution. The story of genesis of the memes is as follows: There were prokaryotes prior to arrival of our familiar cells. These prokaryotes are more simple and solitary life forms in comparison to eukaryotes. In the beginning they were drifting on earth and reproduced themselves by means of replicative elements of DNA. Then in a certain time conditions were changed and a new kind of entity came into being and dominated the living bodies in order to leap up to a new phase in evolution. The arrival of eukaryote cells, which

could be organized in order to construct a higher organism, give rise to the beginning of multicellular life. Multi-cellular organism invaded the world's space and shaped the world according to the most comfortable structure for their life, during the a few millions years. Millions of different creatures varied from these multi-cellular structures by endless differentiating. It was the time when the story of memes could begin. Dennett (1991) narrates:

> One fine day, another invasion began, in a single species of multicellular organism, a sort of primate, which had developed a variety of structures and capacities these new invaders transformed the apes who were their unwitting hosts into something altogether new: witting hosts, who, thanks to their huge stock of newfangled invaders, could imagine the heretofore unimaginable, leaping through Design Space as nothing had ever done before. These invaders were memes, and the radically new kind of entity and replicator created when a particular sort of animal is properly furnished by—or infested with— memes is what is commonly called a person (p. 341).

For Dennett these new replicators are ideas. But he uses the term ideas not like Locke who regarded ideas as the idea of red, or the idea of god, but a somehow complex entity, an active memorable unit, which has no essence, that can reproduce itself and vary to make complex ideas "such as the ideas of arch, wheel, wearing clothes, vendetta, the Odyssey, calculus, chess or deconstructionism" (Dennett, 1995, p. 345).

These memes are one way or another identifiable entities, the smallest elements of culture or ideas that can replicate themselves in a highly reliable form and also sometimes vary in order to proliferate itself. Dennett formulates meme theory with a set of mottos:

1) *A scholar is just a library's way of making another library* (Dennett, 1990, p. 130).

This means that we always would like to imagine our selves as a creator of ideas like God. We are sure that we can change and direct our ideas and can judge them from

Olympian standpoint. However this is an illusion for Dennett, because our mind is a medium for replication of memes. Memes always try to replicate themselves regardless of the gene fitness or individual's fitness; they have their own interest. For example, this text is a medium for memes, Dennett and I are vehicles for replication of meme memes. Also, pictures, books, films, sayings, tools and buildings are meme vehicle.

> A wagon with spooked wheels carries not only grain or freight from place to place; it carries the brilliant idea of a wagon with spooked wheels from mind to mind. A meme's existence depends on a physical embodiment in some medium; if all such physical embodiments are destroyed, that meme is extinguished (Dennett, 1991, p. 204).

In such a way, some memes can contribute our fitness, some are neutral, and also some are dangerous for us. For example; calendars, music, *Moby Dick* are benign memes, some such as magazine shows and advertising are controversial, but some are highly dangerous such as computer viruses, racism, anti-Semitism, Islamofobia etc. But those memes would swiftly spread out of our control if conditions were met (Dennett, 1990).

> 2) "Idea X was believed by people because X was deemed true" is not acceptable by those who subscribe to memetics. The meme's eye view purports an alternative perspective "Meme X spread among people because X was a good replicator*"* (p. 132).

There is no essentialist attribution in a memetic standpoint, what constitutes so-called good, beautiful, dangerous, and logical, etc. is determined by the frequency of memes spreading. They leap promiscuously from vehicle to vehicle, medium to medium. The power of a meme depends on its replication capacity rather than the longevity of the individual vehicle. Platonic memes via a series of copies is a striking case. Although the first papyrus that Plato's ideas were written on perished in time, Platonic ideas remain. This is crucial point. Because for Dennett (1995), memetic transmission is primarily a semantic, not a syntactic transmission that might be directly observable in "brain language" or natural language. "What is in common, of course, is

not a syntactic property or system of properties but a semantic property or system of properties: the story, not the text; the characters and their personalities, not their names and speeches" (p. 345).

If memes are essentially semantic in character, they must reside in the brain, but the brain has a limited capacity for memes, and this leads to competition among memes to gain a room in an individual's brain and for entry into as many minds as possible. This contention is the major force in memosphere and drives memes to find good tricks to survive. For example, the memes for faith discourages critical judgments and preserves itself, also it displays frequency-dependent fitness: when rationalistic memes spread more than the faith memes, critical judgment memes will flourish, it can conceal itself in various guises, another trick for that meme called linked loci, which came from genetics, that is, two memes that can stick together and cooperate to survive can affect themselves and reproduce together. The memes for religion and the memes for art can replicate more rapidly than in the state where they stand separate (Dennett, 1991). So it has multiple tricks to survive and memes for disbelief have to find too many vigilant ways in order to get rid off belief. Another trick for memes that Dennett formulates as:

3) Ignore everything that appears in X (Dennett, 1990, p. 133).

This is a meme filter. Fundamentalist believers often ignore everything that comes from the outside of religion but some times as in the case of Dawkins, the memes for faith is always ignored in all the writings of Dawkins, because of his faithlessness. So, there are basic rules for memes, and it is possible to say that memes are programmed with some mechanisms by natural selection. "Like a mindless virus, a meme's prospects depend on its design—not its 'internal' design, whatever that might be, but the design it shows the world, its phenotype, the way it affects things in its environment" (Dennett 1995, p. 345).

If memes have their own agenda, and if we are nothing but a vehicle for the purposes of memes, hence there is no point in talking about "we" without memes. Dennett (1991) criticizes Dawkins for the reason that he still falls into the trap of Cartesianism, namely there are supposed to be genes and memes as well as us, who can

resist the tyranny of those blind replicators. Here, there is the most stirring idea on memes by Dennett, who is one of the most prominent philosophers of consciousness: If we sequester all the memes from the mind there would remain no genuine consciousness in the mind. Dennett (1991) states it as:

> The haven all memes depend on reaching is the human mind, but a human mind is itself an artifact created when memes restructure a human brain in order to make it a better habitat for memes. But if it is true that human minds are themselves to a very great degree the creations of memes, then we cannot sustain the polarity of vision we considered earlier; it cannot be "memes versus us," because earlier infestations of memes have already played a major role in determining who or what we are (p. 207).

Dennett overtly claims that human consciousness is the outcome of memes survival. There is no inner-self, no phenomenal consciousness, but rather what we call as consciousness or intentionality is just the somehow illusion of memes battle. To sum up, Dennett says that genetic evolution with environmental unpredictability gave rise to phenotypic plasticity on which memetic evolution progressed and eventually constructed human consciousness. Rising of memes at stage is highly new phenomenon (approximately 150,000 years ago, the end of most recent ice-age) in evolutionary history will take new forms; hence the status of man in the world could be changed. Once memes came into existence, the whole world history changed because memes design the human world either by working hand in hand with genes or by diverting genes into another direction. The world has passed a second phase in the course of evolution with the intervention of memes.

The two venerated Darwinist, Dawkins and Dennett were the initiators of meme theory. Richard Dawkins introduces the term, meme, in 1976, but it could manage to attract no considerable attention until, a well-known American philosopher Daniel Dennett applauded it. Dennett contributed to meme theory by integrating it into the evolution of the mind, whereas Dawkins integrated memes with biological area, Dennet placed memes into the domain of mind, which is believed as different from the biological existence. These two generated memetic, but Susan Blackmore, made it more

popular. It is fair to call Blackmore the Saint Paul of memetics, because she made memetics publicly knowable and readable. In this chapter the ideas of the predecessors of Blackmore were briefly presented; the following chapter will devoted to explain the general features of Susan Blackmore's memetic approach.

CHAPTER 2

THE PRESENTER OF MEMETICS: SUSAN BLACKMORE

It can be claimed that Susan Blackmore is one of the most prolific writers of memetics, who has many papers and one book on in this area, she is termed in this work as "the presenter of memetics". In *Meme Machine* she compiles almost the entire literature on memetic up until the year the book was published and confronts criticisms inside and outside of memetics. Thus, it is plausible to concentrate on Blackmore for the reasons that her approach is a synthesis of earlier memetic stances, she is a passionate advocate of memetics and also she entreats some of the philosophical challenges. So, let me start with giving a concise summary of what Blackmore says.

2.1. Universal Darwinism: The Theory of Everything

Her main work is the book *The Meme Machine*. The aim of this book is crafting a theory of memetics, clearing doubts surrounding memetics, and also arguing that if one can learn looking at problems of culture and philosophy with a memetic view, one could realize that memetics can provide more reasonable answers than other such theories on culture. Indeed she explains diverse difficult problems such as origins of language, excessive talking, human instinct to talk and communicate, altruism, sexual behaviors, constitution of self, the power of religions, prevalence of superstition, the evolution of Internet, etc. She says:

> My aim in this book is to show that many aspects of human nature are explained far better by a theory of memetics than by any rival theory yet available. The theory starts only with one simple mechanism – the competition between memes to get into human brains and be passed on again. From this, it gives rise to explanations for such diverse phenomena as the evolution of the enormous human

> brain, the origins of language, our tendency to talk and think too much, human altruism, and the evolution of the Internet (Blackmore, 1999, p. 9).

Blackmore (1999) evaluates her project in the scope of what she calls *Universal Darwinism*. This means a thing, which is subject to the processes of variation, selection and retention can be understood through Darwinian theory. For her, Darwin's argument has three main features: variation, selection and retention (or heredity). If these conditions are met, Darwin's theory begins to operate. Depending on Dennett's idea of algorithm, she claims the logic of Universal Darwinism can operates everywhere regardless of matter.

> The substrate does not matter – only the logic of the procedure does, as Dennett points out his logic would apply equally to any system in which there was heredity, variation, and selection. This, again, is the idea of Universal Darwinism (p. 11).

For Blackmore, what makes Darwin's theory so inspirational and beautiful is that there is no master plan, no end point, and no designer in Darwin's account of nature. She accepts that there is a progress in evolution, but it is not toward the best or like a line ending with best. From the point of Blackmore, progress goes on towards a more complexity, and here complexity confers no value. A few billion years ago there was only a primeval soup from which whole complexity sprung up and we now live in a complex world full of creatures of all kinds. This means, there is a progress in complexity, but it does not refer to getting better.

2.2. Actors of Darwinian Scenario: Replicators

All that we see in the biosphere depends on the replicators (genes and memes) power. The only thing they do is get copies when they have the machinery needed for that copying. “They have no foresight, no plan, they just get copied, but in the process some do it better and some cannot, so in this way evolutionary design comes about” (p. 13). What is a replicator? For something to count as a replicator it must sustain the evolutionary algorithm based on variation, selection and retention. For Blackmore (1991), the definition of meme is that: “memes are replicators stored in human brain (or books or inventions) and passed on by imitation” (p. 13). Are memes meeting the requirements of being replicator? Blackmore’s (1991) answer is yes, and she explains as:

> Memes certainly come with variation and when memes are passed on, the copying is not always perfect. Here is memetic selection – some memes grab the attention, are faithfully remembered and passed on to other people, while others fail to get copied at all. Then, when memes are passed on there is retention of some of the ideas or behaviors in that meme – something of the original meme must be retained for us to call it imitation or copying or learning by example. The meme therefore fits perfectly into Dawkins’s idea of a replicator and into Dennett’s evolutionary algorithm (p. 13).

Memes are passed by imitation and the copying in imitation many times this can not occur perfectly, we can see various different forms of copies of one idea or behavior, so this causes variation. But as we saw in the case of Plato’s work, although there are a myriad of different copies and translations of Plato’s works, something comes from him to us, such as the doctrine of ideas, and in a degree it is possible to say that retention is a common feature in cultural transmission. Some ideas and beliefs succeed and others fail. The succession of memes depends on human sensory, memorial, and imitational capacity and also the tricks memes exploit, the ways they group together and the general processes of memetic evolution that favor some memes over others. So, it can be seen here a kind of selection in progress. Therefore memes are replicator like genes. Although genes and memes are analogous, they are not the same.

> Genes are instructions for making proteins, stored in the cells of the body and passed on in reproduction. Their competition drives the evolution of the biological world. Memes are instructions for carrying out behavior, stored in brains (or other objects) and passed on by imitation. Their competition drives the evolution of the mind. Both genes and memes are replicators and must obey the general principles of evolutionary theory and in that sense are the same. Beyond that they may be, and indeed are, very different – they are related only by analogy (Blackmore, 1999, p. 17).

Blackmore, in a line with other memeticists, asserts that culture can be treated in the scope of Universal Darwinism. There are many evolutionary theories on culture and civilization such as Herbert Spencer's social Darwinism, Lewis Morgan's evolutionary theory of society, Karl Marx's evolutionary socio-economic theory, Sir Karl Popper's three cosmic evolutionary stages, but most of them are not Darwinian, some other Darwinian theories such as sociobiology, evolutionary psychology come back to the biological advantages in their explanation and they count genes as the only driving force. A great deal of Blackmore's book is devoted to explore why such genetic reductionist theories fail to explain complex and sometimes unreasonable human behaviors.

2.3. Genes or Memes? The Relationship of the Two Replicators

The novelty that memetics brings to evolutionary theory is the second replicators in their own right.

> The whole point of a memetic theory of cultural evolution is to treat memes as replicators in their own right. This means that memetic selection drives the evolution of ideas in the interests of replicating memes, not the genes. This is the big difference that separates memetics from most previous theories of cultural evolution (Blackmore, 1999, p. 24).

With a meme's eye view we ask not how inventions benefit human happiness or human genes, but how they benefit themselves. For example, why did farming spread at all? Most of these theories answer this question as farming makes life easier, or it provides genetic advantage to those who practice it. However, memetics has quite different answer: farming spread because the farming memes are good replicators.

If there is no second replicator, then everything automatically must come back to genes or to biological advantages. Sociobiology, biology, and evolutionary psychology reduce every human phenomenon to biology, and do not clarify how culture supervenes on biology. Obviously, these three reductionist stances cannot manage to embrace all human world in its complexity, extremeness, and multiplicity. At that point memetics offers second replicator in order to stave off the obsession with biological advantage.

Lamarckianism believes that acquired skill from the environment is transferred to the other generations, thus Lamarckian explanations of culture depends on environmental changes of human behavior. Sociobiology developed by Edward O. Wilson (1980), which studies genetic and evolutionary basis of human behavior made great progress in explaining culture with genes. Wilson introduced the concept of the 'culturgen' as "the basic unit of inheritance in cultural evolution" (Lumsden and Wilson 1981, p. x). However, they always came back to the genes as the final arbiters. Ultimately, the genes will win out. As they put it – "the genes hold culture on a leash" (Blackmore, 1999, p. 33). However, according to memetics, "the genes may turn into a dog and the memes become the owner, each running like mad to serve their own selfish

replicator" (Blackmore, 1999, p. 33).

Each replicator works for its own agenda. Both are able to evolve successfully within their respective attribute spaces. To a large degree they co-evolved in evolutionary history, but sometimes this co-operation is broken in favor of memes. The effects of memes' more rapid rate of evolution in comparison to those of genes compel genes to change. Memes sometimes have a significantly detrimental effect on the evolution of genes. "As the comparative rate of meme evolution increases, such that if genes cannot effectively select memes a high percentage of the time, they suffer from meme evolution as if they had almost no selective capability" (Holland & Blackmore, 2000, p. 227).

Memes can create selection pressure on genes by changing selective environments. In that process, we can use Baldwin Effect, which explained above, claims new acquired skills provide a higher chance to those individuals who can imitate, hence those who are successful in learning get more change to survive in relation to the other.

However, unlike Dennet, Blackmore says the Baldwin Effect is not sufficient to explain the relation of genes and memes. She accepts that the Baldwin Effect may be explanatory in some cases, but, memes can operate without establishing a relationship with genes. To give Blackmore's own example, suppose that there are a dozen different basket types around that compete with each other for imitation. Now it is important for any individual to choose the right basket to copy, but which is that? If we look at this issue from genes' point of view it probably has to be the biggest, strongest, or easiest one. But, from the memes' point of view the answer may be the flashy one. The more flashy looking basket may be chosen for copying, so baskets that exploit the current copying tendencies spread at the expense of those that do not. (Blackmore, 2001) This process is not quite the same as traditional gene-culture evolution or the Baldwin effect. Blackmore (2001) explains:

> The baskets are not just aspects of culture that have appeared by accident and may or may not be maladaptive for the genes of their carriers. They are evolving systems in their own right, with replicators whose selfish interests play a role in

the outcome (p. 245).

Blackmore uses here Dennett's question *Cui Bono?* which means for whose benefit? As it was explained, memes and genes struggle for their own benefit, in deed many times they cooperate, but sometimes they contradict and "memes hold genes an on a leash". She puts it directly:

> This comes to the heart of the issue. For me, as for Dawkins and Dennett, memetic evolution means that people are different. Their ability to imitate creates a second replicator that acts in its own interests and can produce behavior that is memetically adaptive but biologically maladaptive (Blackmore, 1999, p. 35).

Well, who is this potent entity that can overwhelm even genes and make humans special among other creatures. What is a meme for Blackmore?

2.4. Imitation: Crucial Point for Defining Memes

Although there are controversies on what is a meme, Blackmore always sticks to the first definition of Dawkins mentioned above instruction for carrying out behavior, stored in brains (or other objects) and passed by imitation. (Dawkins, 1976, p. 192), and Oxford English Dictionary's definition: "An element of a culture that may be considered to be passed on by non- genetic means, esp. imitation". Blackmore (1999) explicitly defines "a meme is that whatever it is that passed on by imitation" (p. 43).

As it can be understood imitation is what makes the meme replicator and gives it its replicator power. The crucial point to understand Blackmore's memetic approach depends on perceiving what is imitation. For her, it can simply be put like this: "Imitation includes any kind of copying of ideas and behaviors from one person to another" (Blackmore, 1999, p. 43). The definition is evident, yet not easy to comprehend. Blackmore uses a geometrical method, that is, she starts with very simple definitions and deduce everything from these evident notions. Then, she elucidates her definition deeper and gives us some requirements to count something as an imitation. She counts three essential features to regard a thing as imitation, so an imitation necessarily involves:

1) Decision about what to imitate or what counts as 'the same or similar'
2) Complex transformation from one point of view to another
3) The production of matching bodily actions (Blackmore, 1999, 43).

Thus, imitation is rare and special and all that is copied is not imitation. For example, perceptual experience itself is not transmissible; therefore it does not involve memes. In classical conditioning and operant conditioning, some aspect of the environment has been copied into the brain, but it stops with that brain and, cannot be passed on. Besides, in Skinnerian learning, parents shape their children's behavior by the way they reinforce them, thus there is no decision about what to imitate and Skinnerian learning cannot be counted as memetics. Many experiences belong to us, which are transferable cannot be able treated in the scope of memetics. Our emotions also are private, thus, not suitable for imitation. Contagion also is not true imitation. Yawning,

coughing, laughing are contagious behaviors, but these acts are not imitation, because we have not learned how to do this act (Blackmore, 2011). Blackmore clarifies the definition of imitation by quoting Heyes:

> Imitation is learning something about the form of behavior through observing others, while social learning is learning about the environment through observing others (Heyes 1993, p. 1000).

Genuine imitation is unique to humans or as Blackmore puts it more strongly what make us human is imitation. She overtly claims "to be human is to imitate". (Blackmore, 2007, p.1) Nevertheless, it should be noted that there might be a competitor that can possibly unseat our unique position among beings. Because according to Blackmore a third replicator has truly arrived. She puts its name *temes* (technological-memes), that is, "it is digital information competing for space in giant servers and electronic networks, copied by extremely high fidelity electronic processes. If temes will become successful over memes and genes, this would change everything" (Blackmore, 2009, p. 137). Blackmore (2009b) claims that today some computer programs can copy the information dependent on human input, but in a near future the third replicator, which will replicate in digital mediums, would gain its own independence, and a third phase in evolution would be opened up. But let us return to our topic, second replicators: memes. The ability of imitation belongs to human kind and this ability provides human the capacity of extensive memetic transformation. Memetic capacity makes humans special among other creatures. What is the distinctive feature of human being is neither language nor self-consciousness, but it is in the essence the capacity of imitation, that is, the capacity of meme transmission.

2.5. What is Copying in Imitation?: Copy-the-product or copy-the instruction

The genes are coded in DNA and stored in pairs of chromosomes in every cell of one's body. The total make up of genes in one individual is called his genotype. Correspondingly, the various characteristics of a final person, which depend on genes, are known as the phenotype. Genes do not design every detail of the final body, they only provide instruction for building proteins and these proteins supply a hard-wired mechanism, by means of neurons, for the brain, but individuals are made up of the numerous different environmental and social interactions. For example, genes give instruction for building proteins and they build neurons that provide a hard-wired system for your brain. But you learn playing chess, and this is not caused by genes. Playing chess is a phenotypic feature, which cannot affect your genes and hereditary character in biological sense.

However, when it comes to cultural evolution, the distinction between phenotype and genotype becomes blurred. In this case acquired skills are passed on, but Blackmore claims that transmitting acquired skills in cultural evolution does not mean that cultural evolution should be classified as Lamarckian. She explains this with an example:

> If I invent a brilliant new recipe for pumpkin soup, I can pass it on to you and you can pass it on to your granny and she can pass it on to her best friend. Also, this is not inheritance in the biological sense and the genes are not affected. So it is not Lamarckian (Blackmore, 1999, p. 43)

If you watch me while I am making the soup, the meme of soup or the recipe goes from my brain to my behavior in the kitchen and on to the next brain, and if you give this recipe to your granny it would transmit to another brain. There is no inheritance of acquired characteristic. It can be said that the meme in my brain is the equivalent of the genotype and my behavior in the kitchen is the equivalent of the phenotype. But if we do not see how one make this soup and just have a recipe, then situation become quite different. The written recipe is like the genotype, it contains the instructions for making the soup. The soup is like the phenotype. In this case the process is perfectly analogous

to the biological situation and is not Lamarckian.

Therefore, we should not ask, what is genotypic and what is phenotypic in cultural evolution, or what is memotype and phemotype, because it changes depending on the case. What seem like genotype in one-example turns into phenotype in other instance, because memes have no stable storage, unlike genes. So, Blackmore (1999) offers that we should take into account copy-the-product and copy-the-instruction distinction, instead of asking what is the genotype in cultural information and what is the phenotype. If you repeat all of my behaviors that I represent while I was making the soup, you will re-produce the product (soup), this is the copy-the-product, and if you observe my behaviors or learn it by recipe, you can reproduce the product (soup), this is copy-the-instruction. Each case can be evaluated as imitation but the copy-the-product is likely to be better if he works from a recipe.

The distinction between reproduction and replication of behaviors is useful here. "You could say that in other forms of social learning the same behavior is apparently reproduced (such as washing sweet potatoes or pecking at milk bottle tops), but it is not replicated—that is, copied" (Blackmore, 2000, p. 27). This kind of copying is a direct copying, which does not allow any variation to flourishing evolutionary change. Another individual mirrors the same bodily behavior in a one-to-one mode. However, this mode of copying cannot meet the requirements of a replicator, so, they cannot be used in evolutionary processes.

Either by copying a product or by copying an instruction, a form of behavior is passed on by observing the others or learning from the others. Information that passed on by copying something is a meme. Blackmore (1999) explicitly puts that "when we copy each other something, however intangible, is passed on, and that something is meme" (p. 52). Understanding genuine imitation and seeing culture in this perspective means taking meme's eye view.

2.6. Technical Problems with Memes

A meme's eye view may explain a good deal of the elusiveness, but still there are some vexing problems for memes. First and foremost one can ask do memes really exist? What is the copying mechanism of memes and where are they stored?

Susan Blackmore, in a pragmatic manner, circumvents these hard problems, and justifies memetics by claiming it is so nascent to cope with these problems and reminds us how other successful theories can operate in history without answering these problems. She says: "Memes have not long history behind them. The new replicator is, as Dawkins puts is, "still drifting clumsily about in its primeval soup... the soup of human culture" (Blackmore, 2001, p. 248). For example, we can recall how far evolutionary theory got before DNA was not even heard of. *The Origin of the Species* published in 1859. It was not until the 1930s that genetics and natural selection were brought together, but the structure of DNA was discovered until 1950s. "In the first century of Darwinism an enormous amount was achieved in the understanding of evolution without anyone having any idea about chemical replication, the control of protein synthesis or what on earth DNA was doing" (Blackmore, 1999, p. 56). Thus, memetics can progress without deeply understanding where memes are coded and stored in the brain and what is its mechanism.

The other problem with memes is the fact that memes are out of trim in contrast to genes, which are stored in chromosomes in highly digitalized form. The answer of Blackmore to this objection is that digital systems can support evolution, however, there is no law that says that evolution has to be digitally based. Also, genes are too old but, memes relatively new in evolutionary scene, so that genes find its way to digitalization, and gradually memes are digitalizing too.

Blackmore (1999) also handles the problem of specifying the unit of a meme. She again says there is no answer of this question and refers to other science's progress.

> I have heard people dismiss the whole idea of memetics on the grounds that "you can't even say what the unit of a meme is". Well that is true, I cannot. And I do not think it is necessary. A replicator does not have to come neatly parceled up in

> ready-labeled units. Since genes are our most familiar example we should look at the same issue for them. The intrinsic uncertainty about just what to count as a gene has not impeded progress in genetics and biology. It has not made people say, "We cannot decide what the unit of the gene is so let's abandon genetics, biology and evolution" (p. 53-54).

Memetics is also accused of being Lamarckian, which depends on the inheritance of acquired characteristics. That is, "if you learn something or undergo some change during your lifetime, you can pass it on to your offspring. Lamarckism (in this sense) is not true of biological evolution, at least in sexually reproducing species" (Blackmore, 1999, 58). As I had explained in the discussion of the copying mechanism above, in biology, permutation of genes in a gene string is called a genotype and various characteristics of a final person is known as a phenotype. Phenotypes depend on genotypes but it cannot completely determine every nook and cranny of phenotype. But phenotypes cannot impinge on genotypes. Environmental changes occur in the phenotypic sphere, thus they cannot pass on to other generations via biological methods. But, memes do not stick to biological generations and can jump about all over the place. Blackmore (1999) gives an example to disprove the accusations of Lamarckianism.

> If I invent a brilliant new recipe for pumpkin soup, I can pass it on to you and you can pass it on to your granny and she can pass it on to her best friend. Also, this is not inheritance in the biological sense and the genes are not affected. So it is not Lamarckian (p. 58).

This leads to Blackmore's important distinction. She discriminates two form of copying: 'copy-the-instructions' and 'copy-the-product'. In the biological world, sexual species work by copying-the-instructions. The genes are the instructions that are copied; the phenotype is the result and is not copied. Likewise, the recipe of soup is instruction and one cup of soup is a product. If you copy just the making one can of soup, you could not make it another time, and could not propagate soup memes, but if you imitate recipe then you can broadcast it others. "Copying product and instruction can be seen as a method of transmission of cultural information and two of them work without effecting genes, hence, the memetic transmission has nothing to do with Lamarckianism" (p. 58).

According to Blackmore, This instruction-product distinction can solve a controversial theme among memeticists. Some of them regard ideas and mental phenomenon as genotype for memes and artifact as phenotypes, in contrast some others assert that artifacts and behaviors are true genotypes and their mental representations are genotype. The former stance can be called as mentalists and the latter behaviorists. For Blackmore "that is a redundant discussion, because if they appreciate the difference between 'copy-the-instructions' and 'copy-the-product', all dissidences would be solved" (p. 64).

2.7. The Problems To Which Memetics Offers Solutions

In the large part of her book, Blackmore tries to point out how memetics can explain some unexplained scientific and philosophical problems. As mentioned above, she circumvents to respond to some technical problems that memetics has to face, but she choose to show us how memetics can be a panacea for all our perennial problems. Interestingly, Susan Blackmore can solve these age-old issues in a few pages with her memes' eye-view. Some of these miracles will be cited in following.

2.7.1. Why we have big brains

Our brain is too big if it is compared with other primates. This extreme kind of bigness causes a problem for evolutionary explanation, because, in a certain time in evolutionary process our ancestor's brain became three time bigger than other kin. Blackmore (1999) instantiates it as such:

> The modern human brain has a volume of about 1350 cubic centimeters. A common way of comparing brain sizes is to use the 'encephalisation quotient', which compares a given animal's brain-to-body ratio with the average for a group of animals. Our encephalisation quotient compared with other primates is 3. Our brains are far too large for our bodies (p. 68).

The brain exploits a great deal of energy and evolution does not waste energy for no reason. As Pinker (1994) puts it "Why would evolution ever have selected for sheer bigness of brain, that bulbous, metabolically greedy organ?... Any selection on brain size itself would surely have favored the pinhead" (p. 363). Further, building a brain is too expensive and dangerous to produce. Moreover, some parts of brain are overdeveloped. As Blackmore (1999) displays:

> Although we are highly visual animals our visual cortex (at the very back of the brain) is relatively small while the prefrontal cortex, at the very front, is most enlarged. The frontal cortex is itself a kind of mystery. There is no clear answer to the question 'What does the frontal cortex do?' We cannot find out why our large brains evolved by appealing to the function of the part that was enlarged the most. Apart from the massive increase in the frontal lobes, the brain has been

reorganized in other ways. For example, there are two main cortical areas that are critical for language, Broca's area, which is responsible for speech production, and Wernicke's area, which is responsible for language understanding (p. 68).

There are some theories that seek to account for the mystery of big brains. They can be summarized:

1) Some physical requirement for using technology lead us to have a big brain

2) We need a cognitive map to find food and so brain evolved

3) Machivellist intelligence: Humans have to understand the others feelings and plans in order to live socially and this is the cause of big brain's evolution

4) Social interactions stipulate always-ready energy and this requirement made brain larger.

Susan Blackmore (1999) offers a memetic solution. She suggests that selection pressure created by memes produced a massive increase in brain size. "The arrival of imitation or memes changes the environment in which genes were selected thanks to the Baldwin Effect and the direction of change was determined by the outcome of memetic selection" (p. 74). Memetic selection for big brains operates in these steps:

1) Selection for imitation: imitation contributes to survival of individuals, good imitator would be also good at copying skill for survival; hence genes for being a good imitator will begin to spread in gene pool.

2) Selection for imitating the imitators: if imitation provide benefits for survival, the best imitator gets a chance to live, that is selection supports to best imitators, thus individuals are compelled to imitate what is new.

3) Selection for mating with the best imitators: if you mate with the best imitators, your offspring would be the best imitator, thus genes for being imitator again spread in gene-pool

4) Sexual selection for imitation: individuals would want to mate with good imitators because they are more successful

Thus, the main tasks of our larger brains are first, generally being a good imitator, secondly finding who are good imitators and embracing them. “Being good at imitation requires a big brain then the processes described above can explain it” (p. 80).

2.7.2. The Problem of the Origin of Language

The other problem Blackmore offers a memetic answer is the origin of language. Talking costs a great deal of our energy and it formats our body -exquisite control of breathing is needed and this meant changes in the muscles of the diaphragm and chest-, that may be disadvantageous for survival of humankind. Why, then, has evolution produced creatures that talk whenever they get the chance? Possible answers of this question:

1) A biological explanation: cementing social bonds or exchanging useful information

2) A sociobiological explanation: with the evolution of language, culture has somehow got temporarily out of hand; it is a deviation from genetic determinism
3) An evolutionary psychological explanation: all this talking once had advantages for the survival of our ancestors, our body and physical structure was formed in accordance with talking, even though today, it doesn't benefit our genes any more (Blackmore, 1999).

It is obvious that all three suggestions appeal to the genetic advantages, but memetic has totally different view. Blackmore (1999) overtly puts it: "The reason we talk so much is not to benefit our genes, but to spread our memes" (p. 84). She offers a memetic explanation of so much talking:

> I shall argue that once imitation evolved and memes appeared, the memes changed the environment in which genes were selected and so forced them to provide better and better meme-spreading apparatus. In other words, the human language capacity has been meme-driven, and the function of language is to spread memes (p. 93).

Language provides a suitable medium for meme's spreading. It increases memes' replicative power, namely fidelity, fecundity, and longevity. Language certainly improves meme fecundity. How, then, could the fidelity of the copies of the sounds be

increased? By means of digitalization of sound via making discrete words instead of a continuum of sound, copying becomes more accurate. Any speech that is divided up into discrete, easily copyable sounds would have higher fidelity and hence outperform the others in the race to get copied. With regard to longevity, language makes ideas and sounds far more memorable by structuring the meanings of sounds. Language provides a good medium for memes and today all proliferous communicative technologies (telephones, internet, network systems, TV) is directed to the task of spreading memes in a twinkling. As it can be understood, Blackmore has a memetic solution to the mystery of the origin of language. Blackmore (1999) summarizes the memetic story of the genesis of language:

> Once imitation evolved, something like two and a half or three million years ago, a second replicator, the meme, was born. As people began to copy each other the highest-quality memes did the best – that is those with high fidelity, fecundity and longevity. The early speakers of this language not only copied the best speakers in their society but also mated with them, creating natural selection pressures on the genes to produce brains that were ever better and better at spreading the new memes. In this way, the memes and genes coevolved to produce just one species with the extraordinary properties of a large brain and language. The only essential step to starting this process was the beginning of imitation. The general principles of evolution are enough to account for the rest (p. 107).

2.7.3.The Problem of Diversity of Sexual Behavior In Modern Times

Human sexuality is another intriguing matter to fathom in its complexity. Our sexuality does not always maximize our genetic legacy and we no longer make sex in order to find fittest genes for our offspring. Blackmore says that sociobiology, biology and evolutionary psychology insist that our sexual behavior is genetic-driven and birth control or homosexuality is a mistake, a deviation because genes could not anticipate how we would use our intelligence. In contrast, Blackmore with memes eye view asserts that modern sexual behavior is meme-driven. In fact, our basic desires and instincts were formed by genes, but generally memes drive our genetic desires. People would like to make sex according to ideas surrounding them, such as fantasies, medical directions, images, and rumors.

According to Blackmore (1999), memes may spread both vertically (across generations) and horizontally (among peers). The mode of transmission is important because it affects the relationship between genes and memes. When memes are transmitted vertically this means that genes and memes spread together, that is what benefits one also benefits the other. However, when it transmitted horizontally, "memes can travel quite independently of the genes" (p. 133). An idea passed from one person to another within one generation regardless of how untrue, unreasonable or dangerously addictive the habits are. Blackmore claims, "Only horizontal transmission makes memes really independent of genes and modern industrialized life is a world of horizontal transmission" (p. 133). This horizontal transmission can explain why modern sexual behavior is out of the control of genes. Celibacy is a consequence of spreading of religious memes and it is truly harmful to genes. Birth control and adoption are other examples, which are controlled by memes to the detriment of genes, because the two example terminate genes' spreading.

In modern life also family size decreases because of feminist memes propagate swiftly. A modern woman has to deal with a bombardment of memes. For example, an academic woman has to follow new books, new technologies of her field, and has to produce articles. This may take her a considerable part of her time, in which she could

have spread her genes. But, academic women would have a reputation among others and can affect more people, also she can talk and write her own memes, hence her memes would dominate the meme pool in the society, gradually the idea of becoming hard-working women and having fewer children diffuse throughout the whole society and family size would shrink. The natural culmination of this childlessness might lead to extinction of humankind. Nevertheless, genes have given us a powerful desire to have and care for children, so that, "birth rates in modern meme-driven societies will stabilize at some level that balances the genetically created desire for children against the memetically created desire to spread memes more than genes" (Blackmore, 1999, p. 142).

Interestingly, Blackmore follows above-mentioned track of thought and suggests that those people whose life allows them to spread more memes than others would be more sexually attractive than others. If one considers who seems sexually attractive or desirable today, it can be seen that those who has more capacity to meme transmission than ordinary people, namely, film stars, intellectuals, musicians, writers etc. They have a common quality that they are good imitators. Thus, today memes still design our sexual desires. In short, for Blackmore (1999), "if we examine modern sexual behavior, we see that sex is a wonderful world for the proliferation, control, and manipulation of memes" (p. 144).

2.7.4. The Problem of Darwinian Explanation of Altruism

There is also a vexing problem for Darwinism to which memetics offers a recipe. How can we explain the pure, disinterested altruism in accordance with natural selection, because "natural selection is ruthless and the cost of this kind of generosity could be very high indeed" (p. 153). Thus, according to the theory of selfish genes there should be no altruism, all gene machines fight for their own survival, and selfish memes must also do so. But disinterested altruism, which is seen as a transcendent dimension of human beings, is a very familiar phenomenon in most of the culture; this interesting issue afflicted the theory of evolution.

However, scientists try to give some possible explanations to the case of pure altruism. For biology and sociobiology, helping our kin means protection of our genes. Altruistic behaviors are also supported by society and they give to the altruist a reputation and a better chance in sexual selection. Nevertheless, people sometimes aid to those who have no relationship to them. A Turkish person can help to an Ethiopian who has no shared relative genes between them. Reputation is also controversial, because most of the time grantor says nothing about the benevolence. Giving blood is a good example of that, because in this case most of the time the donator cannot know for whom his blood is used. Also some people construct homes for dogs and cats, for nothing but the sake of charity. They have no shared genes, no reward, but they do this.

Apart from sociobiology, evolutionary psychology might argue that our emotional system was designed for hunter-gatherer's way of life, in which every aid could turn you because of its small scale, but this open-handedness goes wrong in our technological society. Contrary to above-mentioned accounts, Blackmore (1999) gives a memetic solution to altruism.

> The essential memetic point is this – if people are altruistic they become popular, because they are popular they are copied, and because they are copied their memes spread more widely than the memes of not-so-altruistic people, including the altruistic memes themselves. This provides a mechanism for spreading altruistic behavior (p. 155).

Since it has risky costs, altruism seems no longer adaptable to evolutionary theory at first glance, the pressure for spreading altruistic memes manage to make altruism prevalent. So much so that memes for altruism are an important part of the meme transmission. An altruistic person would be more social than others, he would have more friends, others would like him, and he would have more influence in society; thus, his memes could be scattered to the community. Blackmore (1999) calls these altruist people a meme-fountain. A certain kind of reputation makes meme transmission more easy, by which meme-fountains can pour their memes into meme pool. But in same cases, such as blood giving, or potlatch, in which no one can gain advantages, we see that individuals copy their tradition regardless of its content. " Note also that potlatch depends upon imitation" (p. 159).

Blackmore knowingly undertakes risky tasks in her presentation and displays how untrue or useless ideas spreads even in our modern society. She courageously claims that memetics can help explaining the spread of even untrue, bizarre, or harmful ideas such as abduction by aliens, near death experiences, coming of doomsday according to Mayan calendars and so on so forth. These superstitions can be seen as examples of memeplex.

2.8. Memeplexes: Religion and the Problem of Self is Explained

When a group of memes cooperate in order to better survive, they constitute a memeplex. “In a purely informational sense a memeplex can be imagined as having a kind of boundary or filter that divides it from the outside world” (Blackmore, 1999, p. 231). Memeplexes can be more successful than individual memes, because they would be harder to overcome, and their spreading chance increases because whenever one particular meme of this group is imitated, the other sorts of memeplex seep into meme pool. Blackmore, in agreement with Dawkins and Dennett, alleges that religions are perfect example of memeplexes. This memeplex uses lots of “good tricks” in order to survive. For example let me examine the success of Islam memetically with reference to Blackmore. The reasons why Islam became a triumphant memeplex might be count as such:

1) Islam commends that Muslims should announce Islam, so Muslims work hard to spread their Islamic beliefs. Muslims willingly devote their time to maintaining and spreading the faith.

2) Islam insists on the protection of kinship and this pave the way for vertical transmission of memes.

3) Islam advises some useful rules for living such as cleanliness and hygiene that may protect people from disease. These useful functions helps to carry other memes along

4) Islam uses some “good tricks” to spread. Like many religions, Islam use God and Truth as virtually synonymous.

5) Beauty is another trick to help it to reproduce.

6) Islamic belief diffuses into logic, science, and philosophy in tradition and they carry that belief.

7) Islam advises altruism, and many believers are indeed good people who gain the admiration of society, so people are more inclined to imitate them. In this

way religious memes can spread with this honest behavior.

8) Another factor is marker scheme that is the principle of "Be good to those who act like you". For instance turban is a mark, and those who wear turban will help the other. Hence, people tend to act kindly in-group not outsiders. "This boosts the well-being of the group's members and hence makes them more likely to be imitated, and so pass on the faith" (Blackmore, 1999,191).

9) Islam's memes are very protected. Islam positively encourages the punishment to those who assault to Islamic society or overtly denouncing Islamic belief.

10) Great religious text are stored, and thus given improved longevity. Old-age belief and that of being a sound tradition support credibility of faith

11) Islam is more aggressive and negates other gods in contrast to some other Eastern religions, this kind of well-defined belief can protect itself more than amorphous ones.

12) Islam also uses political authority to bring other memes on their knees.

13) Genes for religious behavior would increase in society because of religious memes. Pious acts may help to find a good mate and so those genes inclined to be more pious will also spread.

Some other reasons can be rehearsed but it is enough to show that triumph of Islam can be explain memetically. As Blackmore (1999) recapitulates it:

> When we look at religions from a meme's eye view we can understand why they have been so successful. They were just behaviors, ideas and stories that were copied from one person to another in the long history of human attempts to understand the world. They were successful because they happened to come together into mutually supportive gangs that included all the right tricks to keep them safely stored in millions of brains, books and buildings, and repeatedly passed on to more. They evoked strong emotions and strange experiences. They

> provided myths to answer real questions and the myths were protected by testability, threats, and promises. They created and then reduced fear to create compliance, and they used the beauty, truth and altruism tricks to help their spread. That is why they are still with us, and why millions of people's behavior is routinely controlled by ideas that are either false or completely untestable. No one designed these great faiths with all their clever tricks. Rather, they evolved gradually by memetic selection (pp. 192-193).

Blackmore falsifies Dawkins's positivist position on the rift between religion and science, and claims that science has no superior position among other memeplexes.

> Science, like religion, is a mass of memeplexes. There are theories and hypotheses, methodologies and experimental paradigms, intellectual traditions and long-standing false dichotomies. Science is not "The Ultimate Truth" any more than any other memeplex (p. 202).

At the end of her book, Blackmore make her most heady thesis, that is, the ideas such as self and substance which occupy pivotal position in philosophy, are just other kind of memeplexes. The matter of "self", especially in current times, become a daunting task among thinkers, and many debates has been carried out around this elusive problem. Most prominent philosophers and neuro-scientists of our times such as Karl Popper, William James, Roger Penrose, Stuart Hameroff, Francis Crick, George Northoff, Antonio Damasio, Patricia Churchlan, Galen Strawson, V.S. Ramachandran so on, discussing on the concept of self and they have been developing many theories to overcome this mystery (Northoff, 2011).

There are a myriad of theories on the constitution of the sense of self. It is described as an outcome of interaction of synapses, or a state springs from operations in tiny microtubules inside the membranes of neurons at a quantum level, or identifying with whole brain, whole body or our memories and personality, or else as a pack of neurons, or as a social construction or effects of discourse, and so forth. However, the memetics approach offers a solution to this conundrum from very different perspective:

> Memetics provides a new way of looking at the self. The self is a vast memeplex – perhaps the most insidious and pervasive memeplex of all. I shall call it the 'selfplex'. The selfplex permeates all our experience and all our thinking so that we are unable to see it clearly for what it is – a bunch of memes. It comes about because our brains provide the ideal machinery on which to construct it, and our society provides the selective environment in which it thrives (Blackmore, 1999, p. 231).

Memes exploit the idea of self as a trick for Blackmore. In order to understand this, an example can be useful. For instance, the idea that "Kurds must have equal right with Turks in Turkey" is an abstract meme and has limited power to be successful. But, when it gets the form of "I believe Kurds deserves equal rights with Turks in Turkey", it immediately bears the enormous weight of "self". Here, the abstract idea that Kurds and Turks must have equal rights internalize, any argument against this idea would be considered as a threat for the existence of the bearer of that idea. The concept of self provides a safe shelter for memes, even if it seems bizarre to common sense. Once ideas can get the chance of personalization in a certain self, than it can simple be spread among individuals. Thus, according to Blackmore the idea of self is an outcome of the tricky play of selfish memes.

> Human-like consciousness is an illusion; that is, it exists but is not what it appears to be. The illusion that we are a conscious self having a stream of experiences is constructed when memes compete for replication by human hosts. Some memes survive by being promoted as personal beliefs, desires, opinions and possessions, leading to the formation of a memeplex (or selfplex) (Blackmore, 2003, p. 19).

As it can be seen Blackmore considers the experience of self as an illusion. For her, this misconception of self is made by infinite plays of memes. She claims, "the self cannot be what it appears to be" (Blackmore, 1999b, p. 44). We believe there is an inner "me" who make my decisions and who lives my life, but if we look inside a brain, we can see that there is no central place into which all the impressions come from and from where the orders go out, rather there is a massive processing system dealing with numerous things at once. She also claims, depending on Dennett's account, that brains

build multiple drafts of what is happening as information flows through its parallel networks and one of these drafts, and one of these drafts become the story of ourselves. Hence, the idea of self, has no essence, it is not permanent but ever changing. Thus, in reality there is no self, it is just a "benign user illusion" of the consciousness machine.

Blackmore boldly stresses that; consciousness itself cannot be reduced to memes. She rejects the claim of Dennett who says, "Human consciousness is itself a huge complex of memes" (Dennett, 1991, p. 210), because this implies that if a person were without memes they would not be consciousness. Blackmore gives example of meditation, by which all ideas and learned things faded away temporarily, in order to show there is a conscious state without memes.

> If this experience (like meditation) can justifiably be thought of as consciousness without memes, then there is something left when the memes are gone and Dennett is wrong that consciousness is the memes. It might then be better to say that the ordinary human illusion of consciousness is a "complex of memes" but that there are other kinds of consciousness (Blackmore, 2003, p. 26).

For Blackmore, unlike Dennett, memes do not constitute consciousness but rather, they distort consciousness into an illusion of self. Memes create the illusion of self for their own survival and replication, this leads to imagine a false sense that there supposes to be always an 'I' inside me. This imaginary sense of self causes the phenomena, what Dennett called Cartesian Dualism, that is there is actions, sayings, bodies and apart from that, there is 'me' inside my body which rules everything. For Blackmore, this imaginary distortion bedevils all our attempts to understand consciousness.

Thus, she suggests that memes can gain an advantage by becoming associated with a person's concept of self. The self does nothing but is a sheltering haven for memes. Here, again Susan Blackmore did not elucidate the questions that: what is the mechanism (neural or something else) used by memes that create the a sense of self, or why some ideas can manage to be taken under the auspices of "self" and others can not, when and in which process did this sense of self emerged? For her, these are retarding questions that we should rapidly jump over. She also claims that human's imagination

and creativity depends on memes. For her, the driving force behind human creativity is not consciousness, but the evolutionary algorithm. (Blackmore, 2007b)

Susan Blackmore's ideas on memetics can be outlined as such. She has simple notions and clear logic, and can explain most of the hard problems by memes and imitation. Nevertheless, there are considerable criticisms and falsification targeting her memetic approach. Following chapter will be devoted to the critics of Susan Blackmore's memetic approach that come from inside memetics.

CHAPTER 3:

THE CRITICISMS OF SUSAN BLACKMORE'S MEMETIC APPROACH FROM WITHIN MEMETICS

The theory of memetics, and in particular Susan Blackmore's memetic approach, is criticized from different perspectives, as this could be possible for every new theory. As I mentioned above, this work consists of two parts: exposition of Susan Blackmore's memetics account with its forerunners and some possible critics of this account. In this chapter, I will handle some of this criticism from within the field of memetics. By the phrases the field of memetics or memeticists, I want to refer to those scholars or researchers who recognize the existence of memes and anticipate that memes are useful tokens for explaining the cultural sphere or those who wrote either some theoretical work or empirical studies. Social scientists, biologists, and humanists in a variety of different perspectives and fields have been dealing with memetics. There are limited number of books focusing on memetics and widely known among them are Aron Lynch's (1996) *Thought Contagion*, Richard Brodie's (1996) Virus *of the Mind*, Susan Blackmore's (1999) *Meme Machine*, Robert Aunger's (2005) *The Electric Meme*, Kate Distin's (2004) *The Selfish Meme,* and TimTyler's (2011) new book of *Memetics.* These researchers can be called as memeticists, because they wrote books exclusively on the topic of memetics. There are other researchers from diverse fields who have an interest with this subject and wrote some articles or expressed some opinions on memetics in a part of their books and also some scholars who wrote articles on the Internet published in the *Journal of Memetics.* The field of memetics is composed of *this* collection of writings and what I mean by "inside memetics" is this kind of material.

Memeticists, who seek to construct a convincing theory of memes, by definition, accept the existence of memes, and takes them for granted so their basic concerns are how those memes work and interact each other. Their problem is the epistemological

and methodological uses of memes rather than memes' ontological status. The matter of ontological reality of memes will be tackled in the fourth chapter and partially in the last section of this chapter. At stake here are the methodological and epistemological shortcomings of Susan Blackmore's memetic approach and displaying alternative approaches.

Using a distinction that has already been used in memetics literature, that is the distinction of mentalists and behaviorists, can be used to explain and chunk the diverse criticisms. However this use may have some disadvantages due to the fact that adding some extra notions from psychology to memetics that is already overshadowed by genetics may lead to make memetics more confused and we would be overloaded with unsolved problems of different areas to memetics that has substantial problems in itself. So, it should be noted that the distinction would be used here in terms of operational convenience; there is no clichéd, well-defined distinction of mentalism and behaviorism.

A matter of life and death question for memetics is: do memes really exist and if so where are their loci? Obviously the first part of the question does not cause trouble for memeticists, although there are some different understandings (Lissack, 2004) the majority of them are sure about the ontological status of memes and recognize memes as a real material entity as genes. For them memes are neither a metaphor nor a tool for modeling cultural evolution but they are material entities. The real discussion takes place when it comes to the question of where are memes stored. The problem among memeticists is this: where is the genuine locus of memes? Once the answer of this question is satisfactorily given, then the whole direction of memetics research can be determined.

If memes' locus were in observable behavior and artifacts, research must have to do with population genetics or modeling how a new behavior or a new invention spreads among populations and the rate of its popularity. If the object of concern were observable behaviors and artifacts, then the work would completely be redirected to an empirical research. However, if the mind were the homeland of memes and memes were

entities that transmitted brain-to-brain, in that case whole research field would be differentiated. We would start to seek memes in the mind or in synaptic clefts or in neurons and our research program would include cognitive science, neurobiology, and cybernetics. Although this is also a kind of empirical field of research, it is completely different from the previous one.

Adopting a mentalist or behaviorist position also determines what is to be empirically studied in memetics, that is to say whether memes can be taken as syntactical or semantical tokens. If the underlying mechanism of memetic evolution is mentalist memes become no longer syntactically classified information, rather they should be seen as semantically classified information. On the other hand, if we regard memes as artifacts, which can be studied by abstracting them from their underlying structures, then syntactical aspects of memes gain importance (Kaya, 2010).

Although this discord has a crucial importance for memetic investigation, Susan Blackmore, in line with Daniel Dennett, tries to find a midway between this dichotomy without properly solving the tension. They accept an original definition that memes reside in brains, but they also claim that artifacts can transmit memes as well. While choosing this stream, they offer no mechanism for how these two can reconcile. Especially Susan Blackmore literally brashly jumps out of these problems, rather then dealing with these kind of irksome matters, she attempts to explain in a rhetorical and pragmatic manner how memetics is a panacea for every issue. She tries to stave off these irksome issues by referring them to the future. Therefore she is subjected to both mentalist and behaviorist criticisms. For this reason, although many criticisms we will cite here are not taken directly Susan Blackmore's memetics as their target, she is challenged by these criticisms. I will examine here some of the criticisms cited in memetic literature. Before rehearsing mentalist and behaviorist stances' criticisms, it should be denoted that these stances derive from different definitions of meme. Since there are tremendously different definitions of memes it is reduced into two big categories. Almost everybody has a different definition of meme. Here we can enumerate some of them:

For Dawkins:

> A meme is the name of the new replicator, a noun that conveys the idea of a unit of cultural transmission, or a unit of imitation (Dawkins, 1976, p. 192).

Lissack (2004) defines memes as "catalytic indexical" (p. 1), which means that the replicator status is attributed here to the environmental niches.

> The memes are their representatives, symbols, or semantic indexicals of these environmental niches (Lissack, 2004, p. 2).

Odling-Smee and Laland take memes as niche constructions:

> We find compelling the psychological evidence for memes as packages of learned and socially transmitted information, stored as discrete units, chunked and aggregated into higher order knowledge structures, encoded as memory traces in interwoven complexes of neural tissue, and expressed in behavior (Odling-Smee & Laland, 2000, p. 121).

Delius defines memes as synaptic patterns that code cultural traits;

> Constellation of activated and non-activated synapses within neural memory networks" (Delius, 1991).

Wilkins describe it as:

> "The least unit of sociocultural information relative to a selection process that has favorable or unfavorable selection bias that exceeds its endogenous tendency to change" (Wilkins, 1998, p. 13).

Besides these, Aron Lynch (1991) defines memes as “memory abstractions or memory items” (p. 3); or more literally a meme is:

> A memory item, or portion of an organism's neurally-stored information, identified using the abstraction system of the observer, whose instantiation depended critically on causation by prior instantiation of the same memory item in one or more other organisms' nervous systems (Lynch, 1998, p. 9).

Durham (1991, as quoted by Blackmore) treats memes as information packages, and he does not occupy with where they stored” (Blackmore, 2001, p. 231).

According to Richard Brodie (1996)

> A meme is a unit of information in a mind whose existence influences events such that more copies of itself get created in other mind (p. 11).

Henry Plotkin (1993) writes:

> Memes are roughly equivalent to ideas or representations, that is the internal end of knowledge relationship (p. 215).

Robert Aunger (2002) defines it:

> A configuration in one node of a neuronal network that is able to induce the replication of its state in other nodes (p. 197).

As can be seen some of them describe a meme with neurons and mental representations, others use symbols, sociocultural items, or behavior for defining memes. However, Blackmore take a moderationist stance without due justification.

> Given the complexities of human life, information can be copied in myriad ways. We do a disservice to the basic concept of the meme if we try to restrict it to information residing only inside people's head. The information in this article counts as memes when it is inside my head or yours, when it is in my computer, or on the journal pages, or when it is speeding across the world in wires or bouncing off satellites, because in any of these forms it is potentially available for copying and can, therefore, take part in an evolutionary process (Blackmore, 2001, p. 233).

However, without demonstrating the reality of a meme, showing it in an observable form, treating memes as a mental entity, make the theory a fancy theory, and memetics deprived of its scientific status. So, behaviorists rightly put down the theories that attribute memes to the brain or mind.

3. 1. Behaviorist Criticisms

In one of his articles John Wilkins (1999) quotes Hilary Putnam's famous quip "meanings just ain't in the head" (p. 1). This maxim can be seen as a brief manifestation of the behaviorist stance towards memetics. Because the distinction between mentalists and behaviorist is drawn between those who think memes are in the head and those who think they ain't.

According to the behaviorist view, memes are a heterogeneous class of entities, such as formal manifestations of beliefs, behaviors, symbols, artifacts, and edifices, in short the observable things that can be examined empirically. As Gatherer (1998) boldly puts it, memes have no existence, if it is not the practice of the behavior, a manifestation of belief, a lifetime of the artifact, or the occurrence of the event. He confidently states, "The meme does not 'go anywhere' when it is not manifested. It is not stored in some neural data bank, some internal meme repository" (p. 11).

Memeticists such as William Benzon (1996) and Derek Gatherer (1998) assert that only observable phenomena can be taken as the object of study. Besides them writers such as Aron Lynch (1996) and Richard Brodie (1996) who see memes as a virus and culture as a thought contagion can be classified as behaviorists. Although there are important differences between the former and the latter, and even Gatherer (1998) seriously criticized them, it is possible to say they are behaviorists, because their primary concern is about spreading of memes across population rather than the contents, or the state of memes in the head. The social contagion thesis is:

> Sociocultural phenomena can spread through, and leap between, populations more like outbreaks of measles or chicken pox than through a process of rational choice. The evidence shows that we inherit and transmit behaviors, emotions, beliefs and religions not through rational choice but contagion (Marsden, 1998, p. 2).

As it can be understood from the titles of the books of these writers such as *Thought Contagion* or *Viruses of the Mind,* they deem memes analogous to pathogens. In this epidemiological explanation memes are just viruses that infect brains and spread in the population. Their essential concern is the transformation of information among people. As Aunger (2000) states: "The main epidemiological question is: What factors influence the distribution or relative rate of spread of 'mind viruses' in a population? (p. 8)

The mentalist and behaviorist stances divorce in their understanding of memes. While mentalists see memes as a gene (a replicator residing in a certain store), behaviorists see memes as a germ (a scattering entity that resides in no single locus). Aunger (2000) again clearly summarizes the differences between these two:

> The two schools have distinct intellectual histories, disciplinary agendas, and popular perceptions. This is largely due to the fact that epidemiology has not traditionally been concerned with the issues that are important from a theoretical evolutionary point of view, being a rather more pragmatic science with the clinical goal of curing disease. Where diffusionism primarily focuses on the spatial dimension of reproduction—or the geographical spread of a phenomenon—evolutionism focuses on the temporal dimension of reproduction—that is, on the continued existence and maintenance of a phenomenon (p. 9).

Using epidemiological terms may bring some advantages to memetic research. Epidemiological understanding of memes allows making research without any need of proving ontological status or the nature of what is exactly being spread. Marsden (1998) claims epidemiology studies the distribution and the pattern of the observable effects of infection. Likewise by taking social epidemiology as a model, memetics becomes an objective science. In epidemiology the spread of disease depends on a particular pathology and changes when this pathology varies. If memetics takes an epidemiological stance, it would get rid of the trouble of finding any particular selective mechanism for every social phenomenon. Moreover, because epidemiology may proceed independently of etiology, namely, the spread of an infection can be measured in a particular

population without knowing the reasons of the disease, an epidemiology-based memetics can proceed without waiting for any proof for the existence of memes. So, as Conte (2000) expresses it according to this hypothesis "the memes' success depends upon the mechanism and the process of transmission, rather than upon their content" (p. 88) or as it is mentioned above, the matter is syntax rather than semantic. However as Wilson (1999) warns, "we must define cultural fitness independently of what evolves" (p. 206) otherwise we fall into tautology. Claiming successful memes are those who spread in a population and answering the question which memes will spread in a population as successful memes leads us to tautology. Without defining cultural fitness per se, epidemiologic explanation is doomed to failure. It can be seen that much of the evidence used by Blackmore for convincing readers are epidemiological and have shortcomings.

On the other hand, behaviorists like Gatherer put forward that thought contagion metaphors retards memetics progress. For him, memetics must depend on population memetics, break meme-host duality and also throw off studying the spread of beliefs that are not observable. He claims:

> If we can have no *population* memetics, some might feel that there is no point in having *any* memetics. However, memetics may still be scientifically applied in other ways, and may still make a contribution to the humanities. In particular, I shall attempt to argue that memetics may be best constituted as a science by adopting a behaviorist perspective. By behaviorist, I do not mean the rigid "neo-behaviorist" tradition of Skinner, but in the broader sense of Watson. Under the terms of such a "soft" behaviorism, only observable behaviors and artifacts would be considered, and memetics would cease to concern itself with unobservable mental entities such as beliefs or thoughts (Gatherer, 1998, p. 3).

Memes, for Gatherer, are not about mental contents or representation and neural configurations, rather they are about exhibition of the same mental states, or manifestation of the same idea, or performance of the same behavior. Beliefs and desires are only defined and examined by their manifestations. One should look at "meme products" in order to make memetics an earthly science. The behaviorist approach of

meme research "provides us with information about the cultural state of our group of 100 individuals, but tells us nothing about what is going on inside their hands" (Gatherer, 1998, p. 6). On the other hand, mentalist meme research merely focuses on immeasurable and inferred events going on inside our head. Given that memetics is a theory that attempts to explain culture, regarding first approach is more plausible for Gatherer (1998).

The population memetics approach that is offered by Gatherer in order to give memetics a scientific status is regarded as "the meme as coding for meme product which may or may not contribute to the fitness of the individual that carries it." (Gatherer, 1998, p. 5) By doing so, he tries to break the virus-host or meme-vehicle or memotype-phemotype distinction that causes further troubles. Individuals here may be involved in the process of meme production, but memes are not resting latent in individuals like genes, namely, a meme does not require a carrier all the time.

Like Gatherer, Benzon (1996) thinks that memes are behaviors and artifacts that represents desires, beliefs, customs, pains etc. and that external representations can be seen replicators, because the only thing that is copying is manifested things, rather than mental abstractions. Words, numbers, notions, buildings, gadgets, tools etc. are observable objects that can be copied by others and so these have replicator status and consist of memetics' field of interest.

Apart from these approaches, there is another school in memetic debate, which ascribes the replicator status to the environmental niches and what is called, as "memes are these niches' representatives, symbols, or semantic indexicals" (Lissack, 2004, p. 1). Environmental or ecological niche means the place where an organism lives and the role that an organism has in its habitat. Memes regard as construction of adaptive niches and the definition of meme become an indexial token rather than a replicator, because the term meme is used here "as an indicator of success and change in environmental niches" (Lissack, 2004, p. 2). Leading figures in the perspective of niche construction, John Odling-Smee and Kevin N. Laland (2000) explain the basis of their approach by

claiming not starting from the concept of meme as replicator but from Dawkins' other important insight "the extended phenotype. They say:

> A closer inspection reveals that countless organisms across the breadth of all known taxonomic groups significantly modify their local environments. To varying degrees, organisms choose their own habitats, mates, and resources and construct important components of their own, and their offspring's local environments, such as nests, holes, burrows, pupal cases, paths, webs, dams, and chemical environments (Odling-Smee & Laland, 2000, p. 123).

As Richard Lewontin (1983) explains it, in his famous book *Triple Helix,* environment is not an inert medium for organisms but it is really a constitutive element in embodiment, also organisms change their environment, in short genes, organisms, and environment are interwoven dialectically. Also, the perspective of niche construction asserts that an organism not only is adept to environments but also constructs them. There are various ways for organisms to change and choose their habitats, for example constructing a beaver dam is a meme for a beaver. As such, "organisms modify their local environments through niche construction, and that selected and modified habitats and artifacts, persist, or are actively or electively 'transmitted' to descendants, as an ecological inheritance" (Odling-Smee & Laland, 2000, p. 126). For them our ancestors construct niches that include socio-cultural niches, which pave the way for better environment for communication and information transformation, and these processes provide a comfortable media for their offspring who have more advantages than others. So, humans have niche construction based memes, thus, every changing, choosing, effecting and modifying of the environment that would effect the fate of organism in evolutionary processes can be counted as a meme.

The niche construction perspective has some uses. Firstly it provides a theory for understanding the ideational, behavioral, and material component of culture and how these evolve interactively. Niche construction creates a selection pressure on genes, and ways of human niche constructions, such as information-gaining processes, languages, or art, modifies the environment in which genes and memes are selected. This is also

convenient for getting familiar with other science such as cultural evolution theories and genetics. Finally, it may free us from anthropocentric bias that deem the human as an exclusive creature among others, and it breaks the culture-nature dichotomy.

As a result taking a kind of behaviorist stance provide us with these advantages:

1) Neuroscience suggests that there is highly unlikely no replicating information structures in brains (Aunger, 2000). This fact brings mentalist memetics into discredit.
2) Behaviorist perspective gives the way for being an empirical science for memetics rather than making endless speculation without showing reliable data that leads to the empirical doldrums experienced by memetics.
3) Soft-behaviorism freed from the problem of defining what is the real meme underlying a concrete phenomena, or determining the vehicle and memes which has long plagued memeticists. It breaks meme-host/vehicle relationship since artifacts propagate independently of their producer.
4) Releasing from a mental concept that has no clear meaning and can not be demonstrated, provides memetics a chance to grow faster, also this may make it familiar with other science and theories that has been seeking to account for culture, such as evolutionary psychology, population genetics, the theory of gene-culture coevolution and sociobiology.

3.2. Mentalist Criticisms

Mentalist or meme-as-gene, stance claims that memes merely belong to brains. For them, behaviorist research programs make no contribution to understanding culture. If we would like to understand the essence of culture and the mechanisms of its reproduction, we must look at neurons, brains, or mental representations. They give importance to the psychological mechanisms and semantic contents rather than population thinking and syntactic structures. Triggered by neuroscience and new developments in consciousness studies, mentalist memetics offers some hope. But the troubles mentioned above bother mentalists. Given that Blackmore is a physiologist and deals with consciousness studies, she often uses mentalist notions in some cases but without justifying this use, like her use of behaviorists' claims.

Mentalists situate themselves to the opposite side of behaviorists. For example, Richardson and Boyd (1985) explicitly claim, "the essence of culture is encoded information rather than the behaviors that result from information" (p. 43).
Henry Plotkin (2000) also maintains culture is a manifestation of the complex and multiple intelligences of humans, and the account of culture should not be reductionist and simple-minded. For him, this aim "will be done by appealing to psychological mechanisms as the basis for a pluralistic approach to the concept of memes" (p. 70).
Another example of mentalist memetics is Castelfranchi (2001) who alleges:

> The agents' mind are the most relevant selective environment for memes. To understand cultural evolution it is necessary to identify the cognitive principles of the success or selection of memes *within mind*. Memetics can only be cognitive; otherwise it is contradictory and non-explanatory (Castelfranchi, 2001, p. 2).

For Castelfranchi, (2001) in order to attain a cognitive memetics, mental interoperations and internal representation must be placed at the center of memetic research. Agents and intelligences role in meme spreading must also explained with its

cognitive mechanism. He rejects also contagionists understanding, because "knowledge is not acquired by mere contagion, it is shared on the basis of adoption and passing" (p. 15). Sharing knowledge or diffusing a behavior is a conscious goal of an agent, rather than unintended scattering of behaviors. So, our understanding of a meme must re-conceptualize with such notions, norm adopting, intelligent agents, intentions, and complex modeling of mental processes. Cultural evolution is only explained by identifying cognitive principles for memes within mind.

Besides the ones immediately mentioned above, Rosaria Conte tries to lay the foundations of social cognitive memetic perspectives by using multi-agent based systems' modeling. She says, "by this I mean the study of the cognitive requirements for intelligent but limited autonomous agents to engage in social (inter)action" (Conte, 1999, p. 83). For Conte, memetics must be placed on a firm psychological base and cross-fertilization between agent theory, social theory and computational modeling. She boldly highlighted that memetics should necessarily restricted to intentional agents (Conte, 2000). The difference of Conte's view stems from its bringing forth to the intelligent agent who has the capacity of decision-making. Individuals are not only just meme vehicles here, but they are also meme receivers and interpreters. For her, imitation has not crucial importance in memetic transformation, because without decision-making-intelligent-agents and social interaction there would be no meme transmission. Hence, intentionality and subjectivity again came into the memetic agenda. Social cognitive approach depends on the capacity of receiving, sending, interpreting, and rejecting symbolic tokens by a limited autonomous agent. The central notion for evaluating memes into social interaction depends on norm recognition and norm-conflicts; hence social, inter-subjective dimension of memes must be taking into account (Conte, 2000). In short, she highlights some important points by showing the requirement of agent notion in memetics, but she highly psychologizes memetics, also this kind of more subjective meme definition is not congenial with the aims of memetic project.

Besides, philosopher Hans-Bernard Schmid (2004) debunks the basis depended on by the behaviorist approach. He says that physical manifestation of a sign can be different, while its underlying meaning, the meme stands unaffected. For example, the same sentence can be uttered either in Turkish or in English without substantially changing meaning. “Thus, the physicalist approach to the ontology of the meme reaches an impasse” (Schmid, 2004, p. 110). He also stresses the importance of intentionality in line with the above-mentioned writers, and claims that meaning is ontologically different from natural and artificial things. A sign has no meaning in itself without entering a relationship with somebody. In Searle’s terms signs in itself is *ontologically objective*, on the other hand meaning or memes are *ontologically subjective* or has a subjective mode of existence (Schmid, 2004).

Probably the most rigorous figure in mentalists approach is Robert Aunger. He wrote a book exclusively on memetics, *The Electric Meme*, in which he sought to give an empirical and convincing explanation of memes in the mind. He spends a laudable effort finding a real meme, which can rescue memetics from being just a speculation or science fiction, by means of bringing a vast information from diverse literature such as: biology, anthropology, quantum physics, computational science, medicine, epidemiology, and so on. Since his attempt is a good example of showing how to make science of memetics with due demonstrations and justification. This does not mean that Aunger’s claims are totally true, but his way of making memetics and his long questioning process on basic concepts, shows that Susan Blackmore is making the a rhetoric of memetics rather than making it a science. So, it is useful to explain his ideas here.

Aunger (2002) starts his book with mentioning a kind of virus-like entity called prions, which is a kind of isolated protein that produces infected proteins and has the property of replicating itself. These entities are neither bacteria nor virus, they are contagious and infectious proteins, which are the outcome of the changes in normally produced proteins of the nervous systems’ cells. Hence, in the case of prions we see the example of an entity that has no external reality, but can be observed by its effects.

According to Aunger, memetics has to specify the substrate of memes otherwise it cannot be a science. Memes must have a certain substrate, claims about substrate-neutrality is not a convenient way to make a science of memetics. Memes' locus is the brain and it is a material structure, rather than abstract knowledge. He says:

> Ideas are not immaterial. Even our thoughts and ideas are in the structure of gray matter and the form of electrical fluctuations in our brains. Changing ideas can require the expenditure of energy needed to rearrange the bits of matter. Information is a measure associated with a quality of matter. It may not be matter itself, but information is still a physical quantity (Aunger, 2002, 139).

By saying so, he would like to make measurable memes in a mentalist paradigm. Once it is put, as knowledge and is material, namely, observable and measurable, then behaviorist criticisms would become invalid.

He uses quantum mechanics for proving his idea that knowledge is material. In a phenomenon called "quantum teleportation" an object or information can be transmitted regardless of intermediate space. In this peculiar quantum state, two distinct and distant particles of matter can communicate without the aid of a mediator.

Like Darwin's question about variability in nature, Aunger wonders if there is such cases of information transferring in biological structures. By showing evidence from the discoveries of Linus Pauling, who is a quantum chemist and molecular biologist and also deeply influenced the twentieth century's science, he says transferring of information about the state of structure between two molecules is possible. Pauling demonstrated that generally large molecules can transport information about its structure, through lock-and-key manipulations to the other matter and change the confirmation of this matter into its own shape (Aunger, 2002). So here's how the new view sees information transfer. Information is *communicated* between molecules when the lock and key are differently shaped: "The lock fits into the key, and both are changed

in process. The message is the *change* in shape, not the new shape itself" (Aunger, 2002, 150).

Aunger uses the definition of information as Gregory Bateson (1972) once defined it: "what we mean by information—the elementary unit of information—is a difference which makes a difference" (p. 322). Here, biological information is not an entity, but as we have seen in the case of prions, it is a kind of knowledge of the difference that changes the configuration of other matter and made the latter same as the former. The information of difference made the other matter different, i.e. change its state.

Aunger also handles the approach of functional equivalence that is used by Blackmore. It is even possible to say that he provide the base for her notion of Universal Darwinism from which her whole theory has taken off. According to the functional equivalence idea, as long as two processes can exhibit the same input-output relationship, their intents and purpose can be seen as the same regardless of how different mechanism work inside them. The idea of substrate-neutrality comes from this principle. By applying it to the principle of replication it is concluded that the same meme can exist either in brain, on a hard-disc, or on a paper.

However, Aunger (2002) accepts that this kind of equivalence may be good for computational sciences and Turing machines, but it is not applicable for replicators that have different dynamics. He gives a clear example, "genes in cells and genes on paper are not the same thing", so replicators cannot be treated as functional devices. He writes, "If replication is always specific to one substrate, than information transfer can take place only within certain restricted kinds of circumstances. True replication involves what I will call 'structural equivalence' between the source and the copy"(p. 154).

Aunger persistently stresses the vital importance of discovering the underlying mechanism of how memes work. He criticizes Susan Blackmore, who does not deal with these hard problems and staves off these problems by referring to the future. According to Susan Blackmore mechanism would be found in the future it does not matter if we

recall how genetics could progress before the discovery of double helix model or how Darwinian theory could manage to work without supporting by mechanisms of molecular biology. Aunger finds these allegations naïve and says with sarcasm:

> The analogue to Darwin's time is faulty. Things are not the same now as then. It's rather like arguing that currently "underdeveloped" countries should go through the same process of development as occurred in the West the first time around, when the world was younger (Aunger, 2002, p. 162).

Aunger also criticizes the behaviorist stance by bringing arguments about behaviors that do not exhibit the requirements of being a replicator. Firstly, like signs, behaviors cannot duplicate. Secondly, tracing the paths of a behavior does not identify distinct evolutionary linages. Thirdly, behaviorists' obsession on observability is misguided; because "the fundamental question of evolution is how long-term dynamics play out and the fate of replicator linages" (p. 174). These evolutionary processes have long-term patterns that cannot be so readily observable. A requirement of a rough understanding of observability may cripple memetics. But there is another rigorous claim against mentalists that is the empirical impassibility of being mentalist memeticists. To respond to this challenge, Aunger embarks on a really elaborate proposal. The rest of his book is devoted to the possibility of observation of a meme inside the labyrinths of the brain.

He starts with showing a domain in which there is no gene expression at all. Changes in synaptic plasticity in which temporal and spatial rapid perspective changes occurred, no known mechanism of a gene is active. This independent condition of neuronal state provides our domain for searching memes. Aunger (2002) says:

> Here's the decisive point: Short-term mechanisms for changing neuronal states will be under natural selection because they reappear in each generation of brains. The key factor isn't what generates the mechanism in the first place but what happens to the information generated by that mechanism. A lineage of

> memetic information can be created independently of gene-produced mechanisms for storing memories, even short-term ones (p. 193).

Changing neuronal states that occur in milliseconds by the involvement of the effects of a different neuronal node may give us the wanted definition of meme. Here, Aunger suggests changing the direction of Darwinian research of culture' from gene-Darwinism of Dawkins to the Darwinism of synapses that is offered by the eminent neuroscientist Jean-Pierre Changeux (p. 194).

Therefore, the replication of a meme must occur in the context of communication with neurons. States of neurons is changed in milliseconds and what is called, as meme is this changing, so he called it a "*millisecond meme*". Electric potential in neurons can accumulate and spends rapidly, thus state of neuron can be changed and reconstructed in a tiny timescale. This kinds of understanding of memes is called by Aunger (2002) as neuromemetics:

> I therefore argue that the states of these nodes are memes. Like other replicators, memes are physical things. They are, in fact electrical things—propensities to fire-tied to the special kind of cells called neurons (but are not the neurons themselves) (p. 199).

In that account the analogy is not made between memes and genes, rather it is between prion and computer viruses, which has proven replicator status, and memes. All these replicators work with same mechanism: "a pre-existing substrate that is changed by the replication process" (p. 199). Each of them has no real elements in themselves, but has potential power that can operate in certain substrate (for example viruses uses an existing silicon substrate of a hard-disc).

Hence, meme is the name of an electrochemical state in brain's neuronal network, as a readiness-to-fire. Memes are physical in respect to that they are electrical. A meme replication occurs "when an incoming stimulus serves as the super-molecular

equivalent of catalysts for reactions during which non-infectious neuronal nodes are transformed into infectious ones through a change in their "conformations" (p. 214). What is replicated in the brain is the physical structure, rather than the representations. Because, mental representations have functions of firing patterns, they are not the structure of neuronal network, and these representations always change. Mental representations are context-dependent. Hence, memes cannot travel from brain to brain. The meme, neuronal state of readiness to fire, need a catalyzer in order to become active. Signals, signs, symbols and other entities in external world play the role of meme trigger. They are memetic phenotypes and play the role of vector or transmitter for memes. Memetic transmission through signals occurs as such:

> When a potential host comes into contact with that vector (that is, reads the text or hears the message), the meme leaps out of this vehicle (gets decoded), becoming active again, and infects the person, who becomes a new host. Then the infection phase inside the new host brain starts up. Even later, the meme may get encoded again into a suitable vector (not necessarily of the same medium it was originally decoded from), and the whole cycle begins over again. So what I will call the "jumping meme" hypothesis is that memes *themselves* traverse the gap between brains, in some form (Aunger, 2002, p. 234).

By means of this account of meme interaction Aunger accomplishes to give a logical explanation of memes' spreading. Aunger elaborates many specific details of meme replication mechanisms in his book. But we can see with the work of Aunger (2002), one who attempts to talk about memes firstly must explain the mechanism, before explaining every hard problem like Blackmore.

In these two sections, I tried to display that there is no single, accepted notion of a meme and method of making memetics. Since memetics is a novel candidate to become a science, or what Tyler (2011) says proto-science, every notion of it is open to question, so before using them one must justify their use. Taking a behaviorist or mentalist stance does not matter; obviously the two sides have different starting points,

different epistemologies, biases, and methodologies. Susan Blackmore does not choose one of them, or does not unify them in a new more reliable synthesis or even does not reject them with due arguments. The notions and methods used in memetics that are not well defined and reliable may lead to debasement of memetics as Wilkins warns, rather than serving its growth. Wilkins (1999) warns:

> The debasement of memetics by quick and easy metaphors and popularized science to serve metaphysical agenda and political ideologies, with which we are all to familiar, is just the latest instance of serious evolutionary being perverted in that way, beginning with Spencer and the Edinburgh radicals of the 1840's, through social Darwinism, "cultural evolution theories", eugenics positive and negative and so forth (p. 6).

3.3. Critiques on the Way of Transmission, or Doubts About Imitation

Susan Blackmore gives a pivotal role to imitation in her account of memetics as it is mentioned above. Blackmore (1999) says, "a meme is whatever it is that is passed on by imitation" (p. 43). A unit of imitation is equal to a unit of culture. If all of life depends on the replicators (memes and genes) power, and memes belong exclusively to the humans, then it becomes a necessity to explain all cultural facts with imitation. However, Blackmore claims that imitation is a specific mode of learning and rare, other possible kinds of transmission, such as social learning, imprinting, conditioning, direct teaching, or some of the mental representations that are not meme-based, only true imitation counts as a meme. If the two replicators rule all things, what role would other methods of transmission play in culture? If these are not memes what else can they be? There is much criticism about imitation, which Susan Blackmore's memetic approach depends. So, criticizing imitation as the only way of transmission is criticizing Susan Blackmore's approach. This section will discuss these critics.

David Hull (2002) sees the propensity of limiting memetics with only imitation is misguiding memetics. He says "limiting memetics to the study of imitation at the organismic level seems to narrow the subject matter of this science too drastically too soon" (p. 44).

Henry Plotkin (2000) also notes that imitation is only one of the form of various forms of social learning. For him, it is known, by recent studies, that, imitation is not peculiar to humans. He argues that imitation does play an important role in human culture, but it does not have a central role. For him, "people do more than imitate" (Plotkin, 2000b, p. 70). Plotkin put forward that there are different levels in cultural multiplicity. For example, the imitation of motor acts or the acquisition of a native language, or learning a way of baking cake has distinct developmental trajectories. All of them cannot be treated under the same understanding of imitation. Plotkin claims, defining a meme, as that which is passed on by imitation is an impoverishment of memetics, because of wanting to maintain copying fidelity. He makes four arguments

against this error. Firstly, if we accept Blackmore's definition of imitation it makes memetics a one-dimensional account of culture, as is done by some of the natural scientists when they try to explain culture. This definition means an oversimplification of memetics. Secondly, there is a need for the mechanism of imitation if it has such kind of importance. Thirdly, the claim that imitation has high copying fidelity and more rapid than other form of information transmission is flawed because sometimes other process of transmission may be more rapid and accurate. For example, telling someone to eat at restaurant (teaching) is more plausible way of transmission than describing it with imitation. Finally, the expectation of high copying fidelity in the case of cultural evolution the same as in biological evolution is also an error. Some other biological systems, such as the vertebrate immune system, have a changing rate of copying fidelity. Hence, Plotkin stultifies one of the constitutive figures of imitation criteria, copying fidelity (Plotkin, 2000).

Plotkin makes an important contribution to the concept of imitation through the stratification of it. For him, a monolithic position of imitation prevents us from accounting for complexities of culture. Plotkin (2000) argues that two basic kinds of meme, deep memes and surface memes, must be distinguished. Deep-level memes, the higher order of knowledge, that are acquired by every child in every culture, are the products of the long process of enculturation and integration. Native language learning and social constructions are examples of deep level memes. On the other hand, surface memes, which depend on higher order memories and knowledge structures, refers to memory organizations and thematic organization points. Knowledge of making pumpkin soup is an example of surface level memes. We all share the same higher order structures concerning what shop or school is, but we have different surface memes about which school is the best or where a certain shop is (Plotkin, 2000). He says:

> Basing a science of memetics on the single mechanism of imitation will not deliver as an explanatory basis for cultural complexity, and will lay itself open to ridicule by social scientists. Nowhere is Occam's Razor more misplaced than in a science of culture (p. 80).

Rosaria Conte (2000) also shares the same ideas with Plotkin. For here imitation is only one mechanism among other ways of transmission, which include, social learning, goal adaptation, social and norm-based influence and control, or conformity. She complains that imitation, in spite of its importance, is a "bad word" for behavioral science and no satisfactory model has been worked out so far. Conte sharply argues that Blackmore's notion of imitation, as a way of information transmission is neither necessary nor sufficient. For her imitation is unnecessary because it is a behavioral notion, but what is imitated are instructions, rules, or standards rather than behavior per se. Also, Blackmore's claim that contagious behaviors are not imitation which require novel behavior is insufficient because, there are counter examples. For example using a foreign accent unconsciously is an example of reproducing a novel behavior in novel context, but Blackmore sees this case as contagious behavior not a genuine meme (Conte, 2000). Conte denotes imitation cannot be isolated from sociality, so a mental mechanism that could explain imitation with its social aspects stipules several social cognitive capacities such as decision-making, goals, norms, or social beliefs.

Dan Sperber (2000) also points out similar points about the trouble with imitation. While Conte (2000) argues that behaviors cannot be copied, what is copied is instruction; Sperber claims that instructions cannot be imitated, they must be inferred. There must be a decoding and inference process in a certain verbal communication. In many cases of cultural interactions, the information provided by stimulus is complemented with information already available in system. So cultural transmission is not a self-acting, casual process, rather it requires the involvement of agents (Sperber, 2000). Like Plotkin's deep memes, Sperber gives the example of language acquisition. In acquiring a language a child internalizes grammar on the basis of linguistic interactions. But nowhere in this interaction present a grammar available for copying. He says:

> As Noam Chomsky has long argued, this requires a genetically determined preparedness to interpret the data in a domain-specific way and to generalize

> from it to the grammar of the language, going well beyond the information even. Imitation in some sense may well play a role—though not a sufficient one—in the acquisition of the phonology of words, but not in the acquisition of their meaning. Meaning is not something that can be obeyed and copied. It can only be inferred (Sperber, 2000, p. 172).

So, Sperber accepts that imitation has a role in culture, but he claims explaining culture in all its facets through imitation is insufficient. This Chomskian challenge is a rigorous blow to Susan Blackmore's memetic approach.

Besides, Robert Aunger (2002) also, in agreement with the above-mentioned memeticists, denotes that Blackmore's notion of imitation is ill defined and insufficient. But in contrast, for memetics to be a science based on basic sciences and neuroscience rather than such kinds of ambiguous, unproven, sociological and psychological research area.

However, perhaps Kate Distin makes the strongest criticism to Blackmore's imitation. Blackmore, following Dennet, who says artifacts are meme vehicles, uses the distinction of copy-the-product and copy-the-instruction to overcome the problem of determining the real meme and its outcome. But, Distin argues that this is not a genuine solution, since the mechanism of copy-the-product is not just an imitation. She says one cannot find relevant information to copy a thing at a glance. It is not possible to generate from an end product, information about which of its features is significant or relevant. If you are engineer and see a machine, you can know how to copy it, but if you were a layperson and see a machine, you cannot copy it. So, the engineer infers the information that is relevant. Copying the product is not a true imitation because it depends on inference. (Distin, 2004) She puts it:

> What Blackmore calls "copying-the- product" is not really a copying process at all, since here I acquire information by a process of inference from phenotypic effects to memetic content, using information that I already possess: any new

> representations that I form as a result of this process do not come from anyone else. Blackmore's distinction between copying-the-product and copying-the-instructions therefore presents no challenge at all to a cultural distinction between replicator and effect. Rather, it is an alternative way of viewing the same phenomena, and one, which manages to obscure what, is really going on. The distinction between a meme and its effects remains valid and useful (Distin, 2004, p. 95).

Distin also examines Blackmore's notion of memetic drive. She says, again following Dennett, who are best at imitating are *meme fountains*. According to her, meme fountains would have certain advantages both in memetic and genetic selection, also "if there are genes for imitating the best imitator, these genes will spread in the gene pool" (Blackmore, 1999, p. 96). However, Distin finds the argument of genes for imitating the best imitator implausible, since in this case genes should control, how to imitate, what to imitate and whom to imitate, but it is not expected that genes can manage to do such things. Moreover, the notion of "the best imitator" is ambiguous. Who can determine who is the best imitator in a certain group? Different cultures will favor the innate abilities of different people. Who is the best imitator? Is it technicians or artist or intellectual? (Distin, 2004) Distin further claims that the approach of memetic drive is flawed since memetic changes usually are swifter than genetic changes, so it is implausible that memetic selection causes a selection pressure on genes, and there would be no such mechanism of genes that support imitation.

Other than this, Blackmore says imitation is the only form of social transmission that involves true replication. Cultural information can be passed on by imitation, because culture consists of memes and memes are units of imitation. Yet, Distin (2004) asks "What about the information that we gain from reading or being thought for instance?" (p. 101) Hence, inference plays a crucial role in imitation, which means that the processes in culture are almost always reproduction rather than replication. Information is not passed by blind replication but by the inference of agents. Thus, the opposition of reproduction and replication, inference and copying, agents and machines

stems from some misunderstandings of the ways of cultural transmission. Indeed, Blackmore's imitation on which she constructs her own structure of memetics is highly problematic and may lead to a chain of mistakes.

3. 4. Anthropocentric Bias

A related problem with the troubles of imitation is Susan Blackmore's insistence on limiting meme studies exclusively to humans. For her, humans are a special kind among other creatures with their extra-ordinary capacity of imitation. This kind of conceit that distinguishes people from the universe and giving a special status to humans is a kind of general racism, which exalts only humans, insults all others, and sees almost every other tradition as flawed. Blackmore disapproves sociobiology, for example can be seen as attempt to break this bias. For Blackmore, true imitation is peculiar to only humans (Blackmore, 2001). She also states that to be human is to imitate (Blackmore, 2007, p.1). However, there are many counter arguments on this issue. In the following section, some of these arguments will be provided.

Since there is currently poor evidence for imitation in non-human animals, the definition of imitation gives way to restrict memetics to the study of human behavior. However both the definition of imitation made by Blackmore is not unique to human kind and the notion of imitation is insufficient for explaining culture. Laland and Odling-Smee suggest that imitation is not a more reliable way than other forms of learning such as social learning or local enhancement. For Blackmore imitation is different than social learning because it results in the learning of a behavior pattern, not learning about the environment or reconstructed behavior by trial error. Laland & Odling-Smee (2000) claims that this position is misguided. As Heyes (1995) puts it "when imitation result in social learning, the motor pattern is not learned, rather topographically defined behavioral elements are learned" (p. 1422). It is also shown that imitation in apes and humans does not mean copying perfectly, in every form of imitation some type of reconstruction of behavior is inevitable. So, like imitation, other forms of social learning are capable of transferring memes (Laland & Odling-Smee, 2000). Reader and Laland develop some arguments against Susan Blackmore's insistence on imitation. They argues:

Non-human animals may be poor imitators, but many are excellent social learners.

> We argue that the meme concept can, and should, be applied to animal cultural transmission. We agree that evidence for non-human animals routinely imitating is weak, but argue that imitation need not, and should not, be the defining feature of a meme. Transmission fidelity, not the psychological process underlying transmission, is a determining feature of whether a meme can spread and replicate (Reader & Laland, 1999, p. 2).

They give some examples of social learning that transmit cultural tradition without imitation. For example, once a macaque (a kind of monkey that lives in Japan) discovers to wash its potato in a river rather than brushing it, other monkeys can learn this by observing it. This trait is passed on from generation to generation. Another example is the rats, which follow a certain diet. Rats generally prefer to eat foods that others have eaten rather than alternative novel diets. So, a short-term meme for eating certain foods spread in the population, rats can learn what to eat and what to avoid eating by observing others. Another well-known and informative example is milk bottle-top opening tits in Britain. These birds learn to peck the foil on milk-bottles and open them, then eat the cream under the foil. This behavior gradually spread throughout Britain and into Continental Europe. This pattern of behavior propagates by the process of local enhancement. Thus these examples show there are numerous different forms of behavior patterns that spread among animal populations. Animals have behavioral traditions depending on acquired information transformation and also these traditions change over time in consistent with memetic evolution (Reader & Laland, 1999).

Blackmore claims that imitation is not about the environment but about behavior pattern. She says, milk bottle opening tits' behavior is not imitation, since "the tits already new how to peck; they only learned what to peck" (Blackmore, 1999, p. 49). But Susan Blackmore's example, the making of pumpkin soup, has nothing more than the behavior of tits. According to Reader and Laland:

> "The cook is simply carrying out an existing motor pattern (that of making soup) with an ingredient novel to the soup-making context but familiar in other contexts. Exactly the same logic applies to the milk-bottle-top opening birds. They are not

learning to peck any more than the tennis apprentice is learning to run around or hold rackets: that motor pattern is already part of their repertoire. They are learning to peck a particular object (the milk-bottle), found in a particular location (on a doorstep), to generate a particular consequence (the cream reward). Imitation is not a criterion upon which the meme-carrying of animals and humans can be distinguished" (Reader & Laland, 1999, p. 3).

So, memetic transmission is not limited to mere imitation. Reader and Laland (1999) give three illustrative example of cultural transmission in non-human animals, in the apes, birds, and fish, and shows that meme theory can be applied to animals. Besides them, behavioral ecologist Lee Alan Dugatkin (2000) also claims that memes may influence the behaviors of animals as they drive human behaviors, because animals can imitate, too. He gives some examples from blackbirds and apes to convince that animals also have ability of imitation.

3.5. Methodological Problems

Methodological issues are another serious problem with Susan Blackmore's memetic approach and they criticize from various aspects. As above, there is no single work that is devoted to methodological shortcomings, but I gather some bits of critiques from various articles. Discontent with memetics stems from its lack of empirical evidence and the deficiency of a sound philosophy of science.

Robert Aunger (2000) remarks "memetics is a theory without a methodology, in imminent danger of dying from lack of novel interpretations and empirical work"(quoted by Dirlam, 2003 p. 2). Although memetics has enough time to prove empirical evidence and case studies that may made it a reliable science, practically there is no all round experiment applied to memetics until now. Given that Dawkins propounded the idea of meme in 1976, memetic is comparatively to slow to progress if it is compared with its peers such as neuroscience, and cybernetics. As Marsden (1998) points out: "memetics, now over two decades old but yet to be operationalized, may be characterized as a body of theory without evidence" (p. 2). Dirlam also assumes that the fundamental crisis of memetics stems from a dearth of empirical studies. Especially, when it is considered that governments, universities and foundations support empirical works, a science without a track record has few chances to find funds (Dirlam, 2005). Further Dan Sperber (2000) writes about this point to explain cultural complexity. He says:

> Memeticists have to give empirical evidence to support the claim that, in the micro-processes of cultural transmission, elements of culture inherit all or nearly all their relevant properties from other elements of culture that they replicate (Sperber, 2000, p. 173).

As it is known, Susan Blackmore offers solutions to many hard problems such as the roots of language, the mystery of big brains or the essence of the self. However her solutions have no tangible evidence, which turned her theories into fanciful fantasies. She dares to solve the mystery of the beginning of language an issue that even eminent linguists did not dare to explain, without having any data about the science of linguistics.

What is more, Blackmore as a psychologist who follows the development in the philosophy of mind and neurology, writes on the overgrowth of brain and the sense of self, but she does this again without any proof. As Poulschock notes that there is no way to measure the memes. Blackmore (2000) suggests that "scans of brain activity could test whether the human brain has evolved to imitate and spread memes", but Poulschock (2001) objects to this for the reason that even if we accept that imitation produces most of the brain activity, there is no evidence that this activities has any effect on brain size, or we have no data about the act of imitation or whether memes leave any trace in the brain. Thus, on what basis one can says that memes underlies the mystery of big brains.

Another well-known psychologist, Gustav Jahoda complaints about the self-assurance of memeticists, regardless of their deficiency of available proof. In his response to Blackmore, he expresses his sense of dissatisfaction about Blackmore's explanation of self as distortion of consciousness and asserts that this is a kind of mind-body dualism, which means that there should be a real consciousness under the guise of a distorted one. He puts it as follows:

> I can understand neither how memes can produce a false idea of self, nor how such a false idea "distorts ordinary human consciousness". How do we know that our 'ordinary consciousness' is distorted? The answer given is that we can get rid of the "false" self and arrive at a different, underlying, kind of "ghost in the machine" exorcized by Gilbert Ryle (Jahoda, 2002b, p. 3).

Bruce Edmonds (2002) also has three challenges to memeticists in order to refer to the necessity of empirical studies. For him, if memetics would not manage to give some usable result for academics, it would be faded away in near future. He boldly puts it by referring David Hull; *"Stop talking about Memetics and start doing it"* (Edmonds, 2002, p. 2).

His first challenge is about a conclusive case study. Memeticists should show at least one cultural phenomenon that has a replicator mechanism, which must be a testable physical thing and have inheritable replication pattern with a high rate of reliability.

Further it must demonstrate explicitly why this meme survives against others and this survival must be numerically epitomized in consistence with population genetics. Secondly, memetics have to tell us when a memetic analysis is more helpful than a more traditional one. A falsifiable theory, which would have to be understandable in terms of the credibility, appropriateness and clarity of its core mechanism and verifiable by observable phenomena is a requirement. Thirdly, there should be a simulation model that can exemplify memetic process. A meme's change, its changing process and emergent memes must be designed in consistence in this simulation (Edmond, 2002). Edmond shows that memetics that seeks to attain scientific status must principally give a full-fledged empirical account. It can be explicitly inferred from these complaints memetics are in hot water with the lack of empirical evidence.

Susan Blackmore also ignores preceding works such as sociobiology or other explanations of culture. Apart from a few exceptions Blackmore displayed no awareness of those predecessors who discussed imitation in much the same way as she did. Jahoda gives some examples that give imitation as a pivotal role in their explanation such as Erasmus Darwin, William James, Gabriel Tarde, and James Burnett. Jahoda says memetics brings no new insight to the cultural development, because from the 18th century onward fundamental importance was attached to imitation by eminent thinkers (Jahoda, 2002). Nick Rose also argues that memeticists sometimes unnecessarily underestimate sociobiological explanations. She says

> Meme theory should only be applied where Occam's razor allows. A theory of cultural evolution should incorporate sociobiological findings, only calling upon the addition of cultural mechanisms where they are necessary in order to accurately describe or explain behavioral phenomena. (Rose, 1998, p. 7)

Robert Aunger, (2000) on the other hand notes the importance of delimitating of the scope of memetics. In the other words it should refer to a possible research area, then the credibility of memetics should investigate this domain otherwise it is doomed to be a free-floating chitchat.

Boyd (2001) in addition, proposes that memetics could not be conducted on one

level, a stratification among different types of memetics is a necessity. In congruent with Plotkin's distinction between deep memes and surface memes, Gary Boyd offers some changeable levels for memes, such as simple viral memes, conjugative-integrative-identi-memplexes, liberative, and scientosophic memes. It is not the point whether these categorization is apt or not, but what is important here is that the theory of memes can not be treated on a single level, it needs a stratification or methodological distinction to facilitate its task.

Finally, and the most importantly, Susan Blackmore's memetic approach does not dependent on any accepted philosophy of science, or does not brings a new philosophy. If memetics would like to be a candidate for a valid science, it should be based on a acceptable philosophy of science, or at least it has to reply to challenges from other philosophies. As Andrew Collier (1994) once puts it:

> A good part of the answer to the question "Why philosophy?" is that the alternative to philosophy is not no philosophy but bad philosophy. The "unphilosophical" person has an unconscious philosophy, which they apply in their practice- whether of science or politics or daily life (p. 17).

Hence, Susan Blackmore as well unconsciously sticks to a hidden philosophy, and this section examines which philosophy of science is relevant to her position. Each position that would be examined here has different shortcomings.

Hiram Caton (2000), in his review, argues that Blackmore's position as a kind of behaviorism. He says, in 1920's behaviorists sought to reduce all human acts to the input-output mechanisms and what Blackmore has done is a "dumbed-down" behaviorism. Memes as stimuli enter in the brain, parasitize (conditioning in behaviorist terms) it and are emitted as responses. For Caton, this account is dumber than behaviorism, because a behaviorist has a well-defined objects domain, but memeticists are even deprived of this. Memetics' dream of eliminating subjectivity can be seen as a kind of behaviorism and, as Caton (2000) states is laconically "subjectivity is robotized by genes and lobotomized memes" (p. 273). Nevertheless, memetics cannot be easily put away as a kind of naive behaviorism despite its apparent behaviorism.

From another standpoint, Popper's idea of falsifiability can be applied to the memetics of Blackmore. However as Pigliucci draws our attention, the only way to tell which memes are going to be successful is explained by waiting and seeing what happened. Although Blackmore gives us certain criteria for projecting the success of a meme (i.e., longevity, fecundity and fidelity), these can not make her free from falling into the trap of tautology and teleology. Poulschock (2001) reveals how Blackmore falls into a vicious circle:

1) The fittest memes survived and reproduced.
2) Why did these memes survive and reproduce over and against other memes?
3) They possessed more adaptive and profitable memetic traits than memes that didn't survive and reproduce.
4) How do we know that these traits were the most profitable and adaptive?
5) The memes that possessed these traits survived and reproduced (Poulschock, 2001, p. 72).

As it can be explicitly seen Blackmore's way of thinking does not provide falsifiable criteria by which we can asses its power of explanation and its competence of explaining arising fact in consistence with the current model. Blackmore sometimes forecasts some future situations, such as coming of temes (the third replicator exists in digital world) or future of motherhood, but these predictions does not depend on a scientific explanation. Probably this is an intrinsic feature of Darwinian thinking that cannot predict future facts. If Darwinian thinking is a dependable science and has certain account of the current state of humans, it should be able to project future to some extent. However, Darwinism is not essentially about future but about past, that is, it reconstructs the past in favor of current successful kinds. For example, current ecological changes would likely effect human life and probably we would produce new organs or our physical appearance would change, but from this moment we cannot manage to determine what effect the future would bring by Darwinian theory. Bergson's attempts to incorporate into Darwinism a sense of unpredictability with his notion of *élan vital* (creative vital impetus) come from these problems of teleology. Poulschock (2001) accuses memetics as using teleological language and while claiming it is doing science,

it actually is metaphysical. He says:

> Memetics is a Darwinian dysteleological theory of culture and mind that is often forced to use teleological language to describe what it claims to be non-teleological processes and events (Poulschock, 2001, p. 73).

Blackmore is not aware of the difference between methodological naturalism and metaphysical naturalism, according to Poulschock. Explaining all scientific problems by referring to natural causes and events is methodological naturalism, on the other hand metaphysical or philosophical naturalism claims that all things and mental states, emotions, and beliefs are reducible to nature, natural elements consist everything. Claiming that "we are non-free or non-rational agents" is not dependent on natural methods, that is observable by experiments, or inferred from an empirical case that is designed by naturalistic methods, instead this is a pre-empirical belief that involves explanation or a bald metaphysical statement. Poulschock straightly says: "Blackmore's universe pre-empirically supposes metaphysical naturalism, she befuddles her philosophy with science" (Poulschock, 2001, p. 73).

Taking into account Blackmore's claims on the mind and the self, eliminative materialism can be ascribed to her ideas. Rooted in Holbach's hard determinism and Hume's idea of self, eliminative materialism, which was developed by eminent philosophers such as Feyereband, Rorty, Quine, and Churchland etc. According to this naturalist philosophy "our ordinary, common-sense understanding of mind is deeply wrong and that some or all the mental states posited by common-sense do not actually exist. Namely, they say there are no mental states just brain states" (Ramsey, 2011).

Thus, it can be said that Susan Blackmore's memetic approach is not a literally scientific work; rather it is a kind of philosophy, or an elaborately concealed group of metaphysical beliefs. It has no sound methodology, no clear concept, and no genuine insights. This approach falls short in terms of being epistemological and methodological. She has not developed a new insight about where we should seek a meme, either in the brain or in an artifact, also what is the real character of memes, either semantic or syntactic. Her concept of imitation on which she constructs her theory is ambiguous and

debatable. Claiming that to be human is to imitate is just a metaphysical bias, which today cannot be supported. And last but not least, while she would like to make science, she frequently transgresses the limits of science, and in the end we see that with the arrival of temes, Blackmore reaches a kind of eschatological religion-like discourse. All these problems are caused by her lack of clear concepts and a dependable methodology. Instead of solving these problems of memetics, she choose the way in which every problem that faces humanity throughout history can be solved with just so stories in a twinkling. Although, Susan Blackmore's memetic approach is criticized within the scope of memetics, as it is asserted here, the theory can also be criticized from the outside of memetics. The following chapter will be devoted to these criticisms.

CHAPTER 4:

CRITIQUES OF SUSAN BLACKMORE'S MEMETIC APPROACH

FROM OUTSIDE OF MEMETICS: Four Possible Critiques

In the previous chapter main criticisms of Susan Blackmore from within memetics were given. In this chapter, we will connect the subject of memetics to the concerns of cultural studies, such as anthropology, the problem of culture, rhetoric, analogy, modernization, ideology, and essentialism. There are great deal of problems in Susan Blackmore's account and each of them can be handled immediately. Her naïve explanation of the notion of self, her explanation of origin and evolution of language, her claims on the future role of women in society etc. can be questioned from various point of view in social sciences. These are really important issues per se, but either because of the scope of this work, or because of incompetency in all this areas, the criticism is restricted to the theoretical points, not the technical or applied problems. Thus, it will first handle the idea of memetics, namely, explication of culture, secondly, memetics initial axioms, thirdly, its hidden ideological assumptions and the tradition in which it operates, and related to this memetics' philosophical tradition. All of these issues are not related to the one by one problems that Susan Blackmore offers, but general theoretical criticism of this memetic approach. Below, we start with the issue of culture.

4.1. Anthropological Criticism: The matter of culture

Anthropologist Adam Kuper (2000) starts his article with a challenging question: "If memes are the answer what is the question? (p. 175). Indeed, memetics contend to explain the essence and the evolution of "culture", without defining what culture is. There is no a common description for this indecisive notion, heated debates have been taking place in the entire literature of anthropology for two centuries. Memetics is social-science-blind; anthropologists have frequently made most of its claims.

It can be possible to claim that the definition of culture that memetics espouse is the 19th century's description of culture, which was put forward ad the sunset of anthropology. For Dawkins and Blackmore, culture is a universal trait that every human society has because culture is a mental capacity that every human has. This definition sounds like what British anthropologist Edward Burnet Taylor says about the meaning of culture. Taylor (1871) describe what he means by culture in his famous book *Primitive Culture:*

> Culture or Civilization, taken in its wide ethnographic sense, is that complex whole which includes knowledge, belief, art, morals, law, custom, and other capabilities and habits acquired by man as a member of a society (p. 1).

The key point here is that this description is not like Matthew Arnold's (1869) definition of culture, which is a distinguishing feature of an elite class. Instead, it is a shared property of all humans, a universal character. An opposition between biological inheritance and "acquired habits by man as a member of society" is established. Culture's essence is lies in its being unnatural, being a product of man. Culture is a general specialty that is peculiar to humans by which humankind differentiates itself from the state of nature. In addition to that, Taylor counts "diverse *units of culture* that are organized into an integrating 'complex whole,' abstracted from the conglomerate of these units" (Kronfeldner, 2011, p. 77). Hence, for Taylor, culture consists of *ideational units* (knowledge, beliefs, art, science, customs, and that kind of mental contents) that

can make a big whole, known as culture. Kuper (200) point out the resemblance between Dawkins' and Taylor's perceptions of culture:

> [Dawkins] His closest affinity is perhaps with a particular faction of English Victorian "evolutionists", which was led by E. B. Taylor. In this tradition, human culture is constituted largely by knowledge of nature, by the (consequent) ability to control nature, and by the progressive implementation of moral rules that suppress our own animal nature. This common culture is in the process of development (p. 177).

However, Arnold, Taylor or Morgan's initial description of culture as cumulative, shared mental contents that every human can reach was attacked by other anthropologists. Franz Boas and his successors such as Alfred Kroeber, Ruth Benedict, Edward Sapir, and Margaret Mead took objection to this nascent description. For Boas, every culture can be understood only in a specific context rather than in a broad evolutionary progression from savage to the civilized, which is a unique destiny of all cultures. Thus, law-like generalizations for all cultures are unacceptable, so one must focus on the differences to capture an insight for a particular culture, rather than seeking the similarities to construct general laws. Cultural patterns do not reflect earlier stages of human development; these can only be explicate for addressing cultural uniqueness itself rather than general human progression, or individual education.

To Boas's pupil Alfred Kroeber, these patterns are not a random heap of ideational bits, but the patterns are coherent arrangements or a system of internal relationship that reflects a community's understanding of the world. "For Kroeber, that organizing force was culture—non-genetic, shared, anonymous, and patterned knowledge. Culture is that it is learned, shared, patterned, and meaningful. The configurations of culture are produced by the history of a particular set of cultural values" (Moore, 2009, p. 71).

Another well-known anthropologist of the Boasian school is Ruth Benedict. For her, culture is a pattern based on fundamental values, which is different in every community. Shared values that are acquainted by living in a society and tempering or training with its practices determine the essence of a culture. Those who adopt these values are acceptable and those who do not are deviant. A specific value or behavior is appropriated according to these patterns. The configuration make links between facts and event and beliefs and attitudes, these produce patterns in tandem (Moore, 2009).

Edward Sapir also concurs that culture is a pattern, but different from the above-mentioned people, the pattern is language, which dynamically links individuals and culture. Individuals are not passive receivers of pre-established, unchanged values; culture is consistently re-built by individuals in public discourse through debate and disagreement that depends on utterances and language. Margaret Mead also searches these patterns in the human development process. Culture is the determining force in development of individuals form their infancy to adulthood. In every step cultural patterns designate the attitudes of individuals (Moore, 2009).

While American cultural anthropology seeks to reveal shared mental content of a certain unique culture, contrary to that, British social anthropology follows a different trajectory. This school tends to explain culture, depending on Durkheim, with a utility-based account. Ushered in by Malinowski and Radcliffe-Brown, British social anthropology asserts that culture functioned to meet the necessities of individual basic instincts and to produce and maintain society. Instead of searching shared values and ideational patterns, social anthropologists focus on groups, class and institutions that co-operate to sustain the society as a whole.

For example, according to Marcel Mauss, the practice of gift, reciprocal gift exchange is a fundamental algorithm for diverse societies. A gift is not only about commodities but also anything that has a value such as puberty, girls, ceremonial funerals, childbirth, death, ruin etc. Individuals and groups constantly exchange everything between them; Mauss calls this as “total prestation” that underlies oldest

economic system and social interaction as well as modern rules and customs. This is a common pattern for all cultures, he says:

> We may then consider that the spirit of gift- exchange is characteristic of societies which have passed the phase of "total prestation" (between clan and clan, family and family) but have not yet reached the stage of pure individual contract, the money market, sale proper, fixed price, and weighed and coined money (Mauss, 1967, p. 45).

For Malinowski, every culture must satisfy the natural needs of society; every cultural achievement refers directly or symbolically to the satisfaction of biological necessities. For him, "culture is utilitarian, adaptive, and functionally integrated, and the explanation of culture involves the delineation of function" (Moore, 2009, p. 142).

Radcliffe-Brown, a main figure in social anthropology, who is inspired by Durkheim and Comte, investigates cross-culturally general laws that regulate structure and function. He follows Durkheim, so he believes that social institutions are key figures for maintaining cultural order, these institutions are analogous to the organs of body. He also uses Malinowski's tradition and tries to show how customs are functional to the stability of society.

As it can be seen there are two rival camps. In American version of culture, for Boas and his school, culture is a kind of a consistent whole in which every item is arranged in order to meet psychological need for adopting patterned worldview. On the other hand, the so called "British social structural approach" asserts that culture does not consist of ideational units, but mental attitudes and beliefs that function to promote the survival of society. Mental patterns reflect the practices and co-operation in social life that are indispensible to make society coherent and ordered. Both approaches agree that culture is not an outcome of transmission of isolated units. For the American version, a bit of information only has meaning in the context of a specific culture, so it becomes an inseparable part of patterned whole. On the other hand, the British school acknowledges culture is not diffusion of bits, or a set of propositions, rather, a conscious inferred from action and process in social interaction (Bloch, 2000). "For the American cultural

anthropologists, explanation involved showing the relationship between values and cultural behavior. For the British social anthropologists, explanation required analyzing the different segments of society and the institutions that articulate them" (Moore, 2009, p. 177).

Apart from these two camps, after 1960s symbolic aspect of culture is stressed by eminent anthropologists such as Levi Strauss, Victor Turner, Clifford Geertz, and Mary Douglas. According to Turner the central feature of culture is symbols that are only understood by investigation of cultural practices. Levi-Strauss points out the underlying logic of myths and other symbolic cultural practices. Clifford Geertz (1973) puts forward that understanding a culture is always dependent on interpretation that stipulates engaging in an act (a ritual or a festival) of a local context in which that act gets its meaning. He stresses the semiotic aspects of culture that can be seen as a web of significance. The science of culture must be dependent on the interpretation of signs and "analysis, then, is sorting out the structures of signification and determining their social ground and import" (p. 9), rather than collecting data or seeking general laws. Geertz calls this second type of making ethnography as "thick description". By highlighting semiotic, interpretive aspects, he means technology and infrastructure, patterns, super-organic whole, or general laws have no priority in cultural investigation.

> Though ideational, it does not exist in someone's head; though unphysical, it is not an occult entity…. Once human behavior is seen as (most of the time; there *are* true twitches) symbolic action the question as to whether culture is patterned conduct or a frame of mind, or even the two somehow mixed together, loses sense (p. 10).

Hence, Geertz rejects the pervious visions, and stresses that cultural science should depend on meaning and the interpretation of signs.

Eric Wolf also agrees that culture cannot be understood from the perspective of static ideational units, or integrated wholes, or functional parts. He argues that every culture has different groups and classes with varying degree of access to power. "Wolf argued that an anthropological perspective that saw cultures as ahistorical, stable, and

uniform was inherently flawed" (Moore, 2009, p. 293).

As it is shown there is no clear-cut, agreed definition of culture in anthropology. These different explanations date back to the old discussion known as civilization-*Kultur* distinction. Civilization refers to universalistic-humanist French Enlightenment's understanding for which culture is a cosmopolite property of humanity that progresses evolutionarily and creates perfection of the soul. *Kultur* refers to romantic, nationalistic understanding, which conceive that culture is the sum of characteristics of a nation, Volksgeist (Özlem, 2008). Here culture refers to national identity, each Volk has its own Giest. In the first tradition, "civilization was represented as a progressive, cumulative human achievement. The progress of civilization could be measured by the advance of reason in its cosmic battle against raw nature, instinct, and unthinking tradition" (Kupper, 2000, p. 176). The Enlightenment's concept of culture is universal and progressive which materialize in science and technology and rationality of government. On the contrary, the counter-Enlightenment Romantic Movement, the tradition of culture (*Geisteswissenschaften*), distinguishes itself from the French concept of civilization, and Anglo-Saxon notion of "social sciences" as well. The quarrel between social science (Anglo-Saxon) and the humanities (German) can be translated as positivism and historicity or hermeneutics. The former sees science as a model to designate the complexity of social phenomena and seeks general law-like regularities for culture or human affairs. The latter argues that the investigation of nature and of culture is highly different, thus the science of culture be autonomous. Vico was the first who argues there should be a new science that will focus on cultural affairs independent of known sciences. However, the tradition of *Kultur* begins to appear with Dilthey, who made a discrimination between natural sciences and humanities, whereas the task of natural sciences is explaining natural facts, human sciences must understand human relations. According to Dilthey's historicism, human sciences are always dependent on the time in which a specific culture exists. For the historicism, the aim is not to attain a general truth that can be applied to all human knowledge, because culture is a unique form of human society life styles, it comes out as different life patterns for different societies. Historicism seeks to point out societies unique life patterns for every historical period in their singularity and individuality, rather than pursuing a general, abstract

notion of culture. These singular wholes, for Herder, are not following a line of progressive linear schema that can only understand through theoretical reason as it was supposed by evolutionist-Enlightenment vision, but rather, it can only be understood through historical reason. Culture and even natural science can be seen as a product of practical-social relations (Özlem, 2000).

To sum up, there are various theories to explain the concept of culture in anthropology and in philosophy, but memetics literature does not mention any of them. Memetics never refers to the linguistic aspects, in which culture appears and develops, to consistency or holistic aspect, to utility or functions of cultural phenomenon, to power relations in human affairs, or to interpretive aspects or signs by which culture materialize. Memetics and especially Susan Blackmore's aspect never attempts to face any of there theories in a suitable manner. It can be claimed that Susan Blackmore's memetic approach is anthropology-blind as well as blind to the fact that its findings are already discussed in the literature of social sciences.

Memetics, following Comte and positivist positions that take natural sciences as a model for social sciences, is based itself on biology or genetics. It regards genetics as a sound, proven science to explain biological phenomena, by mirroring it, memetics can explain the cultural sphere. Since, genes can be treated as identifiable, discrete units (even this is also not debatable), it is supposed that memetics can treat culture by dividing it into discrete units. As Mary Midgley (2003) remarks culture is not a heap of atomic units:

> The trouble is that thought and culture are not the sort of thing that can have distinct units. They do not have a granular structure for the same reason that ocean currents do not have one – namely, because they are not stuffs but patterns (p. 57)

Susan Blackmore also accepts there is no clear definite units for memetics but still she accepts that culture is an integration of memes. Apart from that the term meme is attributed to practically all-social phenomena and really resembles to what semiology called a sign. Indeed the term meme is highly similar to the term sign that is used in

semiotics. However, there is no reference to semiotics in Blackmore's account, but at least it should be noted by which aspects memetics differentiates itself from semiology. Memetics has to face semiology and it must demonstrate which novelty it brings that semiology has not reached.

Nobody can deny that something independent of biological existence is transferred in social transmission. Memes are those units, which are transmitted by imitation, i.e., social transmission. These are not about personal emotions, social learning, in short, untransferable things. However, culture is imbued with those things, which have no clear, identifiable meaning and those things we can learn without imitating somebody or learning from a certain source. Language acquisition is a good example. Infants can internalize the words and grammar through linguistic interaction. But nowhere in this interaction the rules of grammar is presented, these rules are unconsciously inferred from others use of language. We also did not learn the words one by one by imitating or observing somebody and in every utterance we get together some words that are acceptable in the scope of language, which is most of the time unique to us. We utter a new sentence; we can generate millions of different versions of sentences that did not exist before without imitating somebody. This is what Noam Chomsky calls generative aspect of language. Dan Sperber (2000) uses it to criticize memetics:

> As Noam Chomsky has long argued and as has become, if not universally, at least generally accepted today, this requires a genetically determined preparedness to interpret the data in a domain-specific way and to generalize from it to the grammar of the language, going well beyond the information even. Imitation in some sense may well play a role—though not a sufficient one—in the acquisition of the phonology of words, but not in the acquisition of their meaning. Meaning is not something that can be obeyed and copied (p. 172).

The grammar and underlying mechanism of language is not copied by imitation, even if Susan Blackmore uses the distinction copy-the-product and copy-the-instruction distinction with the example of the recipe of pumpkin soup, the concept of copy-the-product is not sufficient to explain language acquisition. Because, there is no clear instruction in the course of language acquisition like a recipe for food, instructions must

be inferred from other's use of language and this also includes a subject's intervention.

Hence, as in the case of Chomskian linguistic, something can be copied or internalized without imitating another; even imitation is used here in a broad sense. Moreover a considerable part of culture consists of not only information packages but also something that cannot be actualized to express. Deleuze (1969/1990) handles this topic in the case of the distinction between meaning and sense. Something in communication is expressed that is not an expression or a proposition, neither manifestation, nor demonstration, a kind of non-entity, incorporeal, unlimited, unfixed turns out Deleuze calls *sense*. It is an "irreducible entity, at the surface of thing, a pure event which inheres or subsists in the proposition" (p. 19). Meaning is corporeal actualized form of sense. But sense has virtual existence; it has neither physical nor mental existence. Some phrases in public language have no meaning but those who live in that society can understand some sense. The feeling of disgust is an example of sense. In Western culture eating an insect is regarded as disgusting, but we have never seen somebody who eats an insect and this leads him to pain, or nobody warns us not to eat an insect, we infer that from something intangible, however a Chinese person can eat an insect with pleasure. Thus, there are no certain expressed prohibition, certain behavior or concept that can lead us not to eat an insect; this sense of disgust is a part of culture. If Susan Blackmore is right, culture is made up by memes, how could we identify this personal sense – personal but interestingly shared with the other member of society- which is a part of culture? A great deal of culture has a virtual existence, has only sense but no expressible meaning. Hence, imitation as a tool for explaining culture is only partially useful.

As a conclusion, in this section it is asserted that there is no common, agreed, single definition of culture. The definition memeticists and Blackmore espouse is a very simple definition that was actually put forward at the beginning of anthropology and there are too many criticisms of these definitions. Blackmore accepts the Enlightenment concepts of culture, as a common property of humans that disenthrall us from the state of nature, but in the German tradition culture is seen as a feature that does not drive a line between human and nature, but between two nations, a historical existence of a

nation. Blackmore is anthropology-blind and has no certain definition of culture. Her explanations never mention those critical concepts such as symbol, pattern, function, power or language. She simply sees culture as a means to transform ideas. She attempts to solve the essence of culture without a identifying what culture is.

4.2. Metaphysical criticism: The Problem of Analogy

An important problem associated with the matter of culture is memetics' analogies. Like all cultural evolutionists, memeticists start with the possibility of understanding culture through nature. However this presumption has some problems and this section will be devoted to the problems caused by the analogical reasoning of memeticists.

The father of memetics Richard Dawkins (1976), launched his project with a metaphysical presumption, which is often overlooked. He claims, "Cultural evolution is *analogous* to the natural evolution"(p. 169). This claim does not depend on empirical observation or any observable fact; rather it is a metaphysical claim. This claim at the very starting point of memetics can be reduced to its scientific value in a brute sense and casts doubt on Dawkins' strident positivism. Although every incipient science necessarily depends on one way or another to an analogy, it is claimed here these analogies can be used only operationally rather than axiomatically. Analogy can be used in various way in scientific investigation, for example simulation of a lakes flow in computer environment can be taken as a kind of analogy or when using the phrase "the electric current" the motion of the electricity resembled water, or explaining society as an imitation of human body. These kinds of analogies, which are explored as metaphorical, explanatory or instrumental purposes, are acceptable in the scope of modern science. Nevertheless, when one says God is analogous to human, because he created human in his own image, this claim is a metaphysical claim that cannot be proven in the domain of science, it transgresses the limit of science. Ironically, although Richard Dawkins sees himself as pure scientist who is supposedly free from all residues of the darkness of the middle Ages and condemns religion at every turn, he used methods frequently used in theology and rhetoric.

Analogy mostly used in logic, theology, and metaphysic in medieval theories, the concept routinely discussed in commentaries on the logic of Aristotle and especially used for metaphysics and rhetoric. There are three types of analogies in Greek thought, in terms of proportionality, attribution and likeness. When one says that a point is related

to a line, or a sea is related to ocean, namely a property that exists in smaller portion might exist in a greater portion. This is called analogy of proportionality. If one resembles two things one of which is primary and the other is secondary, this called analogy of attribution. For example, flowing is said to be analogical term when said of a river and traffic, because while a river flows in primary sense, the phrase flowing that is attributed to traffic is used secondarily in the meaning of not stagnant. The third type, analogy of likeness is used for the relation between God and creatures. Creatures are called good for the reason that their goodness imitates or reflects the goodness of God. This also often called analogy of imitation or participation (Ashworth, 2009).

This Greek categorization of analogy adopted to Islamic philosophy by the Arabic philosophers Al Farabi, Avicenna, and Averroes in order to solve the problems caused by Qur'an's verses that metaphorically and symbolically describe God as speaking, sitting or having some feelings. They used "analogy of being (of reality between God and world and among created realities); analogy of meaning (of words and concepts); and analogical thinking (of conception by proportionalities)" (Ross, 2005, p. 139). The concept of analogy is also handled by Thomas Aquinas, Duns Scotus and Cardinal Catejan (Ashworth, 2009).

The most discussed types of analogy in medieval times are the analogy of attribution and in the case of ontology the analogy of participation. Richard Dawkins' analogy between nature and culture can be seen as analogy of attribution, because he sees nature as primary and culture as secondary as we see in the Enlightenment conception of culture that assumes there were nature and humans with their extraordinary capacity freed themselves from being obliged to the strict order of nature. But as it is shown this kind of analogy was particularly used for the purposes of theology or rhetoric. Taking this as an assumption of memetics, it is possible to say it passes beyond the limits of science; which is explicitly a metaphysical (non-scientific) bias.

Analogical reasoning was also the vital characteristic of the pre-modern way of gaining knowledge on things. As Michael Foucault (1966/2005) presents, in his book

The Order of The Things, the episteme of the sixteenth centuries depends on four types of similitude: convenience, emulation, analogy and sympathy. For him analogy superimposes convenience and emulation, "like the latter, it makes possible the marvelous confrontation of resemblances across space; but it also speaks, like the former, of adjacencies, of bonds and joints" (p. 23). Analogy has limitless power that can possibly get together almost everything. Foucault states it:

> …It can extend, from a single given point, to an endless number of relationships. For example, the relation of the stars to the sky in which they shine may also be found: between plants and the earth, between living beings and the globe they inhabit, between minerals such as diamonds and the rocks in which they are buried, between sense organs and the face they animate, between skin moles and the body of which they are the secret marks... An analogy may also be turned around upon itself without thereby rendering itself open to dispute. This reversibility and this polyvalency endow analogy with a universal field of application. Through it, all the figures in the whole universe can be drawn together (p. 24)

The unrestricted power of resemblance or analogy was devaluated by the arrival of modern way of thinking. Representation is replaced by analogy and reflection displaced by measurement, order, and categorization. Hence, Dawkins' analogy is corresponding to the pre-modern, allegedly unscientific thinking.

Like her forerunner, Susan Blackmore accepts this presumption and by adopting it to the Dennett's idea of algorithm, she constructs a syllogism. Her idea of "universal Darwinism" is grounded on this syllogism. This conditioned syllogism can be formulated as such:

Major Promise: If one thing has the properties of variation, selection and retention, it must be examined in Darwinian paradigm.

Minor Promise: Culture has the properties of variation, selection and retention

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Conclusion: Hence, culture must be examined in Darwinian paradigm.

A conditioned or hypothetical syllogism can be judged according to its formal structure and the content of its promises. In this example there is no problem in terms of formal logic, but it has some problems about its content of promises. It is similar to this example:

If he drank the poison, he would die
He died

Hence, he drank the poison

Here, the conclusion is invalid because the drinking of poison did not entail the death. In the first premise, the consequence (he would die) is more general and does not necessitate the antecedent (poison). He could die in a different way; hence the conclusion is invalid. Blackmore makes a similar mistake. The syllogism is formally valid, but the antecedent and consequent do not necessitate each other, thus the conclusion is undependable. This is called the fallacy of inferring a solid conclusion from contingent or uncertain arguments (Emiroğlu, 1993).

Blackmore's two promises have doubtful arguments, so a certain conclusion cannot be inferred from this syllogism. Everything that has changeability cannot be counted as Darwinian. Darwinism can also be described in various ways; there is no single accepted definition for formulating Darwinism in a nutshell. For example, according to eminent Darwinist Ernst Mayr (1994) the essence of Darwinism is "population thinking" rather than the properties of variation, selection and retention. Moreover a worldwide known evolutionist Stephen J. Gould (1997) insists that cultural evolution is not Darwinian but Lamarckian, that is, it depends on inheritance of acquired characteristic. Further, what is meant by variation, selection (which kind of selection), and retention is ambiguous as well. Hence, Darwinism does not necessarily entail these three properties.

As to the minor premise, it is evident that some kind of variation occurs in culture, also something is retained, and something fades way, but the problem is that whether these notions, variation, selection and retention, which are exploited to explain natural selection are the same as used in cultural evolution. This point is also doubtful. According to Gould (1992) variation used in natural evolution is not the same as cultural evolution because the latter can be faster in magnitude than the former, retention is not the same as Darwin's natural evolution because cultural evolution is in Lamarckian form, and finally their typologies of change are completely different.

Thus, Blackmore's two promises are not solid and the conclusion from them might not be dependable. These kinds of logical fallacies caused from contents examined by Aristotle in his book *Sophistic Refutations*. For Aristotle, one of the most common fallacies sophists made is using contentious arguments. They used these arguments for confusing and then convincing the audiences. Blackmore (1999) uses this kind of rhetorical tricks, instead of strengthening her arguments, she invites us to taking meme's eye view, because once you take this view, then whole project of memetics become acceptable. We should firstly have faith in memes, and then world starts to appear different way.

Memetics' unproven analogies and invalid syllogism decrease its scientific value. Maria Kronfeldner's (2011) work on Darwinian analogical reasoning from nature to culture, she detects three types of mistakenly used analogy as origination analogy, ontological analogy and egoism analogy. She uses three criteria to judge the appropriateness of these analogies. Firstly, an analogy has to be descriptively adequate; namely, it must lead to a correct description of the phenomenon at issue; secondly it had to have explanatory force, that is, it should contribute to an explanation of phenomena rather than being tautological, and finally, it should have heuristic value, it must add to something to our already available explanation. She applies these criteria to the above-mentioned analogies.

First of them is *origination analogy*. It refers to:

> The origin of certain features of ideas is analogous to the origin of the certain features of organisms. The origination analogy therefore refers to general pattern of how certain changes arise whether this pattern is analogous to God-like creation, to a Lamarckian kind of evolution or Darwinian (Kronfeldner, 2011, p. 9).

This is about the selection process, which is the third requirement of being Darwinian according to Blackmore, that is to say whether the selection process occurred in a Darwinian manner, God-like creation, or a Lamarckian fashion. To put it in another way, the problem is whether selection in cultural evolution is blind selection or not. For Kronfeldner distinguishing the types of variation is necessary to understand the selection processes. The first of them is *random variatio*n, which refers to variation without any foresight or direction. But this blind variation cannot be attributed to cultural change, because no sane person can say Shakespeare haphazardly wrote his sonnets without any directed education, interacting with an intellectual circle, or some political purposes. The second selection pattern is *unjustified variation,* which claims that Popper's falsification theory is analogous to nature. Ideas are selected according to a process of error elimination. But we know that there are various untouched superstitions retained in modern times that are not discarded by the process of falsification. The third one is *undirected selection,* which refers to the rising of novelty without benefit of wisdom (Kronfeldner, 2011). Hence, Blackmore's minor promise, which assumes that culture has the property of variation, is casted doubt and is made ambiguous by this uncertainty.

Kronfeldner (2011) purports that the second disanalogy used by memeticists is *the ontological analogy,* which is about the entities involved in natural evolution and cultural change. She explains it as follows:

> The *ontological analogy* includes the claim that those kinds of entities that are the building blocks of culture share basic features with those entities that are the material basis of biological evolution. The entities that are discussed today are not complex artifacts as analogous to organisms, but ideas, values, or instances of behavior as analogous to genes (p. 75).

This analogy depends on heredity or retention, another criteria purported by Dawkins and Blackmore for counting something as Darwinian. The vital feature of genes is their persistence through time by the process of replication. Memes can do the same because they are replicators. Thus, this analogy includes cultural units as replicators. However the two arguments, first, there are such ideational units of cultural heredity and, second, they are replicators, are contestable.

As it was shown in the first section, culture cannot be treated as the compilation of the divided, isolated ideational units. Memes are not entities in themselves, but their existence depends on human inference, because it is about meaning. Unlike unchanged Dawkinsian genes, memes are context-dependent entities. As Schmid (2004) puts it:

> There is no equivalent to the primordial DNA (that is ontologically objective) in memetic evolution. Because it is ultimately about *meaning,* memetics is always and inevitably about 'us', i.e. the forms of life that make it possible to bestow things such as certain sequences of sounds with *meaning* (p. 112).

There is also not always one-to-one matching between a behavior and the meaning of meme. Blink of an eye can be evaluated as sincerity, deception, or courting in different contexts. Thus, although some types of distinct biological units of heredity can be found, we cannot an logical determinable distinct units of culture.

In addition to that, unlike genes that reside in an exclusive area in chromosomes called DNA, Blackmore's memes have the problem of material identification that was discussed in chapter 3. Even if the existence of memes as ideational units of culture is accepted, they cannot be counted as a replicator because of its high rate of changeability. As Attran (2001) states:

> Unlike genetic transmission and replication, high fidelity transmission of cultural information is the exception rather than the rule. Constant and rapid "mutation"

> of information during cultural transmission results in endlessly varied proliferation of information that nevertheless continues to meet modular input conditions (p. 370).

In order to escape this problem, memeticists claim there are changes in memetic transmission, but there is something that remains unchanged, what are changed are some externalities of memes or its phenotypic expression.

According to the Kronfeldner (2011) ontological analogy made by memeticists is "explanatorily and heuristically trivial by first buying a definition of culture everyone uses already wrapping it in evolutionary language, and then selling it as an explanation" (p. 106). The definition of a replicator in strict sense is not completely attributed to memes and they have no material realization unlike genes; thus, memetics ontological analogy is explanatorily trivial. Memes are an adaptation of certain kind of anthropological definition of culture; adding nothing new except a science-fiction language. Blackmore's definition of memes, that is, something transmitted by imitation, is no news, because everybody accepts that there should be something similar in cultural transmission. Moreover, Blackmore's notion of imitation as a means of cultural transmission in wider sense resembles what social psychologists have found about social learning. Thus, the analogy of ontology is heuristically trivial as well. So, ontological analogy fails to meet the criteria cited by Kronfeldner.

The last but not least type of analogy is called by Kronfeldner (2011) *egoism analogy*: it refers to gene-based selection conceived for explaining natural evolution. Similarly a meme-based selection is developed for explanation of cultural evolution. A gene-centered worldview, as it was explained in chapter 1, claims genes are the basic units of selection by which everything in biological evolution can be explained. The survival of genes is the main aim of biological domain and creatures are merely vehicles for these all mighty genes. This theory is mirrored in memetics, that is memes are the basic unit of selection in cultural evolution and all that we see around us as cultural is merely phenotypic effects of these selfish memes. "This idea does not only comprise that there are memes, it includes that memes and not minds explain culture"(p. 9). According to this analogy, the survival of the memes is the core of the cultural evolution

regardless of the selective environment. However, as it is explained in the previous chapter, the concept of survival of the fittest leads to tautology by saying "such a statement that the successful ones are the successful ones" (p. 116). Without a selfish cultural unit, all the explanations of memetics become heuristically trivial because they add nothing new to the traditional theories of cultural transmission. As Kronfeldner (2011) point out:

> Since humans are necessarily the selective environments of memes, memes cannot spread independently of their human carriers. Memes cannot be selfish since they do not possess a fitness that is independent of their human carriers. Without taking the relation between memes and their selective environment into account, the claim that diffusion can be explained by the differential survival-of-the-fittest-meme becomes tautological… Memeticists tend to misconstrue the role individual play in culture and they fight against the straw man of a too rigid rationalistic picture of human decision-making. Since humans create, transmit and select memes, they are the primary causal agents of cultural change (p. 136).

Thus, memeticists principally depend on analogies that are peculiar to pre-modern thinking, as Foucault has shown. Since these metaphysical analogies are not empirically proven and have no scientific value in a strict sense. But making these kinds of metaphysical analogies might spring from some ideological concern. Getting two different categories together cannot be seen as merely a detached intellectual activity; rather it reflects certain discursive prejudices. Some of the probable discursive biases will be handled in the following section.

4.3. Discursive criticism: The Ideology of Third Culture

As John Maddox (quoted from Gruenwald (2005)) states "Science, like art, is not a copy of nature but a re-creation of her. We are made nature by the act of discovery, in the poem or in the theorem" (p. 141). Making axiomatic analogies is such kind of bricolage. The need to establish analogy between two different things arises from a

certain hierarchy of values and worldviews. Things are juxtaposed according to a number of pre-existent, deep-seated values embedded in society. Analogies of memetics, then, mirrored some disguised values and biases some of which will be displayed in this section.

First of all memetics can be seen as a new version of "Social Darwinism " ushered in by Spencer and August Comte at the very beginning of the discipline of sociology. Overextending the Darwinian theory of evolution to the cultural sphere and transferring some insight acquired from biology directly to the cultural domain by establishing an analogy between society and organisms. However, particularly the application of the concept of survival-of-the-fittest used in biology to the societies and history made possible to intellectually legitimize some notorious doctrines such as racism, imperialism, colonialism, etc.

Although there are some nuances between memetics and social Darwinism, memetics is a new attempt to naturalize culture or an understanding of culture by means of inscribing biological methods to the humanities. Assertive scientists sometimes embark on offering some visions to the implacable problems of social sciences and also sometimes those social theories emulate the established sciences to be accepted as a science in their domain of investigation. The trust in the power of sciences allows memetics to create a theory of culture based on biology. Since, relying on the success of his gene-selectionism, Dawkins attempted to solve the concept of culture and cultural transmission that have been discussed for a long time in anthropology. This obvious remnant of positivist attitude is not new; as Poulschock (2001) puts it, "memetics is another colonization of the social sciences following the tradition inherent in social Darwinism, sociobiology and evolutionary psychology" (p. 69).

Secondly, memetics, especially in the works of Blackmore's forerunners Dawkins and Dennett, is keen on denouncing the role of religion and the notion of God that are condemned as The Viruses of Mind or a good trick of mind. Blackmore also, at the end of his book leads us to a kind of Zen Atheism. The theory of Darwin is no longer just a scientific theory to explain natural phenomena in this authors mind, rather it becomes a world view, a panacea for every problem, a metanarrative, a new messianic

challenge that would annihilate all the ancient misbeliefs that crippled our vision by the destructive power of "universal acid"; and also would bring us salvation and tranquility by the power of 'universal Darwinism' that may solve all conflicts in a single vision. Memetics aspires to perform the role of the religion and ideologies by preaching some type of atheism Alister McGrath (2010) puts these writers name as "atheist apologetics". These apologetics, like a zealous missionary willing to cast doubt on the faith of God and "restating the legitimate role of the sciences in the face of the rival claims of the humanities or religions" (p. 334). They also fight against the attacks of postmodern attempts, such as historicism, hermeneutic, deconstruction, which discredited the aims of sciences for explaining nature totally in its reality, by generating some universal, archetypical, timeless, principles such as the selfish genes, Darwinian algorithm, Universal Darwinism etc. that capable of being applied throughout the universe. McGrath (2010) explains this world view as:

> Darwinism is here understood more in terms of an ideology, a worldview, extending beyond the limited domain of the biological to embrace the cultural and intellectual realms. Nature, many now argue, is religiously ambivalent, making the manner of its interpretation of critical importance (p. 350).

Evolutionary biologist and geneticist Richard Lewontin (1993) also criticizes these kinds of the encroachments of genetics and biology. He resembles today's science to ancient institutions that make the world legitimate. For him there are three basic types of these institutions that serve as justification and control the stability of society:

> First the institution as a whole must appear to drive from sources outside of ordinary human social struggle. It must not seem to be the creation of political, economic and social forces, but to descend into society from a supra-human source. Second, the ideas, pronouncement, rules and results of the institution's activity must have validity and a transcendent truth that goes beyond any possibility of human compromise or human error. Its explanations and pronouncements must seem to be true in an absolute sense and to drive somehow from an absolute source. They must be true for all times and all place. And finally the institutions must have a certain mystical and veiled quality so that its

> innermost operation is not completely transparent to everyone. It must have an esoteric language, which needs to be explained to the ordinary person by those who are especially knowledgeable and who can intervene between everyday life and mysterious sources of understanding and knowledge (p. 7).

Indeed, Darwinism, and particularly memetics, has these three church-like qualities. They seem completely apolitical, they seem as they just interpret the solid consequences of the data of natural sciences by means of undeniably evident theories, which are absolute, universal, essential forms capturing the meaning of our world in its all facets. Dawkins, Dennett and Blackmore also are informed about the advances of current sophisticated sciences such as genetics, cybernetics, and consciousness studies, then they are the mediator between ordinary people and the reality, and thus they become a commentator of the unchangeable, universal truth that underlies every mystery. Hence, in this kind of Darwin reading the differences between religion or ideology and science becomes blurred.

Memetics and other Darwinian theories of culture have not only the features of religions, but also certain characteristics of ideology of modernism. First of all the categorical discrimination between inside and outside, or internal and external can be seen as the heritage of Descartes. Modern biology, through this memetics, presumes that there should be an internal domain, which is unchangeable, self-consistent and essential, and an external area, which is changeable, secondary, and inert, just as a medium. One of the consequences of this view is that a result or an affair could only be caused by a particular effect or factor. For example, a tiny bacillus called, Koch bacillus, which is an agent that comes from outside to disorder the routine functioning of the body, is the exact cause of tuberculosis. However, as Lewontin shows that there is no ineffective, stable nature or environment, organisms and their environment constantly affect and reconstruct each other, namely, medium is the massage. Another consequences of the Cartesian analytic world view is that all seemingly holistic things can be reduced to single particles as we learned from Newtonian differential equations. This atomistic thinking diffuses our entire conception of the life and world such as “the body consists of genes”, “the society consists of individuals”, “the mind consists of departments”, or

"culture consists of information bits". As Lewontin (1993) states:

> So, the ideology of modern science, including modern biology, makes sense the atom or individual the causal source of all the properties of larger collections. It prescribes a way of studying the world, which is to cut up into the individual bits. It breaks the world down into independent autonomous domains, the internal and the external (p. 13).
>
> There is clearly truth in the belief that the world can be broken up into independent parts. But that is not a universal direction for the study of all nature. A lot of nature, as we shall see, can not broken up into independent part to be studied in isolation, and its pure ideology to suppose that it can (p. 15).

As explained in first and second chapters, memeticists generally divide the world as internal, hidden causes, memes and genes, and their place, brain or artifacts and body, is just an ineffective medium that just helps their survival. Nature and culture can be cut up into two main atom-like entities, genes and memes, which are the explanation of everything. A problem in external or phenotypic world must be caused by internal genotypic or memotypic domain, and rectifying those particular units can only solve that problem. However, as explained in first chapter and here, neither culture, nor nature can be treated as something formed by amalgamation of independent, individual bits.

Thirdly, the theory of memetics operates in a certain political economy, and either consciously or unconsciously, legitimizes the existence of the *status quo*. First of all, memetics reflects, like other Darwinians, basic laissez-faire economy or ideas of Manchester School of Economics that followed Darwin, which and depend on the "magic power of competition" (Schmid, 2000, p. 10). Selfish genes are always running after their own interest and have to compete with each other in order to get better a chance to survive, and the same is true of selfish memes too. They only associate if interest groups could get some advantage from that; otherwise they always seek to eliminate each other. Memes always behave like an imperialist who tries to get more room in mind for its expansion and like a crude capitalist, who resorts all trick to eliminate his rivals. Thus, memetics reflects some feature of the capitalist doctrine.

But, what is the memetics inconspicuous operation to legitimize the existent order and to cover inequalities. According to memetics and Susan Blackmore, all man-made occasions are the result of competition of memes, regardless of its bearers. This is what the immediately mentioned discrimination of inside and outside, master cause and it bearer. If the Internet and the press are invented and sustained only for the sake of memes survival, then the media bosses are just fortunate bearers of the meme transformation memes. If the ideas compete each other to survive regardless of their content, then extremist Islamism can be discarded by making lots of propaganda. In this way it can be said that memetics unconsciously cover the social inequalities to legitimize sustaining of the neo-liberal system. This is so clear that it is even cited in a journal of biology. Geoffrey Miller (2000) says:

> The major problem is that meme theories tend to ignore the powerful institutions that dominate modern culture. This often leads meme theorists to misdescribe marketing and advertising phenomena as cultural evolution effects. Meme theory risks leading people into naïve passivity in the face of manipulative marketing by corporation churches and states (p. 436).

Throwing aside the subject leads memetics to reduce all the phenomena to the unconscious, not-obligated particular entities, thus nobody can be accused for a bad states of affairs. This is also ridiculous from the standpoint of morality. What can we say according to memetics if one killed the other, who is the responsible here, the memes for killing or the bearer of it? Are television and the Internet sites the only broadcast for meme spreading or can they work for the memes of the most powerful? As Zizek (2002) expresses:

> What is obfuscated in such direct naturalization of the lets say World Wide Web or market is the set of power relations – of political decisions, of institutional conditions which necessary the organism like the Internet to thrive (p. 214).

There is a political economy which drives the evolution of communication devices: financial institutions, military institutions and entertainment institutions have their own built-in motives for pushing a given set of memes on a culture, on a

population, on a global economy that is overlooked by Blackmore and memeticists.

Finally, and probably most importantly, memetics is a part of currently arising ideology its name coined by John Brockman (1995) *The Third Culture*. This name was given in reference to C. P. Snow's famous article *The Two Cultures.* British scientists and novelist C. P. Snow in his influential Rede Lecture put forwards the idea that Western intellectual life, despite of it enormous success, was split into two unconnected parts as literary intellectuals and scientists. Snow (1961) describes it:

> Literary intellectuals at one pole - at the other scientists, and as the most representative physical scientists. Between the two a gulf of mutual incomprehension – sometimes hostility, and dislike, but most of all lack of understanding. They have a curious distorted image of each other … Non-scientist tend to think of scientist as brash and boastful, non-scientists have a rooted impression that the scientist are shallowly optimistic, unaware of man's condition. On the other hand, the scientists believe that literary intellectuals totally lacking in foresight (p. 4-5)

As clearly depicted in the quotation, in the 1960s literary intellectuals and scientists had sharply different interests, sometimes it is even possible to find a scientist who has never read a verse of Shakespeare, and "the majority of the cleverest people in the western world have about physic as much insight into it as their Neolithic ancestors would have had" (p. 16). This warning had a deep impact on Western intellectual life, but, despite all the endeavors trying to combine the two cultures, an effective communication could not occur. Today, generally social scientists still see scientific formulas as hieroglyphics. The event of *Social Text* is a clear example to this lack of understanding.

The strong belief in science was decreased by a sequence of events like the destruction of atom bomb, and multiple attacks from intellectuals who supported the claim of the demise of metanarratives. After decades of power loss, currently a new intellectual movement has been arising since the 1990s when the failure of Marxism was

declared by the fall of Berlin Wall. After that time, the credibility of science is starting to gather its old strength through a new medium. The name of this new medium or "new cultural elite in science" (Vesna, 2001, p. 122) is called "The Third Culture." The founder of the Edge Foundation, John Brockman (1995) describes this approach as follows:

> The third culture consists of those scientists and other thinkers in the empirical world who, through their work and expository writing, are taking the place of the traditional intellectual in rendering visible the deeper meanings of our lives, redefining who and what we are (p. 7).

He asserts that traditional intellectuals who have studied the topic like Freud, Marx, and modernism are not sufficient today and American intellectual life has shifted from gradually marginalized traditional intellectuals to new popular scientists. Traditional intellectuals lost their power, "journalist wrote up and professors wrote down" (p. 17). New scientists either do not need intellectuals to interpret their complicated work and to infer some ideas for our life, or they are not those who are closed in their lab and dealing with some odd issues detached from common sense; instead, they are still cope with elusive, complicated topics but they start to interpret and write down their own works. "Today, third-culture thinkers tend to avoid the middleman and endeavor to express their deepest thoughts in a manner accessible to the intelligent reading public… "'Science' has today become 'public culture'" (p. 18). They are dealing with the topic that can affect the life of everybody such as genetics, neuroscience, dark matter, time travel and so on. "They try to give these fundamental questions: 'Where did the universe come from? Where did life come from? Where did mind come from?' Emerging out of the Third culture is a new natural philosophy" (p. 20). They become a new authority that can obtain the most formidable ontological and epistemological problems with their high knowledge on hard sciences. The members of this new movement come from diverse areas; Brockman counts some of these eminent scientists and thinkers:

> Who are the third-culture intellectuals? The list includes the individuals featured in this book, whose work and ideas give meaning to the term: the physicists Paul Davies, J. Doyne Farmer, Murray Gell-Mann, Alan Guth, Roger Penrose, Martin Rees, and Lee Smolin; the evolutionary biologists Richard Dawkins, Niles Eldredge, Stephen Jay Gould, Steve Jones, and George C. Williams; the philosopher Daniel C. Dennett; the biologists Brian Goodwin, Stuart Kauffman, Lynn Margulis, and Francisco J. Varela; the computer scientists W. Daniel Hillis, Christopher G. Langton, Marvin Minsky, and Roger Schank; the psychologists Nicholas (p. 19-20).

The number of these figures can be increased, but their common feature is their popularity. Their books sell millions of copies across the world. The other common feature is that they specialize in some topic that only a few people in the world can understand; yet they express their findings in a way that an average intelligent person can understand. Moreover, all of these thinkers cope with the age-old ontological problems such as the essence or meaning of life, the essence of time and space, man's place in the universe, the reasons that underlie our purpose and emotions. Slovaj Zizek (2002) singles out three features of this new trend:

1. As a rule, we are not dealing with scientists themselves, but with authors who address a large public, whose success exceeds by a long way the public appeal of Cultural Studies.
2. As in the case of Cultural Studies, we are dealing with a hegemonized field, but with a rhizomatic multitude connected through "family resemblances", within which authors are often engaged in violent polemics, but interdisciplinary connections also flourish
3. In general, authors who are active in this domain are sustained by a kind of missionary zeal, by a shared awareness that they are all participating in a unique shift in the global paradigm of knowledge (p. 212).

Susan Blackmore is a good example of this ideology. She is trained in psychology, also dealing with consciousness studies. Her products are not highly scientific works but popular works. She works in a highly interdisciplinary manner. Finally she zealously works for convincing others of her unifying standpoint, i.e. Universal Darwinism that leads to paradigm shift.

The problem of self has been discussed, especially after the Second World War period, in philosophy, sociology and literary theory. Post-modern thinkers put down self-consisting identities and modern cogito. The idea of self is re-evaluated by what Zizek says "Buddhism cognitivizm (Hubert Dreyfus, Francesco Varela, Fritjof Capra, Susan Blackmore), who asserts that the idea of self is a delusion and "I am nothing but a bundle of elusive and heterogeneous (mental) events"(Zizek, 2002, p. 206). Blackmore shares this stance and argues that the idea of self is mere an illusion that stems from memes battle of survival.

Susan Blackmore's memetic approach with its totalizing concept of Universal Darwinism, assertion on meaning of life, ideas and believes, and her attempt to naturalization of culture for certain purposes, is a part of The Third Culture ideology.

4.4. Philosophical Criticism: The Specter of Plato

As was mentioned in the first chapter, philosopher Daniel Dennett suggests that what is revolutionary in Darwin's account is its attack on Platonic essentialism. Whereas Plato and Aristotle believe species exist as a form, which is unchangeable and permanent, Darwin put forward the idea that species are not eternal things that exists in accordance with an order, but rather they are changeable units and come into being haphazardly. Claiming species have no essence is indeed a revolutionary strike to essentialism. For Dennet and Blackmore, memetics as a Darwinian theory of culture sustains this revolutionary assault.

Indeed, memetics, at first glance, seems highly anti-essentialist and compatible with current attacks on Platonism made in contemporary philosophy. But as Whitehead (1978) notes, "European philosophical tradition are that is consists of a series of footnotes to Plato" (p. 39). This does not mean all thinkers use Plato's system or works on his concepts but "his personal endowments, his wide opportunities for experience at a great period of civilization" (p. 39). Extirpating Plato from our minds is not a simple task. Plato often haunts our ideas and we cannot help ourselves to get rid of his heritage.

At first blush, memetics seems congruent with Deleuzian and Derridian attempts to overturn Platonism. Platonism is an abstract idealism "dedicated to the reification of transcendent, supersensible forms. It is dualistic, privileging soul over body, essence over existence, form over matter"(Corrigan & Turner, 2007, p. 1). It depends on the distinction between intelligible and phenomenal, and soul and body. It is a "posting two world separated by an abyss. In this picture, the sensible world is envisaged as a misleading snare of illusion, which should be dismissed as illusory by reference to the other world of transcendental reality" (Lane, 2001, p. 55). Platonism essentially claims this sensible world is not what it appears to be but there are different causes that underlie these phenomenal things, namely there is a real world beyond our senses, which is superior and deserves attention and a sensible world in which we live in through everyday life. Deleuze and Derrida seek to break this dichotomy by blurring the relationship of the original and its copy. Deleuze develops the notion of "simulacra" to make the hierarchy of the relation between the original and copy upside down. In Plato's

thought, distinction between the authentic and the fake is made by evaluating something to its ascending to the *eidos* or Ideas. "The participants are put in the hierarchy of resemblance, the higher being the most similar to the original identity of eidos" (Koyuncu, 2008, p. 15). For Deleuze the distinction in which Plato's thought operates is not between model and the copy but between the copy and the simulacra.

> Copies are defined by their ascension towards the ideal insofar as they have an internal resemblance to the original identity of the eidos. Simulacra, on the other hand, are constituted upon a disparity, which is defined by a descent from the truth of ideals. Thus, the world of the idea does not serve only to constitute an opposition to the world of appearances, but more importantly, in doing so, it guarantees the justification of another distinction between the true images and false ones (Koyuncu, 2008, p. 16).

This Deleuzian affirmation of simulacra in which the position of the original and the copy is indistinguishable means the affirmation of differences rather than sameness is the essential feature of ideas. For Deleuze there is not a hidden original thing or a model behind the appearances, which one can reach it by transgressing the disguises or the illusion of repetition or copies. Deleuze reverses the Platonic position by devaluating the positive meaning of the original or the essence and avoiding the economy of one and many by displacing it with multiplicity.

Derrida also attacks Platonism in his book *Dissemination.* Plato focuses on the notion of *pharmakon,* to study the relationship between the original and the supplement, or the principal and the secondary. In *Phaedrus* writing is presented as *pharmakon*, an aid or a cure and also a poison for memory. Writing presented as dead knowledge whereas speech is living knowledge, writing is less truthful and reliable than speech. The dead writing is a copy, a degraded version of living speech, which depends on the presence of speaker. Derrida blurred the hierarchy of writing and speech through the notion of imitation:

> A perfect imitation is no longer an imitation. If one eliminates the tiny difference that, in separating the imitator from the imitated, by that very fact refers to it, one

> would render the imitator absolutely different: the imitator would become another being no longer referring to the imitated. The imitator would become another being no longer referring to the imitated. The imitation does not correspond to its essence, is not what it is –imitation- unless it is in some way at fault or reader default. It is bad by nature. It is only good insofar as it is bad. Since (de)fault is inscribe within it has no nature: nothing is properly its own. Ambivalent, playing with itself by hollowing itself out good and evil at once-undecidably mimēsis is akin to the pharmakon (Derrida, 1981, p. 139).

Thus, for Derrida, *pharmakon* and mimesis are notions in which the superiority of the original or substantial over the copy or additional becomes blurred. This operation of disorienting casts doubt on Platonic distinctions. Thus Derrida and Deleuze tried to break the hegemony of the single, central truth underlying everything. Does not memetics say so? Memetics claims that there is no true, dependable, certain idea rather; all ideas and beliefs are the copy of the copies like simulacrum. Memetics attacks the priority and anteriority of a truth by cherishing the imitation as the basic mechanism of the social world. Ideas are not things over appearances or are not those that reflect the order of nature and are not representations of things, but rather they are pions of the infinite inner-play of cultural evolution. Memetics ideas have no essence, they are always already copies, their order is not a pre-existing, intended structure, rather it is just a product of the random relationship of multiple, contingent factors, which have no center, no designing authority. In this sense, memetics seems compatible with the postmodern attempts of overturning the Platonic system and its dichotomies.

However, although many similarities can be found between the assaults of post-structuralism and deconstructionism to Platonism and memetics' suggestions, memetics has essential features of Platonism in its essence. While memetics seems to be a revolutionary idea against Platonism, it reproduces Plato's ideas and invokes the specter of Plato in the guise of evolutionary theory. There are really considerable parallelisms between Plato's account and memetic explanations. Memetics' invocation of Plato will be shown here in three main points.

First of all, Plato is known for his discovery of the theory of ideas, and genes and

memes used by memetics is similar to this theory. For Plato, "The world that appears to our senses is in some way defective and filled with error, but there is a more real and perfect realm, populated by entities (called 'forms' or 'ideas') that are eternal, changeless" (Kraut, 2011 p. 2). In Timaeus, Plato explicitly develops his theory of ideas, as Annas (2003) says:

> [For Plato] the real world is not, as we uncritically take it to be, the world around us that our senses report to us; the real world is rather what we grasp in thought when exercising our minds in abstract philosophical argument, in particular arguments which lead to what Plato calls Forms (p. 77).

Plato's ideas (form, pattern, style) are such things like absolute goodness or absolute beauty that are not to be found in the realm of sense experience, which philosophers must pursue them by pure reason. Abstract reasoning can only apprehend reality. Ideas like Just or Good that cause all the individual cases of just and good in phenomenal world, exist as entities inaccessible to our senses. What we see in this world are the objects that are similar to the ideas, in their imperfect manifestation. The reality of what we acknowledge as beautiful in the sense-experience is evaluated according to its ascendance to the real entity, the idea of Beauty. These ideas are eternal and unchanging. "They are not subjected to becoming or perishing. Each is always the same in itself" (Moravcsik, 1992, p. 69). True knowledge is the knowledge of these stable forms that partake in the sensible world and exist independent of this world. "Each form is what explains, is even cause of, those particular things at the phenomenal level that share its name and 'participate' in or 'resemble' it" (Rowe, 105). But, we can only reach adequate explanation of things only by knowing the ideas.

How can we obtain these eternal entities to find the real causes of the events and redeem ourselves from the illusion of sense, *doxata*? In order to reach a dependable knowledge Plato distinguishes four types of state of mind, only two of which lead us to the truth. First of them is *eikasia,* which means that apprehension of images and illusion. Second is *pistis* means belief about the visible world. These two ways of knowing are

doxata that is not leading us to the knowledge of reality. The other two ways is the real type of thinking *dianoia* and *noesis*. *Diaonia* is "both the process of reasoning used in mathematics and the state of knowledge resulting from it" (Melling, 1987, p. 106). It is deductive reasoning used in mathematics. But, the supreme kind of thinking is *noesis,* which means that "pure abstract dialectical reasoning which moves from hypothesis to first principles, about eternal intelligible realities"(Melling, 1987, p. 106). Noetic reasoning can lead us to the essence of things, to the realm of ideas. "But the weakness and needs of body distracts us from the perception of reality. The body's needs and its weakness distracts us, pleasure and pain exercise an obsessive influence on us which distorts our perception of reality" (Melling, 1987, p. 66). To Plato, one must abandon ordinary deeds and give importance to reckoning ideas to reach the reality of everything.

Now, let us remember what memetics says. For Blackmore's memetics all that we see in this world depends on the replicators: memes and genes. These phenomenal bodies and the notion of self as it appears to us are *doxa*, an illusion, in Platonic terms it corresponds to *eikasia* and *pistis*. The reality lies beyond our sensory experiences, it can only be reached by abstract reasoning. Genes and memes exist under the veil (*aletheia*) of illusions. Bodies are not real, they are just products of genes, which are unchanging, ever lasting, not perishing, the cause of everything in the living world and it is present (*parousia*) in every living being. What seems to us as ideas, beliefs, and selves are not real, but in reality there is a realm of memes, under the guise of self and ideas, which shape our sociality. In memetics, reality is divided up into two camps: the sensible world and the intelligible world. The latter is essential, unchanging and the former is accidental and perishing, just the bearer of the forms (genes). Our everyday experience is imbued with illusion, we espouse some ideas, we kill ourselves for some ideals, we devote ourselves to some certain individuals, but these are not real, they are the gene machines and the meme machines. And here is the core idea of Platonism, if we disport ourselves from these illusion and take memes eye-view, then the universe would seem to us different than what it appears to be. Ideas, bodies, species are just the reflections of memes and genes, which are eternal and can survive in variety of different bodies. A gene for altruism remains always as a genes for altruism, the same as itself. Similarly, a

meme for altruism, although variation is an essential figure in meme transmission and it is always proliferated by differentiating, remains the same, and variants of this meme can be determined to its sameness to the memes for altruism. Thus, the status of memes and genes in the memetic account is highly familiar to the position of ideas in Platonic account. Kronfield (2011) noticed this hidden essentialism, the politics of identity that operate at the bosom of Blackmore's memetics. She explains:

> It is important to realize that this "essentialism" is similar to the essentialism that is hidden in the modern concept of hard inheritance. Acquired changes are mere temporary, arbitrary, or even "imperfect" realizations of the gene. These phenotypic realizations change according to the context, but the gene stays the same – except, of course, when mutations occur. If memes are analogous to genes, and if there is something (i.e., the interpretation of the meme) that changes from context to context, whereas the meme stays the same, then memes have a context-dependent phenotypic "expression." If there is no such context-independent material realization of the essential Darwinism-meme, then this means that memes do not have a DNA, as genes have a DNA that stays the same in different organisms, despite different phenotypic realizations. Thus is the meme a purely abstract entity *without* a clear material identification? (Kronfeldner, 2011, p. 79).

Aunger also realizes the danger of essentialism in the account of Blackmore's memetics. If we cannot manage to show the physical materiality of memes, then memetics would become a Platonic theory in which replicator resides in the domain of Forms and interactors live among us. What is transmitted in inheritance of genes is not the physical gene, i.e., not phosphate, sugar or hydrogen bond, but information about a character. Evolution conserves not the atoms but the necessary information of genes. "A gene is just a kind of 'cybernetic abstraction,' a message that is transmitted in a kind of magical way from generation to generation" (Aunger, 2002, p. 138). Aunger realizes that the memes defined as a substrate neutral entity would become a Platonic idea. Because of this danger, he devoted his book to show the locus of memes to prove the materiality of memes. However Blackmore is unaware of this danger, even philosopher

Dennett was not aware of this hidden essentialism. What is funny, Dawkins, alien to all these dangers, puts forwards his theory in accordance with Platonism. He says:

> Plato would enjoy it: what passes down the line is an ideal essence of junk, of which each actual junk is an imperfect approximation" (Dawkins 1999: xii).

Dawkins overtly confesses the Platonic essence of his own theory, so there is no need to say more on the similarity between meme theory and the theory of ideas. But, Platonism in memetics is not limited to this similarity. The second similarity is the distinction between the soul and the body, and *techna* and *physis*, which are essential for Plato's thought. *Techna* means the human capacity to convert nature for his own purposes. "It includes science art craft, navigation, commerce and activities involved in legal procedure. The most important *techna* in modern society is publicity and advertisement"(Moravscik, 1992, p. 12). In *Gorgias*, the *techna* of rhetoric is condemned in contrast to the genuine knowledge of the first principle *episteme*. Human artistic skill is the secondary form of natural order. Harvey (2009) says:

> In the *Philebus,* the relationship between human artistic production and the activities responsible for order in nature is one of microcosm to macrocosm, and Socrates' comparison between the fire "in us" and the cosmic fire (hoion *pur esti men pou par' hêmin esti d' en tô[i] panti;* 29b9–10) shows that the principle operative at the micro level is importantly related to its macro level counterpart, the reason in the possession of Zeus (p. 19).

Natural order and human skill are similar but they are at different levels. *Techna* is dependent on human activity *(praxis*) and productivity (*poiesis*) and it is a teachable merit. Likewise, genes are responsible for natural order and memes are responsible for *technai*, the human skills and crafts that are transmittable. The distinction between *physis* and *techna*, nature and nurture survive in memetics in the form of the distinction between genes and memes. Further the soul-body opposition is a key feature in Platonism. "Indeed, he is often regarded as a paradigm of dualism, the position that soul and body (in modern versions mind and body) are radically different kinds of entity" (Annas, 2003, p. 65). Reasoning and self-motion is essential properties of soul for Plato.

Whereas bodies are temporal, the soul is immortal. The soul is the ruler and the director of bodies, the organizing principle of the bodies, the soul (*psyche*) is the life principle of living things and Platonists believe the soul is arrested inside the bodies and the task of the philosopher is reliving souls of bodies. However, in the Phaedrus we find that the soul is said to be immortal because "it is always in motion (or change), and its motion never fails because it moves itself, while everything else is moved by it" (Annas, 2003, p. 73). Non-living things are moved by the effect of an outside thing, but living things and souls are self-mover, they do not need to any other driving factors. Plato always gives priority to the soul over body in *Phaedrus*. He says:

> Every soul is immortal since the ever-moving is immortal. Anything, which moves something else or is moved by something else ceases to live when that motion ceases when that motion ceases. Only the self-moved never ceases to move, since it cannot be separated from itself; it is, on the contrary, the fount and origin (*arche*) of motion in other things, which are moved (245-c) (Plato, 1997, p. 523- 524)

Genes and memes are also immortal; they rule bodies and culture. They are self-mover: selfish genes and selfish memes move where ever they want. Natural selection as an organizing principle does not matter here, because genes and memes can do something contrary to the natural selection. Natural selection does not give them the power to move rather it is a principle to control their rate of spreading. Replicators can move independently, they have such kind of mystical power. Genes and memes also can be separated from bodies and minds, the latter can be perished but the former can always live. Genes appropriate in Dawkinsian theory as life principal like *psyche* and memes are the psyche of cultural life. Bodies, ideas, and artifacts are the vehicle of these souls, they are just temporal bearers of these soul-like replicator. Thus, again we can see there is an on-going similarity between Platonism and memetics.

Moreover, macro-cosmos has an organizing principle as living bodies have a soul. As Rowe suggests, "Platonism is a unified field theory" (Rowe, 2003, p. 108) just like Darwinism, which is termed by Blackmore as "Universal Darwinism". Plato

explains the structure of the universe in his famous book *Timaeus*. For him, *Demiurgos*, a divine Craftsman, designated the universe in accordance with the idea of Good, and dependent on a certain system. "Forms function as patterns for the Craftsman as he makes our world" (Annas, 2003, p. 84). Things, species, and the four primary elements design based on mathematical patterns of Forms. *Timaeus* has often been evaluated as "the mathematization of the world's underlying structure" (Annas, 2003, p. 90). Universal Darwinism claims there is an abstract algorithm that designs the world according to a superior Form, that is, blind selection. Evolution, which can be seen as Blackmore's *Demiurgos*, designates the world based on blind selection in a certain algorithm. Although there are considerable differences between the two accounts, a good many resemblances can be also seen.

Susan Blackmore's memetics has two essential feature of Platonism, that is, intelligible-sensible distinction and soul-body distinction, as well as the explanation of whole as an abstract form. Moreover memetics has another property of Platonic heritage. One of the most important notions in Platonism is *mimesis*- imitation, which is central for Blackmore as well. In the Platonic explanation, the relationship between ideas and the sensible world takes place in three different models. *Meteksis* (partake in), *Parousia* (presence*) and Mimesis* (imitation) (Arslan, 2010). Imitation plays a central role in Plato's explanation. In third book of *Republic*, Plato focuses on the topic of imitation and defined it as making oneself like another either in utterance or in external characteristics. Here, "the meaning of mimesis is restricted to representation or impersonation, and especially to representation in dramatic form and in literature" (Philip, 1961, p. 456). Plato sees this mimesis as representation and impersonation as degraded, but his move from that to "the mimesis as learning by imitation of behavior. This aspect comes up during the discussion of proper schooling for the guardians of the state" (Haskins, 2000, p. 9). Plato distinguished two kinds of imitation: imitation for making useful things as craftsmen's do is imitation with knowledge which is acceptable, but other kind of imitation is versatile imitation (*Mimetike*) which means imitation of everything to produce images and representation (*eidola*) that are used in tragedy, poetry, painting etc. (Belfiore, 1984). Imitation reappears as an issue in the tenth book of *Republic,* here; Plato extends the meaning of imitation and divides it into levels. A

divine Craftsman according to a model creates the forms, which produce the truth. Craftsmen of artifacts made their products by imitating the Forms; finally a painter is imitating what has already been imitated. A painter makes copies of a copy, then Plato condemn this kind of imitation, which lead us to the *phantasma* and *eidolon* removing us from the truth. The term mimesis is surrounding other crucial concepts of Plato "like image *(eidolon),* play *(paidia),* drug or antidote *(pharmakon)"* (Melberg, 1995, p. 12). Thus, imitation is a central Platonic term, which is also central to Susan Blackmore's memetic approach. Although two of them use the term in different context, the concept of imitation bears the seal of Plato.

Hence, it is possible to say that, memetics while at first glance seems to attack essentialism and Platonic heritage, when we probe a little further, we can see that memetics resurrects the soul of Plato in a twenty first's century context. Let alone pulling down Platonism, it is claimed that memetics is Darwinizing Plato. We can say: *A specter is haunting memetics -- the specter of Plato*.

In this chapter, it is pointed out that memetics has some problems with social sciences and philosophy. First of all, the problem of culture, to which memetics offers a solution, is ambiguous. By briefly reviewing the history of anthropology and philosophy of culture, we show that there is no single well-defined notion of culture in social sciences; and memetics definition of culture is an outdated one, which was used at the beginning of anthropology. Secondly, memetics is dependent on analogies, but it is claimed here, analogy can also be used in an operational and explanatory manner, rather than in an axiomatical fashion. If one uses analogy axiomatically then this work would become a rhetoric, rather than science. Further, analogies made by Blackmore and other memeticists are both explanatory and heuristically trivial. Thirdly, the ideological operation in the discourse of memetics is explored. It is claimed memetics, apart from working in atomistic modernist ideology and sustaining Comteian attempts of colonialization of social sciences, can be seen as a part of currently raising the Third Culture. With her trust in science and her daring to solve the impalpable problems of humanity in essayist fashion, Susan Blackmore is a good example of a member of the Third Culture. The relationship between the Third Culture and cultural studies is also

discussed. Finally, allegedly memeticists destroy Platonism and its essentialism; contrary to these ideas we claim that memetics reincarnate Plato in Darwinian theory.

CONCLUSION

Sigmund Freud once wrote about three major wounding blows to human arrogance throughout history. Freud (1916/) claims that two major blows attack the naïve narcissistic self love of men. The first one is the Copernican Revolution, which taught us we stand not at the center of the universe, but in a tiny fragment of an immensely vast universe. The second blow came from biology. Darwin's theory showed human beings are just a descent line in the evolutionary process and have a close relationship with the animal kingdom. This theory, then, destroyed humans allegedly privileged position in universe. Finally he counts his discovery of the notion of ego as a most wounding blow, because psychoanalysis displayed human will; decisions are not most of the time free, but obscured by the unconscious. Can one add memetics as the fourth blow to this list? Indeed, memetics tries to show our ideas, beliefs, artifacts, in short the entire domain that seems to be unique to human beings are just the outcome of the survival of memes that takes place out of our control. In this respect, does it not seem like Freudian unconsciousness? Memes can be seen as atomized units of unconscious, genes as id, and memeplexes as super-ego. If so, then why has memetics failed to influence us as rigorously as the above-mentioned theories?

In this dissertation, I examined the suggestions and shortcomings of memetics as a Darwinian theory of cultural evolution. Evolutionists have developed various different models in order to shed light on human beings' extraordinary capacity for acquiring knowledge and transmitting such knowledge, in a word, the mystery of culture. Why is this complicated cultural heritage only developed through humans, who are in a biological domain? Although, all creatures consist of the same basic materials, humans have obviously a different trajectory in history. Humans' capacity for using language and some useful information is for survival gave rise to the formation of culture. When

one embarks on the explanation of this phenomenon without resorting to any given or supernatural factor, it is necessary to resort to the theory of evolution, because the object of study, i.e. culture has been partially changing but also partially can be transferred to other generations without variation. This fact immediately conjures up the applicability of Darwinian theory of natural evolution to cultural evolution. As mentioned above, most known among them are sociobiology and evolutionary psychology, which focus on the benefic of culture in terms of genetics and basic biological needs. In fact, these disciplines bring considerable insight to evolutionary theory, also some eminent scientist such as Cavalli-Sforza, Durham, Lumsden and Wilson, and Richardson and Boyd, who seek to develop a gene-culture co-evolution models with complex mathematical functions and their dual-inheritance models takes the importance of culture into account, not just seeing culture as a product of natural evolution.

However, memetics emerged with a new claim that there is a unit of culture analogous to genes, which as unit can replicate independent of biological needs. As presented in second chapter, this claim was first introduced by eminent scientist Richard Dawkins, and then put together into a structure and mechanism of the mind by Daniel Dennett. These two accounts are presented as the background of Susan Blackmore's memetics. Then, Susan Blackmore's memetic approach is outlined. In the first two chapters.

In the second half of the dissertation, I focus on the shortcomings of mentioned approach. In the fourth chapter, some of the criticisms of Susan Blackmore from inside of memetics are summarized. By the phrase "inside memetics" I mean those academicians, who published works in the field of meme theory. The first two sections of this chapter, I discussed Susan Blackmore's indefiniteness on the issue of the location of memes. Blackmore did not answer the question where memes are stored. She simply leaps over this problem and regards it as a nonessential issue. However, it is claimed this question can determine the entire trajectory of memetic researches. Its answer would become an epistemological starting point for studies and experiments. As presented in two distinct poles, taking mentalist or behaviorist position can lead memetics to different aims and conclusions. For the behaviorist camp, since one cannot show the locus of

memes in the brain, memetic investigations should limit itself with the observable artifacts, and should seek to explore the frequency rate of a meme in the population. Doing this would rescue the concept of meme from being just a metaphor and lacking from experimental research. On the contrary, according to the mentalist camp, meme theory can only be asserted if the neuronal or mental correspondence of memes would be shown. The location of memes must be in brain, and the entire research program of memetics must focus on neuroscience or brain studies. As shown, these two camps are considerably different, so a new theory that does not choose any of them must give adequate justification. If one would like to transgress these two limited positions, one should necessarily give adequate arguments that can either reconcile the two camps into a higher synthesis or create an original method. However, Blackmore does not choose any of these positions regardless of sufficient explanation. She simply circumvents this problem by referring to the development of other reliable sciences. She says genetics could develop prior to the Watson-Crick model; as such memetics might develop without defining the structure and location of memes. But this rhetorical justification is not sufficient to stave off the epistemological problems of Blackmore's account. Further, for Blackmore, the essential character of what she calls Universal Darwinism is its substrate neutrality. Darwinian theory is applicable regardless of medium; it can operate either in nature or in culture. Memes are also neutral in terms of substrate and thereby the theory of memetics can be improved without determining any certain space for memes. Robert Aunger terms this theory functional equivalence. According to the functional equivalence insight, as long as two processes can exhibit the same input-output relationship, their intents and purpose can be seen as the same regardless of how the different mechanism work inside them. But a sequence of genes on a computer disc, in a cell, or on a paper would have very different meanings. This sequence can only work in cell; in the other media it has no meaning. Hence, we cannot simply put aside the problem of medium because many times context determined the meaning of the text, or the medium affects the message. For preventing this simplicity Aunger seeks to conceive a theory of memes that is limited to the brains. He attempts to find a meme in the neuronal nexus and put forward the notion of neuronal meme or millisecond meme. Aunger's account did not succeed per se, the reason for review of this account is to

display that memetics can be considered more scientifically and a memeticists can cope with the substrate problem in order to reach a dependable consequence. Unfortunately, Susan Blackmore does not want to lose time with these issues, she craves for presenting how memetics can be a panacea for all the problems of humanity.

Apart from this epistemological imperfection, the notion of imitation is also debatable. Susan Blackmore (1999) places this concept at the center of her account. She defines "a meme is that whatever it is that passed on by imitation" (p. 43). So much so that, she claims to be human is to imitate. For Blackmore, meme theory, and also culture as well, is exclusively about imitation. The only way for cultural transmission is imitation. As presented in the third section, imitation is insufficient to account for all the social transmissions. Taking into account the acquisition of language, it can be can seen that the grammar and rules of a language are not acquired by observing or imitating somebody else. Infants internalized the structure language without copying their parents. Thus, some elements of cultural transmission go beyond the scope of imitation. Accordingly, psychologists such as Rosarie Conte and Henry Plotkin claim that although imitation plays a considerable role in the cultural evolution, it cannot be regarded as the only mechanism, other ways of transmission such as social learning, local enhancement must be embraced by memetics. Conte also claims that memetics should take into account agents. Since determining what part of a behavior is necessary to imitate and who is the best for imitation requires always the decision of an autonomous intelligent agent. Susan Blackmore excludes the idea of self and autonomous agents from her account, but this made it self-contradictory. David Hull also puts forward that the levels of memetics must be stratified. Deep memes such as the use of language, walking, or driving a car, and shallow memes such doing origami, using some tools should be distinguished. But, Susan Blackmore puts all these differences in the same ballpark. Kate Distin also explores some inner contradictions of Blackmore's notion of imitation. Thus, it is claimed that imitation as the central point of Blackmore's approach is ill defined, self-contradictory and insufficient to account for cultural evolution.

Besides, Blackmore claims extraordinary capacity of imitation makes humans special in nature. She asserts that true imitation is peculiar to humankind. This paper

discussed these ontological claims under the title of anthropocentric bias. Here, she does not talk as a scientist; rather she recounts common prejudices on the narcissism of the human species. As Laland and Odling-Smee adduce there are forms of imitation in nature equal to what Blackmore defines as imitation. They bring proof from zoology. For example the preference of certain diet among successive generations in rats, or milk bottle-top opening tits in Britain, potato washing macaque monkeys are examples of imitation in the animal kingdom. Thus, it is claimed that Susan Blackmore does not use scientifically proven fact, but many times she uses metaphysical claims. Corresponding to this issue, in the final section of this chapter, this work handles some methodological issues in Blackmore's account. It is suggested that Susan Blackmore's memetics has no dependable philosophy of science and no generally accepted methods. She also in many cases befuddles science with metaphysics. She puts forward the idea of self is illusion without depending on any scientific experiment. She says the increase of the brain size is caused by memes, but she put forward this with a "just so" story. Susan Blackmore's memetics is imbued with those kinds of "just so" stories that are not dependent on objective scientific data. She also makes some ontological assertion about the essence of human being, the reality of mind, the future of the evolution, which do not depend on experimental analysis, so what we read on Blackmore's pages are not the science of memetics, but fantasies, biases and hopes. Her account has no methodology of science and also has no empirical support. These make her account unreliable. Thus, in the fourth chapter, some criticisms about Blackmore from within memetics are discussed.

In the fifth chapter, Blackmore's approach is evaluated in terms of the concerns of cultural studies such as anthropology, power relations, rhetoric, narration, philosophy of science, ideology, and so on. Although, Susan Blackmore's approach can be questioned by social scientists in various respect on the details, this work just handles some initial theoretical issues. In the first section, the matter of culture, for which memetics offers interesting solutions is in focus. Different visions on the notion of culture throughout the history of anthropology are presented. It is presented that there is no a single, commonly accepted, clear-cut definition of culture in anthropology. What memeticists espouse is an ideational definition of culture. This definition acknowledges culture has some properties of societies such as ideas, religions, institutions, art, music, customs etc. and

has a general capacity of human shared by all societies that evolve through cumulative progress. There are two major approaches to culture, i.e. the German romantic tradition notion of *Kultur* and the Enlightenment's notion of civilization. While in the German tradition culture is a form of consciousness that discerns one nation from another, Anglo-Saxon tradition regards culture as a general shared property of humans that separates human beings from nature. Obviously memetics accepts the second conception of nature. However this is a very simple definition, which was made at the very beginning of the discipline of anthropology and set aside important details. Memeticists' social science- blindness leads them to overlook these important definitional problems. We can see that Susan Blackmore's memetic approach has no definition of culture, and while she explains some cultural phenomena she never refers to any important notion of anthropology such as language, sign, function, class etc. Further, I discussed whether culture could be treated through atomized units. I claim that most part of the culture cannot be compartmentalized and also a great deal of the parts of culture consists of senses that are not transferable units. I give the example of eating insect to show that this is a cultural sense that we do not learn from anybody. Thus, this paper confers that memetics reinvents the wheel because of its ignorance about the discussions in anthropology.

Memetics is also dependent on some basic analogies and certain syllogisms. At the very beginning of the memetic project, Richard Dawkins argues cultural evolution is analogous to natural evolution. This resemblance is a pre-experimental unproven claim. It is claimed that analogy can only be used in science in operationally or explanatory manner, but not axiomatically. Axiomatic use of analogies makes memetics like rhetoric. By referring to the Middle Age use of analogy and Foucault's assessment of analogy as a way of thinking of the pre-modern world, in this work it is claimed that analogical thinking is not suitable for science. Blackmore also constructs a syllogism for her notion of Universal Darwinism. She says if a phenomenon has the properties of variation, selection and retention, it must be examined in a Darwinian paradigm, given culture has the properties of changing, selection and heredity, and hence, culture must be examined in Darwinian paradigm. This work asserts this is a conditioned syllogism, which is formally valid, but is invalid in terms of content. There is no relation of

necessity between the premises. Firstly, how can we claim Darwinism mean the necessity of variation, selection, and retention when there are different interpretations of Darwinism, such as population thinking? Also, selection that is purported to take place in the cultural domain is the same with selection in nature, namely, blind selection. This paper claims there is not only one version of selection; there can be blind selection, guided selection or unjustified selection. Which kind of selection operates in the cultural domain is ambiguous. Blackmore also uses the analogy between natural units and cultural units, and claims culture consists of distinguishable units. These units are also selfish similar to selfish genes. Kronfeldner evaluates these two analogies; she claims that these three kinds of analogy used in memetics are scientifically unworthy, because they are explanatorily and heuristically trivial.

When it comes to ideological analysis of memetics, this work claim that memetics reflects certain modes of thinking and works in a certain economic-political climate. First of all, memetic writers including Blackmore use both memetics and genetics to serve their beliefs. They zealously struggle against religious beliefs, so I call them atheist apologetics. Blackmore's and other memeticists trusts in science, their use of science as a model to explain society can be seen as a continuation of Comteian positivist attempts to create a social science similar to natural sciences. Besides, as Lewontin suggests atomistic thinking of culture reflects those approaches of modernity, which see individual as the basis of society. These individuals are selfish, individualistic; compete to win the struggle for survival one-way or the other. These properties are reflecting modern Western values that give rise to considerable troubles such as colonialism and racism. The meme theory also claims that memes are responsible for everything in the human world, so it justifies all social inequalities, all dominations and power relations. Thus, it is claimed here claim Susan Blackmore's memetics expresses some basic values and prejudices of modern Western society in her theory. I also suggest that memetics can be seen as a member of the rising ideology of the Third Culture. John Brockman introduces this notion in reference to those new scientists who gain popularity throughout the world and moderate the beliefs and attitudes of contemporary society. According to Brockman, the public intellectual is outmoded today; some of the new scientists can express their ideas fluently and also deal

with the core issues of humanity such as the meaning of life, the future of universe, the reasons of our behaviors etc. However, the Third Culture is an updated version of positivism and will eventually fail to capture these problems, which exist beyond the scope of science.

Last but not least, this work also deal with a well-known claim that Darwinism pull down essentialism and Platonic heritage. Both Dennett and Blackmore advocate this assertion. Indeed, what memetics try to do is very similar to what post modernist such as Derrida' and Deleuze's attempts to overturn Platonism, and identity politics. Memetics put forwards that ideas are not represent the reality, or they has no essence, they are just copies of the copy. It looks like Deleuzian simulacra. But ıf we probe a little further, the close relation between memetics and Platonism can be seen. Memetics has certain features of Platonism. First of all, it divides reality into two pole, the appearances (phenotypic expression) and replicator (genotype or memotype). Replicators are always remains the same and reproduce in every different expression in the world of sensibility. They are permanent and unchangeable. They are the hidden cause of the all apparent reality. It is obvious that the role given to Ideas in Platonic account is similar to role given to replicators in memetic explanations. Also, memetics has sharp *episteme-doxa* and t*echne-physis* distinctions. There is human world, *technai* and a natural world. These domains are ruled by different powers. Replicators like platonic soul are eternal and unchangeable and use bodies as a tool for themselves. Imitation is also a key Platonic figure, which also stand at the center of Blackmore's account. What is transferred when the replication of a meme and genes is not material things such as atoms, hydrogen, or sugars but rather a kind of instruction? The relationship between the structure and function is still indefinite. Thus, it is claimed in this chapter, memetics' claims about pulling down of Platonism and essentialism are not acceptable. Memetics regenerates Plato trough contemporary science or to put in another way it Darwinizes Plato, let alone gets rid of it.

As a conclusion, this works suggests that memetics can be seen as a good example of cultural evolutionist model that does not reduce culture to nature. However, it introduces an ambiguous concept, the meme: the unit of culture; by doing so reinvents

nature-culture dichotomy. Susan Blackmore's memetic approach has a number of theoretical and methodological shortcomings. Further, her incompetence about social sciences makes her account simplistic. Use of unscientific analogies, pre-experimental claims that go beyond the limits of science, and some basic biases of Western culture have made her account of cultural evolution a kind of rhetorical work seeking to convince people as to its usefulness. The memetic project that takes biological sciences as a model for humanities can be seen as another attempt of colonialization of social sceinces by natural sciences. It is the latest fashion of positivism, but like previous attempt, it is doomed to failure.

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