The Nature of Consciousness: A Critical Study in Philosophy of Mind

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By

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CERTIFICATE

This is to certify that the thesis entitled *"The Nature of Consciousness: A Critical Study in Philosophy of Mind"* being submitted by Subhashree Mohanty in partial fulfillment of the requirements for the award of the degree of Doctor of Philosophy in Philosophy is a record of the bona fide work carried out by her under my supervision and guidance.

This thesis has not been submitted previously either in part or in full to any other university or institution of learning for the award of any degree.

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I hereby declare that **this** thesis entitled " *The Nature of Consciousness: A Critical Study in Philosophy of Mind"* submitted for the award of the degree of Doctor of Philosophy in Philosophy to the University of Hyderabad. embodies the result ol'bona fide research work carried oul by me under the supervision of Prof. R. C. Pradhan. It has not been submitted either in part or in full for any other degree or diploma to this or any other university.

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To

My Loving & Respected

Parents

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CONTENTS

INTRODUCTION

The notion of consciousness is central to the philosophy of mind. It is generally believed that consciousness is an inner, private, subjective, qualitative phenomenon of awareness. But many philosophers contest this belief. For them, consciousness is what is manifested in public physical behaviour. Thus there are two types of philosophical analysis of the concept of consciousness. Some say that consciousness is real and subjective and others say that it is nothing other than human behaviour and other physical activities. Thus there is a debate as to the relation between conscious mental states and physical brain states.

In this study an attempt will be made to understand the logic of the conscious mental states as distinguished from the brain processes. The method of this study is critical and analytic and not empirical. It focuses on what constitute a conscious mind and what the details of the mind are. In this project my aim to discuss the nature of consciousness from two standpoints such as the reductionist view of consciousness and the non-reductionist view of consciousness. The materialist theories of consciousness, functionalism, and computationalism represent the reductionist point of view as they try to prove that consciousness can be reducible to physical states. Whereas the non-reductionist theories prove that consciousness is not reducible because it can be realized only from the first-person point of view, and that it is subjective and it has phenomenal qualities.

In Chapter 1. I will discuss the nature of consciousness, and its place in the philosophy of mind. The term "consciousness" can be used to describe any mental state or any state that is conscious. Consciousness stands for all the conscious state of mind. It is necessary for a person to know or be conscious of his or her own mental state. According to Searle, consciousness is a biological feature of every human brain and certain animal brains. The special feature of the human brain is that it differs remarkably from other biological organs in its capacity to produce and sustain all of the enormous variety of our conscious life. Consciousness is the hard part of the mind-body problem. What essentially is the relationship between the events that take place inside the brain and those private subjective.

introspective experiences that together constitute our inner mental life? David Chalmers discusses this problem with regard to the connection between the physical and the psychological, and the link between psychological and phenomenological. He divides the problem of consciousness into two parts such as easy problem and the hard problem. The easy problem is regarding explanation of consciousness in terms of the cognitive junctions such as discrimination, integration, the control oi* behaviour, etc. The hard problem is regarding why these functions should be associated with phenomenal experiences.

In Chapter 2. the main question is what is the real nature of mental states and processes, and how they are related to the physical world. There are materialist theories of mind, which claim that what we call mental states and processes are merely sophisticated processes of the complex physical system like the brain. That is. each type of mental states or processes is numerically identical with some kind of physical states or processes within the brain or central nervous system. Behaviourism claims that consciousness is nothing but the physical behaviour of the conscious being. It is not an inner process or event. Other forms of materialism such as physicalism and the theory of mind-body identity also do not admit the independent existence of conscious mental states. Thus the various kinds of materialist theories claim to explain away consciousness by taking the brain processes as central to the philosophy of mind. But. ontologically, the mental phenomena in question can exist independently and have all of their essential properties independently of any behavioural output.

Chapter 3 gives details about functionalism, cognitivism and consciousness. According to functionalism. mental phenomena are defined in terms of the external input and the observable output. So mental states are defined by their causal relations. 'There is nothing specifically mental about the so-called mental states. 'These consist entirely in their causal relations to each other and to the inputs and outputs of the system of which they are a part. There are only causal relations between consciousness and brain processes. However, functionalism itself has been shown to fail to explain consciousness in terms of the mechanical model of the mind. Because it fails to prove the qualitative aspect of mind- what it is like to be conscious. The computational model of consciousness is not sufficient

for explaining consciousness because computations are defined syntactically. Artificial intelligence explains how computational models are developed in problem solving and other cognitive activities. Cognitive science aims at understanding human cognition by developing a theory of mental representations which are computational in structure. We, the human beings, are, however, semantic systems while a computer is a syntactical system. The point is that the machine cannot be conscious and the cognitive mental states and processes are always related with the phenomenon of consciousness.

Chapter 4 is about the non-reductionist approach to consciousness. Consciousness cannot be reduced to any physical states. That is, the mental states are not reductively explainable. Searle argues that we invariably and certainly study consciousness, implicitly or explicitly, while learning about the phenomena of the mind. The basic reason is that our notion of the mental is not different from that *oi'* consciousness. The mental phenomena are essentially connected with consciousness, and because consciousness is essentially subjective, it follows that the ontology of the mental is essentially first-person in character. The view is that the computational theory of consciousness is too inadequate to explain the nature of consciousness. Our knowledge of consciousness comes from our own experiences and not from any external observation. The non-reductionist allows that consciousness supervenes naturally on the physical for the reason that the physical laws are fundamental to the universe. Chalmers holds the view of property dualism in which consciousness 'naturally" supervenes, but does not 'logically' supervene on the physical.

In Chapter 5, I will discuss the relation between consciousness, subjectivity and qualia. Subjectivity and qualia are the most essential features of consciousness. The subjectivity of consciousness is an essential feature of mental states, which can prove that the mental states arc the irreducible facts of first-person ontology. The qualitative character of experience is what it is like for it's subject to have the experience. Thomas Nagel's notion of subjectivity, as outlined in his "What it is like to be a bat?" proves the idea of an irreducibly subjective character of experience. The fact is, we can know the physical facts about bat but we do not know what it is to be like a bat. The subjective experience of the bat is

beyond our comprehension. Searle argues that subjectivity is the most important feature of conscious mental states and processes, which is not possessed by other natural phenomena. Qualia are the qualitative subjective experiences of mental states and the properties of conscious experience. Are these subjective experiences or qualia real? It is a controversial question among philosophers whether qualia are definable in functional terms and whether qualia are the physiological states of the brain. Our conscious mental states have distinctive qualitative features. In case of consciousness qualia-inversion is possible because qualia are the properties of the mental states, which cannot be ascribed to the physical and machine states.

To conclude: 1 defend a non-reductionist theory of consciousness which admits the reality of conscious mental phenomena in a first-person ontology.

CHAPTER 1

THE NATURE OF CONSCIOUSNESS: CENTRAL ISSUES IN THE PHILOSOPHY OF MIND

Consciousness, as most of us are aware, is the central notion in the philosophy of mind. As a widely discussed topic, consciousness is interpreted variously by a number of philosophers. For some, it denotes 'an inner, private, subjective, qualitative phenomenon of awareness." For others, who object to this view, consciousness manifests itself in public physical behaviour. But consciousness stands for the present state of mind. It is necessary for a person to know or be conscious of his own mental state. Consciousness, according to the naturalists, is a biological feature of even' human brain and of all animal brains. It is caused by neurobiological processes and is as much a part of the natural biological order as any other biological feature such as photosynthesis, digestion, etc.[1] It includes not only an awareness of our present mental states, but also an awareness of the states that are yet to be recognized. The human brain is an organ like any other in a biological system. Its special feature is that it differs remarkably from other biological organs in its capacity to produce and sustain all of the enormous varieties of our conscious life.

However, generally, the term consciousness is used to designate any mental state that is conscious, whether it is the present mental state or the one that is yet to be recognized. In this chapter, we will discuss the nature of consciousness and its place in the philosophy of mind.

I. What is Philosophy of Mind?

Philosophy of mind studies the problems related to mind and consciousness. It is broadly a study of the philosophical questions related with the mind and its properties. It raises questions as to whether mind is distinct from the body or a part of it like the brain, and whether the mind has properties such as consciousness. Philosophers of mind generally assume that 'minds' are objects of

a certain kind that are somehow related - (perhaps causally, perhaps by identity) to other objects, such as bodies or brains. When we say that people "have minds' we mean that they feel, see. think, reason and so forth. They have experiences like sensation. perception or thought. In other words. the philosophy of mind is the philosophical study of the subjects of experience. It is concerned with the philosophical analysis of the mental or psychological concepts. The philosophy of mind is related with metaphysics because it has to say something about the ontological status of the subjects of experience. There are two metaphysical questions in philosophy of mind. The first one is whether persons or subjects of experience are identical with their physical bodies. or certain parts of them such as brain. The second is whether the mental states of persons like thoughts and feelings arc identical with certain physical states of their bodies. like neuronal activities in their brains. A person or subject of experience has both states of consciousness, and physical shape. mass and location.

The primary responsibility of Philosophy of mind is to study the mental phenomena and to analyze the concept of mind, consciousness, etc. in their multifarious aspects. Philosophy of mind is particularly concerned with the nature of consciousness. which is related with all mental phenomena such as hearing. remembering, imagining. considering, expecting. etc. Consciousness is presupposed by all mental activities. One must be conscious in order to feel happy, make a decision. deduce a conclusion. and so on. There are other mental states which presuppose not that the subject is actually conscious at that time. but merely that he has been conscious at some time: only of a being that has been conscious, we can say that now he is in coma of that he is unconscious. So philosophy of mind is concerned with all mental phenomena that exclusively involve beings capable of consciousness.

What is consciousness'? To answer this question. we can say that consciousness is something. which distinguishes man from a good deal of the world around him. It may be said to be the central feature of mind. According to Descartes. "the essential thing about human beings is that they are thinking substances."[2] That is, man is essentially a mental being. In the present life, our minds are intimately united with our bodies, but it is not our bodies, which make

us what we really are. The essence of mind is consciousness: one's awareness of one's own thoughts and their objects. That is why. according to Descartes, "all other animals are merely complicated, but unconscious, machines."[3] Many philosophers accept Descartes' view that the mental realm is the realm of consciousness. For them, consciousness is an object of introspection, something we can inwardly see when we look within ourselves. They believe that it is an inessential, contingent matter and that it has a connection with expression in speech and behaviour. So, for them, consciousness is something to which each of us has direct access in our own case.

For the contemporary philosophers, consciousness is basically a cognitive process. It is the perception of what passes in a man's mind. According to many philosophers, consciousness cannot be explained in any scientific way because it is a purely subjective process. For functionalism. consciousness is what happens when certain processes run in our brain in a mechanical fashion. According to many others, consciousness is not just a brain process, as. it is something very different from the mechanical processes of the brain.

The phenomenon of consciousness is familiar and obvious because we are conscious at every moment of our waking lives. According to J. Kim, "'conscious' is just another word for 'awake', and we know what it is to be awake, or to awaken from sleep, anesthesia, or a momentary loss of consciousness caused by trauma to the head."[4] Moreover, consciousness seems to be the central and crucial feature of our mental life. We are all conscious creatures, but amoebae and trees are not. We are not conscious at every moment of our existence: we are conscious when we are awake, and not ful'y conscious while in a deep sleep. We are conscious or aware *of* things, states or facts, sensory states and events. Pains, itches and mental images are conscious states and events. Emotions, such as anger, joy and sadness are conscious states, and many of our beliefs, desires, hopes and memories are also conscious states. Kim writes: "Can we say something like this: A state of a person is a conscious state just in case that person is aware, or conscious of it? It seems true that if a given state is a conscious state. the person whose state it is must be aware of it. Yet it is clearly not true that if you are aware of a state, then that state is a conscious state."[5]

Wittgenstein says that consciousness "is life itself."[6] Jt is in this sense that consciousness is deemed the metaphysical reality that precedes all modes of our understanding. Johnston. while commenting on Wittgenstein, writes: "to understand the concept of consciousness. we do not need to define or describe it. but to recognize what is involved in saying that someone is conscious. What is important is not a description, but an understanding of the significance of the concept."[7] Thus, consciousness can be best understood by situating it in the appropriate forms of life. As Searle puts it. consciousness simply means "those subjective states of sentience or awareness that begin when one awakes in the morning from a dreamless sleep and continues throughout the day until one goes to sleep at night, or falls into a coma or dies. or otherwise becomes. as one would say, unconscious."[8]

Above all. consciousness is a biological phenomenon. In other words. consciousness is a part of our natural biological history. along with digestion. growth, mitosis and meiosis. For Searle. "consciousness is exclusively a biological process. it is much more than that: it possesses several features that other biological processes do not."" There is a sense in which each person's consciousness is private to that person, a sense in which he is related to his pains. tickles. itches. thoughts and feelings in a way that is quite unlike the way that others are related to these pains. tickles, itches. thoughts and feelings. Therefore. the conscious states possess a qualitative character due to which they are often referred to as qualia. Searle remarks that consciousness occupies the central position in the discourse of the mental state. The centrality of consciousness as a constituting factor of mental life not only defines other co-features but also establishes consciousness itself as an intrinsic life property. So. understanding the notion of consciousness needs to be seen or experienced from various points of view, i.e.. both form the first-person point of view as well as the third-person point of view. The first- person point of view gives an account of the subjective experience of the phenomena, whereas the third-person point of view brings forth the inter-subjective realizability of the phenomena.

Naturalists like Owen Flanagan, Daniel Dennett, Paul Churchland, and Patricia Churchland have argued that consciousness is a natural phenomenon and that we can construct a theory about its nature. forms. roles, etc. through psychology, phenomenology, cognitive science and neuroscience. They take conscious experience as a phenomenon or set of phenomena to be explained. Many philosophers regard consciousness as a mystery. According to Dennett. "Human consciousness is just about the last surviving mystery. A mystery is a phenomenon that people don't know how to think about—yet."[10] For the mysterians, consciousness just cannot be explained. Consciousness is something, which makes us "aware" of ourselves and of the things that surround us. Since consciousness is presupposed in all our mental activities, it explains the mental phenomena but cannot itself be explained. As Dennett writes:

> ...consciousness, like love and money, is a phenomenon that does indeed depend to a surprising extent on its associated concepts. Although, like love, it has an elaborate biological base, like money. some of its most significant ieatures are borne along on the culture, not simply inherent, somehow, in the physical structure of its instances. "

Flanagan provides a constructive naturalistic theory of consciousness in which consciousness is taken as a set of events and processes that share the property of being experienced. Consciousness is essential to human nature and to the human mind. In this connection, McGinn remarks. "Naturalism about consciousness is not merely an option. It is a condition of understanding. It is a condition of existence."[12] He describes consciousness as having two major axes, like (a) embodiment. which connects consciousness to the body and brain, and (b) intentionality, which connects consciousness to the objects and properties that are represented by conscious states.

Recent research in cognitive science has helped us decipher human behaviour and the processes that bring it about in a better way. Among such researchers is David Chalmers who is acknowledged to be holding on optimistic view of consciousness. Consciousness is a fascinating but elusive phenomenon; it is impossible to specify what it is. what it does, or why it evolves. Chalmers commences his discourse by arguing that the research methods adopted by neuroscience and cognitive science have foiled to explain consciousness. He feels

that it is not proper just to redefine consciousness in terms of categories concerning the behavioural and cognitive functions. There are three important points regarding Chalmers" discussion on consciousness. Firstly, his view of consciousness is precise in the sense that it relates directly to experience. This is where one's intuition also comes into the scene. For him. it is difficult to prove the very existence of consciousness, as '... proof is inappropriate.'[13] The fact that consciousness really exists can be only 'felt', for which one's intuition becomes a tool. Secondly, Chalmers does not wholly depend on the idea that all behaviour can be accounted for in physical terms. Finally, he considers consciousness as a natural phenomenon that is governed by natural laws. According to this view, consciousness is strictly an important part of nature so long as it occurs in human beings and other animal species. Chalmers also brings in the point that the fundamental natural laws that govern consciousness may or may not be physical in nature. keeping the possibility open that there are psychophysical laws.

For Chalmers, the issues of consciousness belong to the domains of both science and philosophy. He therefore argues that problem of consciousness needs to be explained in philosophical terms as scientific explanations are not adequate. We are all very intimately related to consciousness. So much so that we are almost possessed by it. But none of us can adequately comprehend what consciousness or conscious experience really means. Our acts of perceiving, thinking and eventually acting do not occur in a vacuum. These are the results of a dynamic cluster of causations and information processing. These processes make one 'feel' things. This internal aspect is known as 'conscious experience*. These conscious experiences are prominent parts of the inner line of the mind.

According to Thomas Nagel, "an organism has conscious mental states if and only if there is something it is like to be that organism -something it is like for the organism."[14] Similarly, a mental state is conscious if there is something, it is like to be in that mental state. Or we can say that a mental state is conscious if it has a qualitative feel or quality of experience. Such qualitative feels, also called 'qualia', are termed as phenomenological qualities. An explanation of these qualities is central to the description of consciousness itself, and this lies at the core of the mind-body problem. Nagel points out that consciousness can be

described only from the first person point of view. According to him, the third person account finds it problematic to explain how consciousness is possible in a purely physical universe.

For Chalmers, "Consciousness" is an ambiguous term. At times, it stands for a 'cognitive capacity', and at other times, the ability to investigate and / or report mental states. Sometimes it denotes our ability to focus attention, and at other times, our power to voluntarily control our behaviour. It is used synonymously with 'awakeness'; it also means 'to know about something' in some other instances. In this case, Chalmers makes it clear that he would consider consciousness as the "subjective quality of experience - what it is like to be a cognitive agent."[15] He points out that, of all the terms that are found (almost) synonymous with "consciousness", 'experience' is the most important one. Here Chalmers provides a list of conscious experiences such as visual, auditory, tactile, olfactory, taste experiences, such as hot and cold, sensations of pain, other bodily sensations, conscious thoughts, emotions and the sense of self with adequate explanations.

Contemporary cognitive science has delved deep into the processes of the mind. It has provided explanations of behaviour, and has considered the 'internal basis of behaviour". Mental states are related to the causation and explanation of behaviour. According to Chalmers, "such states may or may not be conscious."[16] And in cognitive science, an internal state that causes behaviour is mental, whether it is conscious or not. That is why, he describes two separate concepts of mind — phenomenological and psychological. The former explains that the concept of mind stands for conscious experience, and that a mental state is a conscious experience. The psychological concept of mind states that mind is the causal or explanatory basis for behaviour. According to this idea, a state can be called mental only if it plays a strictly causal part in the production of behaviour, or if it appropriately explains behaviour. Therefore, consciousness has a dual nature as "phenomenological" and "psychological". Consciousness is phenomenological when it has some 'phenomenological quality'. However, consciousness also stands for some psychological properties such as reportability or introspective accessibility of information. There are also some varieties of

psychological consciousness such as awakeness, introspection, reportability, self-consciousness, attention, voluntary control, knowledge, etc

Chalmers states that with each of the above-mentioned forms of psychological consciousness is intricately woven a phenomenological element. Each of these mental concepts is dual in nature. Since notions such as self-consciousness have a psychological character, experience, which is phenomenological consciousness, may also be assumed to have a psychological feature associated with it. The psychological character of phenomenological consciousness is termed as "awareness". Psychology and phenomenology together constitute the central aspects of the mind. As defined earlier, awareness is one's ability to access information, analyze it and use it in an appropriate manner and in the befitting contexts. It is a functional notion, as it needs accessing information through behaviour. Chalmers moves on stating that awareness always accompanies phenomenological consciousness, though it is not necessarily accompanied by consciousness. "One can be aware of a fact without any particular associated phenomenological experience…"[17]

However, the notion of awareness, if extended in some particular ways, may co-occur with a similarly extended version of phenomenological consciousness. Being a psychological property, awareness does not pose too many metaphysical problems. There is a lot of scope in both the fields of philosophy and cognitive science to fathom the significance of the concept of 'awareness'. The phenomenological consciousness is the central problem in cognitive science and philosophy as well. "Even after we have explained the physical and computational functioning of a conscious system, we still need to explain why this system has conscious experience."[18]

II The Nature of Mind

In this section, we will discuss the nature of mind and how consciousness is related with the mental phenomena. What exactly is the mind? One popular view is that minds are just brains. Another is that minds are software routines running on neurological hardware. Human beings have minds; it means that they perceive,

they have sensations, emotions, beliefs, thoughts, purposes, desires, etc. So the question arises: What is it to have a mind? What is it to perceive, to feel emotion, to hold a belief or to have a purpose? Many contemporary philosophers think that the best way to know the nature of mind is to understand the discoveries and hypotheses of modern science concerning mind. According to modern science, mind is nothing but a physico-chemical mechanism. In traditional philosophy, mind is a mysterious inward arena and is responsible for the physical behaviour of our bodies. For Descartes, this inner arena is like a spiritual substance. Mind, according to Descartes, is a thinking substance. However, the materialists and behaviorists reject the Cartesian idea. They accept the view that mind is a part of the physical world. For them, mind and mental states are nothing but certain ranges of behaviour. There is nothing spiritual about the human mind, according to them. According to Armstrong, "in fact the verdict of modern science seems to be that the sole cause of mind-betokening behaviour in man and the higher animals is the physico-chemical workings of the central nervous system."[19] Thus the materialists characterize our concept of mental state as nothing but the cause of certain sorts of behaviour, and identify these mental states with purely physical states of the central nervous system.

We are conscious and we have experiences also. We can say that to be conscious, means to have experiences of something is simply to go on within us apt for the causing of certain sorts oi' behaviour. In order to understand this situation, we may consider Armstrong's following example:

> If you have driven for a very long distance without a break, you may have had experience of a curious state of automatism, which can occur in these conditions. One can suddenly 'come to* and realize that one has driven for long distance without being aware of what one was doing, or, indeed, without being aware of anything. One has kept the car on the road, used the brake and the clutch perhaps, yet all without any awareness of what one was doing."

It is obvious that in some sense mental processes are still going on when one is in such an automatic state.

According to the psychologists, there is a very close logical tie between sense perception and selective behaviour. We can think of perceptions as inner states or events apt for the production of certain sorts of selective behaviour towards our environment. Consciousness is nothing but perception or awareness of the state of our own mind. The driver in a state of automatism perceives, or is aware of the road. If he does not, the car will be in a ditch. But he is not currently aware of his awareness of the road. He perceives the road, but he does not perceive his perceiving or anything else that is going on in his mind. Consciousness or experience is like perception and, for Kant, it is "inner sense". We cannot directly observe the minds of others, but each of us has the power to observe directly our own minds, and "perceive" what is going on there. The driver in the automatic state is one whose "inner eye" is shut: who is not currently aware of what is going on in his own mind. One who is aware or conscious of his thoughts, or his emotions is one who has the capacity to make discriminations between his different mental states. He may say that he was in an angry state of mind, when and only when he was in an angry state of mind. But such verbal behaviour would be the mere expression or result of the awareness. The awareness itself would be an inner state—the sort of inner state that gave the man a capacity for such behavioural expressions.

The term "Consciousness" has a broad use to designate any mental state or whatever it is about a state that makes it mental. Consciousness includes not only awareness of our own states, but these state themselves, whether we have cognisance of them or not. If a man is angry, that is a state of consciousness, even though he does not know that he is angry. If he does know that he is angry, that is another modification of consciousness, and not the same. It is consciousness, which makes a fact a mental fact. Descartes uses the word 'thought* to signify the thought acts and to refer to the substance where these acts inhere. He says that "thought is a substance means only the common concept of consciousness" and "thought is the essence of mind."[21] The essence of a thing is defined as that which is necessary for its existence. Descartes claims that he has clear and distinct perception or awareness that he is a thinking thing and nothing other than thought that belongs to his nature. Any act of thought for Descartes is identical with an act of consciousness. Acts of thought are identified with acts of consciousness,

hence it follows that cognitive acts are conscious acts. Our perception, understanding, judgment etc., can be defined and explained only in relation to consciousness. The mind is endowed with various faculties, such as sensory perception, understanding, willing, etc. Descartes remarks that "the subject of consciousness is the mind and that the mind is a thing or entity separate and distinct from the body."[22] The body is a thing or entity whose essence is occupying space, i.e. having shape, size and location in space, and it is in no sense conscious. The mind, on the other hand, is completely different in its nature. It is utterly nonspatial, having neither shape, size nor location. Its essence is simply having consciousness, that is, thoughts, feelings, memories, perceptions, desires, emotions, etc. A human being's whole essence is mind. In the present life our minds are intimately united with our bodies, but it is not our bodies that make us what we really are. Indeed, according to Descartes, a life is possible in which we remain essentially ourselves without having any bodies at all. Thus, the essence of mind is consciousness, i.e., one's awareness of one's own thoughts and their objects.

The mind comprises much more than consciousness. Contemporary Cognitive Science has delved deep into the processes of the mind. It has provided explanations of behaviour and has considered the internal basis of behaviour. Chalmers believes that mental states are relevant to the causation and explanation of behaviour. According to him, "such states may or may not be conscious."[23] And in Cognitive Science, an internal state that causes behaviour is mental, whether it is conscious or not. There are two separate concepts of mind for Chalmers. They are phenomenological and psychological. The former explains that the concept of mind is a conscious experience and that a mental state is a conscious experience. The psychological concept of mind states that mind is the causal or explanatory basis of behaviour. While the phenomenological concept of mind draws upon the 'feelings' of mind, the psychological concept explains mind on the basis of its actions. The phenomenological properties come into picture when we try to understand the conscious experiences of mental states. The nature of mental states, whether they are phenomenological, psychological or combinations of the two, can be explained with the help of the two elements - the facts of conscious experience and the facts of causation of behaviour. For

example, "pain" as a mental concept has both phenomenological and psychological components. Like this "learning" is psychological, "emotions" are phenomenological and "sensations" are a combination of both features. To provide an accurate account of such mental concepts, it is required to add relational elements. This means that certain mental concepts can be described only in relation to the environment in which they exist. The quintessential phenomena revolving around, or related to these, can be explained on two bases: a first-person account and a third-person explanation, that is. on grounds of what one experiences, which may be related to one's internal and external environment, and of what one observes beyond oneself. So psychobiology and phenomenology together constitute the central aspect of mind.

Consciousness is a mental state. One can express wonder regarding consciousness in the following way: How is it that anything so remarkable as a state of consciousness comes about as a result of irritating nerve tissue? This is as unaccountable as the appearance of the Genie, when Aladdin rubbed his lamp in the story.[24] Of course, it may be that in reality consciousness does not arise from the brain in the same miraculous way in which the Genie arises from the lamp.

III. The Mind-Body Problem

The mind-body problem is the basic problem in philosophy of mind, and this problem is mainly regarding consciousness. The mind-body problem, which is still with us, is the problem of how the mind is related to the body, or how the mind is related to the brain. Some philosophers believe that there is really no such thing as "the mind." But there are minded beings such as subject of experience, which feel, perceive, think, etc. Such beings include human persons, such as we, who have bodies possessing various physical characteristics like height, weight and shape. So we can say that the mind-body problem is the problem of how subjects of experience are related to their physical bodies. There is a debate over the relation between conscious mental states and the physical brain states. What essentially is the relationship between the events that take place inside the brain and those private subjective, introspective experiences that together constitute our inner mental life? Here, for us, it is not necessary to assume that consciousness is

synonymous with the mind. Consciousness may well be considered no more than just one aspect of mind. As we know, a mental state is conscious if it has a qualitative feel - an associated quality of experience. These qualitative feels are also known as phenomenal qualities or qualia. The problem of explaining these phenomenal qualities is just the problem of explaining consciousness and this is really the hard part of the mind-body problem. Consciousness is the hard nut of the mind-body problem. However, with respect to the problem at issue, it is the existence of consciousness that needs to be probed in depth.

According to epiphenomenalism, events in the brain, operating in accordance with the laws of physics, determine completely both our behaviour and our subjective experiences. For interactionism, mental events may be elicited by events in the brain or they may in turn elicit brain events and so influence the course of our behaviour. Whereas, for functionalism, there are no such things as private, subjective, introspectible, sense data or qualia. Hence, there is just no problem of mind-body relation according to the functionalists. For them, all the events in the functional systems are physical by nature.

For the epiphenomenalist, the brain is a machine like everything else in nature, and the mind is no more than a passive reflection of its activity. Epiphenomenalism contends that there is only a one-way causal connection from the body to the mind, but none from the mind to the body. Consciousness is just a by- product of the body, much like smoke from a steam engine train. This theory holds that while mental phenomena are caused to occur by the various activities of the brain, they do not have any causal effects on the physical world. They are mere epiphenomena. This means that the universal conviction that one's actions are determined by one's desires, decisions and volitions is false. There is a constant conjunction between volitions and actions. However, according to the epiphenomenalist, it is mere illusion that the former causes the latter.

Epiphenomenalism is the view that consciousness is not causally responsible for any of our actions or behaviour. Most people know that the pain one has when one puts his/her hand in fire is the cause of his/her withdrawing that hand with haste. Even if this is not thought of as the only cause, it must at least be one of the

causes. In effect, we believe that our phenomenal experiences of the world make a difference in our behaviour. If the fire did not hurt, why would we pull our hand away? According to Chalmers "any view that takes consciousness seriously will at least have to face up to a limited form of epiphenomenalism."[25] This is so in view of the facts, namely, (i) consciousness is only naturally supervening on the physical, and (ii) the physical realm is causally closed i.e., only physical phenomena can cause other physical phenomena.

The interactionists assert that mental properties do indeed have causal effects on the brain and thereby on behaviour. The mental properties of the brain arc an integral part of the causal chain in the systematic interactions with the brains' physical properties. Therefore. one's action is held to be caused by one's desires and volition after all. For the contemporary theorists. there is no clear answer as to where the mind comes from and how it first becomes attached to the brain. The fact is that. leaving aside the mythical and religious cosmologies. the position of mind in nature remains a total mystery.

Functionalism differs from the materialist theories of mind by insisting that mental events need not be identified exclusively with brain events: if a computing machinery made from wires, transistors, etc.. can serve the same functions as our brain in mediating between inputs and outputs, then mental events may be predicated of any such system that possesses the necessary information processing capacities. According to functionalism, the essential or defining feature of any type of mental state is the set of causal relations it bears to environmental effects on the body. For example, pain characteristically results from some bodily damage; it needs relief and it causes wincing, blanching and nourishing of the traumatized area. For functionalism, any state that plays exactly that functional role is a pain. Similarly, other types of mental states are also defined by their unique causal roles in a complex economy of internal states mediating sensory inputs and behavioural outputs. We all know that concepts can be defined functionally, in terms of their causal relations, and we should understand mental concepts by analogy with such concepts. A functional organization of a system takes a physical input, processes it through a sequence of internal cause and effect relations within the system and produces a physical

output. Functionalism thus evades the mind-body problem, as, for it, there is no such problem regarding the functional states in a mechanical system.

The most important feature of the mind is consciousness. And the world contains not only conscious mental states but also physical objects. The human existence is conscious because without consciousness all of the other specifically human aspects of our existence - language, love, humor, and so on would be impossible. The second feature of the mind is "intentionality", by which our mental states arc directed at or about objects and states of affairs in the world other than themselves. Intentionality doesn't just refer to intentions, but also to beliefs, desires, hopes, fears, love, hate, disgust, pride, and all of those mental stales that refer to. or are about the world apart from the mind. The third feature of the mind is the subjectivity of mental states. According to Searle:

> ...this subjectivity is marked by such facts as that I can feel my pains, and you can not. 1 see the world from my point of view: you see it from your point of view. 1 am aware of myself and my internal mental states, as quite distinct from the selves and mental states of other people."[26]

How are we to accommodate the reality of subjective mental phenomena within the scientific conception of reality as totally objective? Besides, there is problem about mental causation. We all suppose, as part of common sense, that our thoughts and feelings make a real difference to the way we behave, that they actually have some causal effect on the physical world. If our thoughts and feelings are truly mental, how can they affect anything physical? Are we supposed to think that our thoughts and feelings can somehow produce chemical effects on our brains and the rest of our nervous system? But unless some such connection takes place between the mind and the brain, we cannot explain much of the functions of the mind in a human body.

To the above problems Searle has interesting solutions. According to him, the brain processes cause conscious processes. As he points it: "mental phenomena, all mental phenomena whether conscious or unconscious, visual or auditory, pains, tickles, itches, thoughts, indeed, all of our mental life, are caused by processes going on in the brain."[27] Brain processes cause consciousness but the

consciousness they cause is not some extra substance or entity. It is just a higher-level feature of the whole system. The crucial relationship between consciousness and the brain is as follows: the lower- level neuronal processes in the brain cause consciousness, and consciousness is simply a higher- level feature of the system that is made up of the lower- level neuronal elements.

According to Searle, "pains and other mental phenomena just arc features of the brain (and perhaps the rest of the central nervous system)."[28] To discuss the relations between mind and brain as the causal relationships in nature. Searle gives the example of micro and macro properties in physics of systems - the small and large scales. Each object is composed of micro-particles. The micro-particles have features at the level of molecules and atoms as well at the deeper level of sub-atomic particles. But each object also has certain properties such as the solidity of the table, the liquidity of the water and the transparency of the glass. which are surface features of the physical systems. Many such surface properties can be causally explained by the behaviour of elements at the micro level. For example, the solidity of the table is explained by the lattice structure occupied by the molecules of which the table is composed. Similarly, the liquidity of water is explained by the nature of the interactions between the H_2O molecules. Those macro features are causally explained by the behaviour of elements at the micro-level.

Searle suggests that this provides a perfectly ordinary model for explaining the puzzling relationships between the mind and the brain. In the case of liquidity, solidity and transparency, we have no difficulty at all in supposing that the surface features are caused by the behaviour of elements at the micro-level and. at the same time, we accept that the surface phenomena just are features of the very systems in question. The clearest way of stating this point is to say that the surface feature is both caused by the behaviour of micro-elements and. at the same time, is realised in the system that is made up of the micro-elements. There is a cause and effect relationship, but, at the same time, the surface features are just higher- level features of the very system whose behaviour at the micro-level causes those features.

If a scientific account of the world attempts to describe how things are, then one of the features of the account will be the subjectivity of mental states, since it is just a plain fact about biological evolution that it has produced certain sorts of biological systems, namely human and certain animal brains that have subjective features. According to Searle:

> My present state of consciousness is a feature of my brain, but its conscious aspects are accessible to me in a way that they are not accessible to you. And your present state of consciousness is a feature of your brain and its conscious aspects are accessible to you in a way that they are not accessible to me.[29]

The mind and the body interact but they are not two different things. Mental phenomena are caused by the brain. As Searle says: "There really are mental states: some of them are conscious: many have intentionality, they all have subjectivity: and many of them function causally in determining physical events in the world."[10]

According to Chalmers, the most challenging question of the mind-body problem is: how does conscious experience arise from a physical system? To find an answer. Chalmers splits up the connection between physical and conscious experience into (i) the link between the physical and psychological, and (ii) the link between psychological and phenomenological. The division of mental properties has the effect of dividing the mind-body problem into: an easy part and a hard part. The hard part of mind-body problem is: How could a physical system give rise to conscious experience?

McGinn argues that there is a connection between the mysterious nature of consciousness and the brain. In reality the problem of consciousness does not arise from the brain in the miraculous way in which the Genie arises from the lamp. He points out:

> We have been trying for a long time to solve the mind-body problem. It has stubbornly resisted our best efforts. The mystery persists. I think the time has come to admit candidly that we cannot resolve the mystery.[31]

His view is not only that we have no conception of how the mind-body problem can be solved (e.g. how physicalism can explain consciousness), but also that we should never expect to acquire such conception. An adequate explanation of the mind-body problem forever eludes human understanding, not because it is miraculous or it involves divine intervention, but it transcends our cognitive abilities like the understanding of quantum mechanics. According to McGinn, "we are cut off by our very cognitive constitution from achieving a conception of that natural property of the brain (or of consciousness) that accounts for the psychophysical link."[32]

IV. The Problem of Consciousness

Consciousness arises out of our brain. It supervenes on the neural activities in the human brain. On the most common conception of nature, the natural world is the physical world. But on the most common conception of consciousness, it is not easy to see how consciousness could be part of the physical world. So it poses most baffling problems in the philosophy of mind. There is not just one problem of consciousness. David Chalmers divides the problems of consciousness into two parts such as, the hard problem and the easy problem. The "easy" problems of consciousness are those that seem directly susceptible to the standard methods of cognitive science, whereby a phenomenon is explained in terms of computational or neural mechanism. And the hard problems of consciousness are the problem of experience, which is subjective and is given in the first-person perspective.

According to Chalmers, the easy problems explain cognitive functions such as discrimination, integration and the control of behaviour. The hard problem explains why these functions should be associated with phenomenal experience. He describes some notions of consciousness that are classified as easy problems. These problems include: the ability to discriminate, categorize and react to environmental stimuli: the integration of information by a cognitive system: the reportability of mental states: the ability of a system to access its own internal states: the focus of attention: the deliberate control of behaviour and the difference between wakefulness and sleep.

All of these phenomena are associated with the notion of consciousness, though it is doubtful whether they can be explained scientifically. All of them are explained in terms of computational or neural mechanisms. For example, to explain access and reportability, we only need to specify the mechanism by which information about internal states is received and made available for verbal report. To explain internal access, we need to explain how a system could be appropriately affected by its internal states and use information about those states in directing later processes. According to Chalmers, the problems associated with intelligent information processing and action guidance are 'the easy problems" in the sense that we can picture how the natural sciences can solve them. Consciousness is the most familiar thing of all, but it is hard to say what it is. Consciousness is the hard problem, as it is more than what the computational mechanisms can solve.

• The real hard problem of consciousness is the problem of experience. When we think and perceive, there is information processing, but there is also a subjective aspect. This subjective aspect is experience. For example, when we see, we experience the visual sensation-the felt quality of redness, the experience of dark and light or the quality of depth in a visual Held. According to Chalmers, "What unites all of these states is that there is something it is like to be in them."[33] All of them are stales of experience. In this sense, we can say that a being is conscious or is phenomenally conscious; when there is something it is like to be that being. A mental state is conscious when there is something it is like to be in that state. There are other conscious states such as states of perceptual experience, bodily sensation, mental images, emotional experience, etc. There is something it is like to see a vivid green, to feel a sharp pain, to visualise the tower, to feel a deep regret and to think that one is late. Each of these states has a phenomenal character, with phenomenal properties or qualia characterising what it is like to be in the state.

Here Chalmers points out that there is no question that experience is closely associated with physical processes in systems such as brains. It seems that physical processes give rise to experience, at least in the sense that producing a physical process gives rise to experience, at least in the sense that producing a

physical system (such as a brain) with the right physical properties inevitably yields corresponding states of experience. But how and why do physical processes give rise to experience? This is the central mystery of consciousness. Why is it that when our cognitive systems engage in visual and auditory information processing we have visual or auditor)' experience? How can we explain why there is something it is like to entertain a mental image or to experience an emotion? It is widely agreed that experience arises from a physical basis, but we have no good explanation of why and how it arises so.

Now the question arises: why arc the easy problems easy and why is the hard problem hard? The easy problems arc easy because they concern the explanation of cognitive abilities and functions. But the hard problem is hard because it is not a problem about the performance of functions.

Chalmers differentiates the hard problem from the easy problem of understanding the structural and functional properties of cognitive processes by arguing that these arc al least in principle amenable to the conventional scientific theories and methodologies, while the former problem does not appear to be. He then suggests that to resolve the hard problem we need to postulate experience as fundamental feature of nature alongside the more conventional features such as space-time, mass and charge. According to this view, a final theory of consciousness will consists of a set of fundamental 'psychological' laws accompanying the fundamental laws of physics. Chalmers then offers a preliminary outline of such a theory, centered on a double-aspect (phenomenological and physical) view of information.

Chalmers* strategy is to isolate experience from the other cognitive processes. According to him, "almost everyone allows that experience arises one way or another from brain processes and it makes sense to identify the sort of process from which it arises."[34] Experience is not directly observable in experimental contexts, but. when applied judiciously, this strategy can shed indirect light on the problem of experience.

It is admitted now that the usual methods of cognitive science and neuroscience fail to account for conscious experience. McGinn argues that "the problem of conscious experience is too hard for our limited minds: we are 'cognitively closed* with respect to the phenomena."[i0] Others argue that conscious experience lies outside the domain of scientific theory altogether. It is therefore admitted as a fundamental phenomenon in nature.

What a physical theory takes as fundamental includes mass and space-time. No attempt is made to explain these features in terms of anything simple. But this does not rule out the possibility of a theory of mass or ol" space-time. 'There is an intricate theory of how these features interrelate, and of the basic laws they enter into. These basic principles are used to explain many familiar phenomena concerning mass, space and time at a higher level. Here, Chalmers suggests that a theory of consciousness should take experience as fundamental. We know that a theory of consciousness requires the addition of something fundamental to our ontology, as everything in physical theory is compatible with the absence of consciousness. If we will take experience itself as fundamental, then we can go about the business of constructing a theory of experience.

A non-reductive theory of experience will specify principles telling us how experience depends on physical features of the world. These psychophysical principles will not interfere with physical laws, as it seems that physical laws already form a close system. A physical theory gives a theory of physical processes, and a psychophysical theory tells us how those processes are both psychological and physical at the same time. The double aspect theory of information proposes that "we can find the same abstract information space embedded in physical processing and in conscious experience."[36] So Chalmers" hypothesis is that information has two basic aspects, a physical aspect and a phenomenal aspect. Consciousness is phenomenological, as to be conscious means to 'instantiate some phenomenological quality". But consciousness also stands for some psychological properties 'such as reportability or introspective accessibility of information."

Till now we have been discussing Chalmers's views on consciousness. We can now have a look at other views as well. Noted philosophers like D. C. Dennett reject Chalmers' views and argue that only one kind of problem exists and that is the easy problem. Dennett rules out the subjective qualities or the qualia of experience. He says that all that Chalmers describes as easy problems are not really that much easy. For him. there is no hard problem at all. The hard problem "evaporates when the piecemeal work on the easy problem is completed."[37] According to Chalmers, the easy and hard problems of consciousness can also be termed as the explanation of function and explanation of experience, respectively. Dennett differs with Chalmers with regard to this view and claims that 'experience' can be 'explained' through functions. and, hence. all problems are explanations of functions. In elaborating this point. he (Dennett) says that mere explanation of experience, therefore. cannot exist. as 'functions' will always be mandatory to explain the experience. To quote Dennett. "whether people realize it or not. it is precisely the 'remarkable functions associated with* consciousness that drive them to wonder about how consciousness could possibly reside in a brain."[18]

After studying the problem of consciousness. it can be argued that "easy" and "hard" problems of consciousness *do* really exist. The easy problems of consciousness are regarding cognitive functions. We can improve upon. modify or even correct these functions in case we encounter any problems. But in case of the hard problem or the explanation of the experience. we cannot do any such thing. There is no scientific method to solve the problems of "experience". Experience is something that we just feel. It is not any function. So. Dennett's argument may not hold good.

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CHAPTER 2

THE MATERIALISTIC THEORIES OF CONSCIOUSNESS

There are materialist theories of mind, which claim that what we call mental states and processes are merely sophisticated processes of the complex physical system — the brain. According to them, mind can be known only through the various activities of the brain. That is, it involves the physical behaviour of the brain comprising of the different states and events that are occurring in the brain. For the materialists. each type of mental state or process is numerically identical with some kind of physical state or process within the brain or the central nervous system. They think that everything is ultimately physical or material. Behaviourism. for example. claims that consciousness is nothing but the physical behaviour of the conscious being. It is not an inner process or event. The other forms of materialism such as physicalism and the theory of mind-body identity also do not admit the existence of conscious mental states. Thus. the various kinds of materialist theories claim to explain away consciousness by taking the brain processes as central to the philosophy of mind. In this chapter. I will discuss the various materialist theories of mind and expose their weakness as theories of consciousness.

1. Materialism

Some contemporary philosophers have argued that everything. which happens in the world. could be explained on the basis of physical phenomena and physical laws without using the notion of mind. For them, minds do not exist at all and only the physical things exist. This view is called materialism. According to this theory. everything, which happens in the mind. is the result of the events in the body. Thus. it denies the independent existence of mind. For the materialist, mental states like pains, beliefs, desires, etc. are fundamentally physical states. The mental phenomena are ultimately physical in nature.

Materialism as a theory of mind reduces the mental phenomena to the physical phenomena. It denies the notion that the world includes both mental and

material substances. It rather holds that every substance is a material one. That is. minds are made somehow of the same materials of which rocks. trees. and stars are made of. If we take the fundamental particles that structure inorganic objects and arrange them in the right proportion. the result will be a creature with a mind. The classical Greek philosopher. Democritus and his followers gave the idea that the fundamental stuff of the universe was just one of kind (matter) and that the fundamental entities were material atoms having the characteristics such that "nothing exists but material atoms and the void. and that everything in the world is nothing but the interaction of these atoms as they move through the void."[1] That means nothing exists but atoms and empty space. The Greek materialists did not mean by this to deny the marked diversity of the world around us: trees are different from apples or the sun. But they believed that the diversity is to be explained in terms of a limited number of basic ingredients. Nothing can arise out of nothing and nothing can be destroyed. All changes are new combinations or separations of atoms. The atoms are infinite in number and endlessly varied in form. because this is their natural state which requires no more explanation. Modern materialists tell us that the really basic ingredients cannot be atoms. but they agree with Democritus that everything. the mental included. is fully explicable in terms of matter. According to Hobbes. "No part *oi'* the universe is not a body. and no part of the universe contains nobody."[2] For him. the universe is a system of bodies. Whatever changes in the universe is the motion of bodies. and nothing can cause a motion. without contact with another moving body. Thus. for materialism, everything in the world is physical. or that there is nothing over and above the physical. or that the physical facts exhaust all the facts about the world. In the other words. materialism is true if all the facts about the world are logically dependent on the physical facts.

According to the contemporary materialists. the mental states or events as a matter of fact are states of the central nervous system. This theory is known as central state physicalism. Some materialists have also argued that mental processes are physical processes in the brain. This means that mental processes are identical with certain processes in the brain. And neurophysiology alone can examine at the correspondences between particular brain processes and mental processes. Armstrong's view is that

> ...a mental state is to be conceived of as a state apt for the production of contain ranges of behaviour, or, in some case, a state apt for being produced by a certain range of stimuli.[3]

Thus, according to him, all mental processes are brain processes and so are physical by nature.

The materialists in general argue against the Cartesian conception of the mind. Cartesianism has divided mind and body into two different realms of existence. It provides a metaphysical foundation for the explanation of the mental phenomena. As opposed to Cartesianism, materialism explains the reality of the mental through the reality of the physical phenomena. According to this view, mind is not just a part of the physical organism but is itself characterized as the physical organism called brain. The mind can be known through the various activities of the brain, i.e., through the physical behaviour of the brain comprising the different states and events that occur in the brain. The function of the mental states is identified with the functions of the brain processes. Thus, there is a causal link between outer behaviour and the inner brain process. Central state materialism holds that, "when we are aware of our mental states what we are aware of are mere physical states of the brain. But we are certainly not aware of the mental states as states of the brain."[4] Our awareness of something happening in the mind is always about the physical processes, which are going on in the brain. So Armstrong remarks:

> ...the materialist theory allows a peculiarly simple theory of the nature of conscious mental states. For the materialist will say that, as a matter of empirical fact, they are simply physical states of the brain.[5]

On the other hand, materialism tries to reduce the whole of the mental life into the physical processes of the brain. It is true if all the positive facts about our world are entailed by the physical facts. The more common materialist move is to say that mental states really do exist, but they are not something in addition to physical phenomena, rather they can be reduced to forms of physical states.

In one of his articles, J.J.C. Smart explains materialism as a theory, which maintains that there is nothing in the world over and above those entities, which are postulated by physics.[6] According to him, the world is made entirely of the

ultimate entities of physics, namely, space-time points. Smart denies the idea that there exist non-physical entities and non-physical laws in the world. He explains even the so-called mental phenomena like love, desire, etc. in terms of physical processes in the human organism. However, a non-physicalist, who analyses love as an internal state, can say, that it is a mental state, whereas the materialist will say that it is a brain state. Smart in any case holds on to a materialist metaphysics which accounts only for the entities existing in the world like atoms, aggregates of atoms and the properties and relations of these aggregates.[7]

The simplification of our world-picture leads to the materialist theories. But unlike behaviourism, the theories of materialism do not deny the existence of the inner mental states. On the contrary, they assert their existence; they say that the inner states are the physical states of the brain. Pure materialism accepts the view that, in the universe, there arc only physical, chemical and biological properties, which are in all probability reducible to physical properties. But attribute- theories of mind reject this view and hold that man, although a single substance, has other non-material properties, which cannot be reduced to physical ones. It is the possession of these extra properties that allows us to say that man has a mind. Some philosophers claim that the real objection to the materialist theory lies in the existence of perceptions, sensations and mental images. As, according to these philosophers, mental events are irreducibly non-physical. On the other hand, there are other philosophers associated with more conservative traditions of thought for whom the real objection to materialism is not perception, but the 'higher' activities of humans, in particular, thought. According to them, 'inner states' cannot be identified with ordinary physical states of the brain. It seems too simplistic to account for mental events like perception with the physical happenings in the brain. The problem of how a mere physical mechanism could think creatively is obviously much more difficult to solve. If any inner state is denied to be a purely physical state of the brain on the grounds that no physical mechanism could be adequate to produce behaviour of such sophistication, then it must be the 'higher' mental activities. Philosophers of the school of linguistic analysis introduced the notion of "contingent identity' as part of a reply to the objections made against materialist theories. These objectors argued that the logic

of statements about brains and the logic of statements about minds were too different to allow identification of mental states with brain states.

But now the question is: what is an internal state of consciousness? Can we interpret the event of having an after-image or a painful sensation as something material- a brain state or a brain process? To suppose that an image or a sense datum is green does not mean that the consciousness of having the image or the sense datum is green. Apples and unripe bananas can be green, but not the experience of seeing them. According to Smart:

> ...images and sense-data are not constituents of the world, though the process of having an image or a sense-datum is an actual process in the world.[8]

Therefore, he says that the experience of having a green sense datum is not itself green, but it is a process occurring in gray matter. When we are reporting that a lemon is yellow, we are actually reacting to the lemon. But when we report that the lemon looks yellow, we react to our internal state. In other words, when we describe the after-image as green, we do not say that there is something, the after-image, which is green. For a dualist, the mental processes occur in an immaterial substance, whereas a materialist would report these as taking place inside our skull. U.T.Place assumes that "consciousness is a process in the brain", although not necessarily true, is not necessarily false. For him, it is neither self-contradictory nor self-evident; it is a reasonable scientific hypothesis like the statement 'lightning is a motion of electric charges" is a reasonable scientific hypothesis.[9] Materialism holds that all that exists is matter in motion and that mental states are ontologically dependent on states of the bodies.

The phenomenon of consciousness poses serious difficulty for materialism. Consciousness includes qualia, the phenomenal feel and the subjective quality of experience. The basic idea is that, when one has an experience, for example, a pain in the foot, it seems theoretically possible to separate all of the neuron firings, information processing in the brain and behavioural responses from what may be called the qualia or the phenomenal feel associated with pain. Dualists disagree with both the materialists and eliniminativists on the idea that qualia are nothing but the processes occurring in the brain. Dennett claims that there is not any

phenomenon above and beyond all such brain processes and their interactions. To postulate something other than the things going on in our brains is misguided. Eliminative materialism goes further in ruling out the phenomenal consciousness altogether from our account of the functions of the human organism.

Chalmers argues that materialism must hold that consciousness is logically supervenient on the physical. This means that materialists cannot appeal to metaphysical supervenience as a way of avoiding the problems it raises with logical supervenience, and, therefore, materialism fails. Chalmers' argument against the logical supervenience of consciousness is based on the logical possibility of "zombies"' and the logical possibility of "zombies" proves that materialism is false. Because, "zombies" are logically possible, consciousness cannot logically supervene on the physical, and therefore one cannot reduce facts about consciousness to physical facts. Hence, one cannot explain the occurrence of consciousness just by appealing to the physical facts. For Chalmers, materialism is committed to the view that consciousness logically supervenes on the physical, in which case materialism is false. Arguing for the logical possibility of zombies is problematic because zombies do not exist in our world. However. Dennett does not believe that any phenomenon matching, what we call consciousness, exists even in us. He states:

> There is another way to address the possibility of zombies, and in some regards 1 think it is more satisfying. Are zombies possible? They're not just possible but they're actual. We are all zombies.[10]

He is not denying that we experience pain or that there is something it is like to see an apple, only that what is really going on in our heads does not add up to the mysterious thing called "consciousness". Dennett and other eliminativists argue that everything philosophers call "consciousness" is really just a bunch of complex interactions between brain states, sensory inputs and motor outputs occurring within our heads.

According to Chalmers, zombies lack conscious experience and being conscious cannot be logically supervenient on physical properties. According to him:

> An opponent might agree that nothing in this sort of physics entails the existence of consciousness, but argue that there might be a new kind of physical theory from which consciousness falls out as a consequence.[11]

He continues:

> The trouble is that the basic elements of physical theories seem always to come down to two things: the structure and dynamics of physical processes…But from structure and dynamics, we can only get more structure and dynamics…Conscious experience will remain untouched.[12]

Chalmers dismisses the possibility that we could possibly expand our knowledge of physics in such a way that we would see that consciousness does logically supervene on the physical. It would require a very different sort of physical theory from the one we have at present. If consciousness docs not logically supervene on the physical, then one cannot reduce facts about consciousness to physical facts, and hence one cannot explain the occurrence of consciousness just by appealing to the physical facts. Chalmers argues that by giving only the physical facts about a person, there is no way we could ever infer the existence of consciousness in that person because of the logical possibility of zombies. Since zombies are logically possible and because a zombie and its human counterpart would be physically identical, just knowing all of the physical information about a person is not enough to infer the existence of consciousness. Therefore, one cannot explain consciousness physically.

The concept of metaphysical identity, when applied to consciousness, can be understood to show that consciousness may be metaphysically identical to physical phenomena, even if it is conceivable that consciousness is not a physical phenomenon. Materialist theories will hold that the identity of consciousness and physical process is similar to the identity of water and H_2O. It is logically possible that water may have been XYZ, though water is just H_2O in our world, and in all possible worlds the term water refers to H_2O. Similarly, materialists would argue that although it is logically possible for a being to be physically identical to you or me and exist without being conscious, in our world consciousness is just

physically instantiated. Therefore, in all possible worlds these same physical phenomena should be called "consciousness."

Materialists believe that someday a conceptual revolution in physics and psychology will allow us to explain consciousness in physically terms. But this is still in the realm of possibility. Consciousness has the feature of subjectivity which materialist cannot explain. As Searle remarks:

> Materialists are reluctant to accept that feature because they believe that to accept the existence of subjective consciousness would be inconsistent with their conception of what the world must be like.[13]

Materialism docs not accept the reality of consciousness in general and conscious subjectivity, intenationality, freedom of will, etc. in particular. However, it is these particular features, which constitute the reality of the consciousness and the mind. Biological naturalism of Searle finds the materialist worldview inconsistent and incomplete for not accommodating consciousness within its world picture. On the other hand, Searle's naturalism admits the reality of consciousness.

> Consciousness is the central fact of specifically human existence because all our other aspects of our existence - language, love, humor and so on would be impossible without consciousness.[14]

II. Behaviourism

Behaviourism defines consciousness in terms of the kind of bodily behaviour elicited by certain kinds of stimuli. Behaviourism is both a theory of mind and a methodology. As Ryle puts it, ••behaviourism started as the form of methodology at the beginning, which is called methodological behaviourism."[15] Whenever we want to study mind, it is found that there is no physical thing as the mind to be studied. So in a scientific study, we can only study the behaviour of the individual, not the mind. Thus, behaviourism proposes to provide a theory of mind in terms of the behaviour of man in society. Man's behaviour does manifest his mental life in a certain situation. However, a complete study of man's mind requires a complete study of his behaviour.

Behaviourism holds that mind and all mental phenomena are ultimately reducible to some observable or recordable psychology reactions. For the behaviourist, mind as a metaphysical category stands reduced to a series of behaviour. There is nothing called mind according to this theory except the physical behaviour. Thus. behaviourism is taken by some as a satisfactory account of the mind from the third-person point of view. that is. from the observer's point of view. It is a third-person account because here we define all expressions involving consciousness in terms of bodily behaviour. which can be observed in others as easily as in oneself. For example. when we encounter other people. we observe their behaviour like their actions. speech and so on.

There are two types of behaviourism such as logical behaviourism, which is a philosophical theory and psychological behaviourism. According to logical behaviourism (also called analytical behaviourism). being in a mental slate is same as being in a physical state. In other words. we can know all about another person's state of mind only through their behaviour. Logical behaviourists believe that any statement about the internal or private world of individuals can be translated into a statement about publicly observable actions. For example. if someone says. "1 am happy". this may be translated into a description of his/her physical state - increased heart rate. smiling. etc.

Psychological behaviourists like J.B.Watson and B.F. Skinner attempt to predict and control human behaviour by studying the stimuli needed to produce certain responses. Therefore. psychological behaviourism is mainly concerned with accounting for human behaviour in terms of stimulus and response. However. it is also interested in the methods involved in conditioning and predicting the outcome of stimuli. On the other hand. logical behaviourism is not concerned with conditioning or the methods *of* stimulus and response. but with explaining mental concepts in terms of physical descriptions. Therefore. although there is a similarity of approach, the distinction between the two is that the one is a philosophical description while the other is a psychological one.

Human behaviour is a complex phenomenon. It is difficult to characterize behaviour as only physical. It includes mental behaviour as well as speech, thinking, feelings, etc. Physical behaviour is public and can be observed by all. However, feelings such as pain are subjective, and exclusive to the person experiencing it; they can only be observed by him and cannot be known, except indirectly, by anybody else. Thus, broadly, behaviour also includes the psychological aspects of a person's life; though behaviourism emphasizes only the physical aspects.

Behaviourism is an attempt to explain mind and the mental in terms of dispositions, where dispositions would mean the tendency to behave in a certain situation. According to Ryle. there is no such thing as the mind which may explain human behaviour. But behaviour itself is necessary to understand the mental activities. For Ryle. the mental conduct concepts are to be analytically understood in terms of dispositions to behaviour. It is clear that behaviourism can account for the close relation that holds mind and body. According to this theory, mind is just the body in action. Behaviourism is compatible with the modern scientific knowledge of body and brain.

According to Skinner[16], all present behaviour could be explained by past history, current situation, and endowment. We behave the way we do because of the consequences our past behaviour has generated. Skinner claimed that behaviour is most effectively studied in relation to the environment, the physical environment in which the species evolve and the physical and social environments in which the individual lives. Moreover, he claimed that human beings hold on to illusions of being free to act because they think, wrongly, that without this belief of being true, human beings will lose all dignity. In fact, we are controlled by our past and our environment.

He argued that if a rat gets food every time it presses a lever, it is operating on the environment. We behave the way we do because of the consequences our past behaviour has generated. The history of reinforcements determines our behaviour. Consciousness is just an epiphenomenona and feelings are not causes

of actions but consequences. Behaviour can be predicted and controlled without reference to them. Most behaviour is selected by its consequences.

According to Shaffer, "consciousness is to be defined in terms of the kind of bodily behaviour elicited by certain sorts of stimuli."[17] According to this view, we can give an account of all mental processes in terms of physical behaviour. It may be called analytical behaviourism as it defines the mental activities in terms of behaviour. Mind is behaviour, and there is nothing secret about it. It is open and public. By observing the behaviour of others, we can understand their minds. There are open accesses into the minds of others as well as our own selves. The mind is not something behind the behaviour of the body; it is simply part of that physical behaviour.

As Paul Churchland remarks, "the private language argument of Wittgenstein gives behaviourists much encouragement in their attempt to define our common expressions for mental states in terms of their connection with publicly observable circumstances and behaviours."[18] From this it is observed that behaviourism shows a close link between the mind and the physical behaviour. Thus, for the behaviourist, mind is rather a short hand for the actual and potentials patterns of behaviour. The behaviourist emphasizes that it is not possible to give exact translations of statements about mental happenings into statements about physical happenings. If we demand translation, then behaviourism seems impossible, because it proves rather impossible to get rid of all mental expressions. When we are talking about the mind and the physical behaviour of our bodies we are using two different languages, but according to behaviourism, they are languages that have, as their subject-matter, the physical actions of the same physical thing. However, the exact translation of the language of mind to the language of physical events is impossible.

Behaviourism as a psychological theory advocates the empirical study of the mind through behaviour. As Churchland puts it:

> By 'behaviour' behaviourists mean the publicly observable, measurable, recordable activity of the subjects at issue: bodily

movements, noises, emitted, temperature changes, chemical released, interaction with environment, and so forth.[19]

It is the behaviour which is the source of our knowledge of the mind. It is basically the behaviour, which is observed, and through this observable behaviour, we can explain the mental phenomena. In this sense, the definition of the behaviour of human beings includes both voluntary and conscious actions as well as involuntary or unconsciousness actions. Voluntary actions include the person's intention and will, whereas the involuntary action excludes the person's intentions and desires. Behaviour includes the biological functions of the body as well. Behaviour is thus studied by undertaking both the outer environmental conditions as well as the inner potential capacities *of* human beings. According to Churchland:

> Instead of appealing to mental states, behaviourists proposed to explain any organism's behaviour in terms *of* its peculiar environmental circumstance. Or, in terms of the environment plus certain observable features of the organism. Or, failing that, also in terms of certain unobservable features of the organism—dispositions, and innate and conditioned reflexes—where those features meet a very strict condition: they must be such that their presence or absence could always be decisively determined by behavioural test, as solubility of a sugar cube is revealed by its actually dissolving (the behaviour) when placed in water (the environmental circumstances).[20]

So far as the mental state is concerned, there are two aspects which are necessary for explaining the mind: they are the dispositional capacity which is an intrinsic feature of the human beings' organic structure, and the environmental conditions which are the outer conditions in which a person is situated.

The inner feature of behavioural capacity is known as the dispositional property of behaviour. Disposition is an unobservable factor, which gets manifested in the behaviour itself. For example, brittleness is the dispositional property of glass. That means glass, being a physical phenomenon, contains brittleness as its physical dispositional property. Similarly, human behaviour is determined basically by the dispositional feature of the brain states. That is, for all of our outer physical behaviour, there must be a causal dispositional state in the

brain. For the behaviourists, the brain states are physical states. Behaviour is identified with the brain states, that is, corresponding to a particular behaviour, there must be a dispositional state in the brain organism. The mental phenomena like desire, belief, sensation, feelings, imagination, etc. are a part of the dispositional features of the brain, the brain being a physical organism that is directly causing behaviour. The reality of the mental is basically a physical dispositional feature of the brain. Thus, behaviourism rules out the reality of the mental as a necessary condition for explaining behaviour. For Armstrong, brain slates are the same as the mental states. Each state of the brain is causally responsible for a piece of behaviour. Hence, there is a causal relationship between the states of the brain and the expressions of behaviour. Behaviour is not simply an automatic process caused by the dispositional character of the brain. Rather, the brain process is identical with the mental state.

Dispositions are thus built into the structure of an object. For example, whenever a glass falls from my hand, it lies broken on the ground. The brittleness is part of the atomic structure of each piece of the broken glass. It is also true that there arc some external factor operating for causing the glass to slip from my grip. The disposition of the glass is simply that it breaks whenever it falls on the ground. Similarly, in certain environmental and physical conditions, human beings behave in a particular order. Hence, in order to determine the human dispositions we must observe or measure the particular pattern of the external behaviour of the human beings. We talk about dispositional behavior in typical external conditions. From the dispositionalist point of view, all mental states or states of consciousness arc nothing but the dispositions to behave in particular ways.

The behaviourists deny the existence of the mind altogether. When we describe someone as being in pain, or as irritated, according to the behaviourist, there is no description of that person's mental experience. Rather, it is a description of that person's public behaviour or potential behaviour in hypothetical situations. In other words, it is a description of what the persons would do in such and such circumstances, that is. their dispositions to behave. To be in pain is to have a tendency to wince, groan, cry, scream, and so on. depending on the intensity of the pain. Being irritated is having a tendency to

shout, stamp one's feet and answer people rudely. According to the behaviourists, what we describe as our mental state is just a shorthand way of describing our behaviour and tendencies to behave in a certain way. Therefore, Kyle explains the Cartesian view of the mind as "the dogma of the ghost in the machine the ghost being the mind and the machine the body."[21]

Behaviourism is thus the view that mental states are just patterns of behaviour and dispositions to behaviour, where 'behaviour' means just bodily movements which have no accompanying mental component. For example, speech behaviour is just a matter of noises coming out of one's mouth. But here behaviourism may be proved to be false because it is known that a feeling of pain is one thing and the behaviour associated with pain is another. Another difficulty with behaviourism is that it is unable to account for our intuition that mental states cause behaviour. For example, according to the behaviourist analysis, our belief that it is raining consists of patterns of behaviour and dispositions to behaviour. That we have such a belief consists in such facts as someone wears a raincoat and carries an umbrella when he goes out. (These behaviours are just bodily movements) But our natural preference is to say that the belief causes the behaviour, not that the belief is just the behaviour. Furthermore, it seems that the behaviourist analysis cannot be right as a reduction of the mental to behaviour, because it is circular. To analyze some mental states, we have to presuppose other mental states. For example, one belief that it is raining will be manifested in carrying an umbrella only if he/ she also has a desire not to get wet. His/ her desire not to get wet will manifest itself in this behaviour only if he/ she has the belief that the umbrella will keep him/her dry. So there are at least two difficulties about behaviourism. The first is that it cannot account for the causal relation between mind and behaviour, and the second is that the relation between a mental state and behaviour cannot be analyzed without mentioning other mental states. To analyze beliefs, we have to have desires, and to analyze desires, we have to have beliefs.

In that material mode of speech, behaviourism claims that the mind is just behaviour. In the formal mode of speech, it consists in the view that sentences about the mental phenomena can be translated into sentences about actual and possible behaviour. The central point of behaviourism is that thoughts, feelings,

and intentions as mental processes do not determine our behaviour which is the product of conditioning. We are biological machines and do not consciously act. J.B. Watson argues that "human psychology could do without the concept of consciousness and the technique of introspection."[22] He claims that research on consciousness had led nowhere, because investigators, who contemplated consciousness, could never really agree about what was going on in the mind.

Behaviourism is a typical third-person account of the mind. It proposes that we define all expressions involving consciousness in terms of bodily behaviour, which can be observed in others as well as in oneself. It is obvious that a person, who is conscious or who is in some particular conscious state, may not be behaving in any noticeable way. He may just be flat on his back, eyes shut. Still he may be conscious, having sensations and thoughts and so on. Ryle argues that the Cartesian conception of the mind as essentially private makes it absolutely impossible to know of the existence of any mind but one's own. He also argues that the whole Cartesian idea of consciousness is intrinsically absurd. For example, we are necessarily conscious of our mental states as they occur in our mind. We must be conscious of our consciousness of the original states and conscious of that consciousness and so on and infinitum.

Behaviourism is a profoundly unconventional account of mental processes. If somebody speaks and acts in certain ways, it is natural for him to speak of this speech and action as the expression of his thought. It is not at all natural to speak of his speech and action as identical with his thought. We naturally think of the thought as something quite distinct from the speech and action that, under suitable circumstances, brings the speech and action about. Thoughts arc not to be identified with behaviour; we think they lie behind behaviour. A man's behaviour constitutes the reason we have for attributing certain mental processes to him but the behaviour cannot be identified with the mental process. The behaviourists are wrong in identifying the mind and mental occurrences with behaviour, but in a sense they are right in thinking that our notion of a mind and of the individual mental state is logically tied to behaviour. What we mean by a mental sate is some state of the person, which under suitable circumstances, brings about a certain range of behaviour. Perhaps mind can be defined not as behaviour but rather as

the inner cause of certain behaviour. Thought is not identical with speech, rather it is something within the person that, in suitable circumstances, brings about speech.

III. Physicalism

The pysicalists are those who believe that human beings are physical beings like any other physical object in the world. The material things are generally studied by natural science, and in particular, by physics. Physicalism is therefore an account of human beings expressed in terms of a scientific theory. Smart believes that the sciences like physics and chemistry can include everything in the world. According to him:

> ...everything should be explicable in terms of physics…except the occurrence of sensations seems to me to be frankly unbelievable.-[31]

Physicalism is a doctrine about psychology to the effect that the mental is not an extra feature of reality over and above the physical nature. According to the physicalists, the mind is nothing but the brain. Therefore, man is nothing but a material object having only physical properties. They say that mental processes are purely physical processes in the central nervous system, and hence man is nothing but a material object. Generally, there are two kinds of physicalism such as scientific physicalism and philosophical physicalism. Scientific physicalism consists in the view that all organic phenomena can be scientifically explained in terms of those concepts and laws, which are capable of explaining and predicting the organic phenomena. On the other hand, philosophical physicalism consists in the claim that any coherent statement about organic individuals like human beings can be reduced to statements about the inorganic physical objects. We generally think that human actions are explained in part by the individual's beliefs, intentions, sensations, etc. However, the central thesis of physicalism is that mental states and processes are nothing more than states or processes in the physical realm of the brain. Mental states are identical with brain states. Physicalists do not claim that the identity of mind and brain is an identity of meaning and that the word "mind" means the same as the word 'brain', or that the word 'belief' means the same as 'such and such a neurological event'. The

identity of mind and brain is contingent, not necessary: the world could have been otherwise, but it happens to be such that mental events happen to be brain events.

The arguments in favour of physicalism are both negative and positive. From negative standpoint, physicalists attempt to show that behaviourism is false or inadequate. From positive standpoint, they argue that only a scientific world-view can provide genuine explanations. Hence, they argue that any true explanation of the nature of mental phenomena will show that these phenomena can be identified with events of a certain kind, which form the subject matter of physical sciences. Physical scientists believe that we live in a wholly physical universe- a universe, which has no room for such items as spiritual substances. This is the picture of the universe given to us by modern science. The positivist and materialist thinkers of the past have defended a purely physicalist view of the universe. They adopt the Occam's Razor which means: "Do not multiply entities beyond necessity." In other words, we can satisfactorily explain the universe by referring to "n" entities and "not try to explain it by referring to 'n+1' entities."[24] Thus, if we can explain everything in the universe quite satisfactorily by referring to molecules and atoms and the still smaller particles of physics, we ought not to try to introduce into our explanation any reference to entities sueh as souls. Souls are superfluous.

Physicalism suggests that human beings, whatever he is, can be described adequately with the terms and concepts employed by the science of physics. The physicalist believes that the method of natural sciences, in particular physics, can be counted upon to give a comprehensive description of human being. The contention of physicalism is that man is no more than a complicated physical system, and the so-called soul of man is a myth.

Accordingly, the physicalists argue that mental events can be completely explained in terms of physical ones, usually events in the brain. Therefore, physicalism is a form of monism: it is the view that there is just one sort of substance called the physical substance. Mental events are identical with the physical ones. As Thomas Nagel argues, physicalism means that a person, with all his psychological attributes, is nothing over and above his body, with all its physical attributes. The various theories, which make this claim, may be classified

according to the identities, which they suppose between the mental and the physical. For him. the thesis of physicalism provides us with the explanation of the mental phenomena in terms of the physical phenomena. It does not require general identities at every level. that is, there need not be for a person a specific physical state of the body which is in general identieal with having a stomach ache, in the order that physiealism be true.[25] Physiealism requires only that the events and states. which arc called mental, be identical with physical events and states. Physicalists in general do not really believe that the identity of mental events and brain events is necessary. They believe that the contingent identity of mind and brain must have something to do with natural laws. They accept a physically determined universe.

According to physiealism. mental states arc physical states. more exactly, states of the brain or the central nervous system - in the way in which lightening is an electrical discharge. That is. it declares that the identity of mind with the brain in a matter of fact. established by scientific investigation. Physiealism does not require that mental events be identical simply with slate of the person's body, narrowly conceived.

Kripke's thesis about the nature of identity has important consequences for physiealism. If minds and mental processes, and brains or brain processes are natural kinds. the 'mental' processes and 'brain processes' are rigid designators.[26] So if the statement "mental processes are brain processes"' is true then the identity of mental process and brain process is necessary, and also the identity statement itself is a necessary truth. But the problem for physiealism is that the physicalists themselves argue that there is no necessary connection between the mental and brain events. Kripke therefore poses a serious difficulty for physiealism.

IV. Functionalism

Functionalism is a theory that explains mental phenomena in terms of the internal input and the observable output. It takes mental states as the internal causes of behaviour. Against dualism. the functionalist holds that the mind is not something that exists apart from the physical. Against materialism, the functionalist denies

that mental states are identical with physical states. For functionalism. it is not the physical substance itself that is important, but rather the way in which the physical substance is organized. It admits a network of interrelated mental states and processes, which explains that the mind as a complicated system of processes can be realized in a machine. H. Putnam characterizes functionalism as a model of mind, according to which, psychological states are simply computational states of the brain. Functionalism holds, according to him. that

> The proper way to think of the brain is as a digital computer. Our psychology is to be described as the software of this computer—its functional organization.[27]

The main concern of functionalism is to specify the relations between the different sorts of thought and behaviour. Jt is the view that mental states arc definable in terms of their causal relations to sensory inputs, behavioural outputs, and other mental states It acknowledges the fact that it is impossible to identify mental state with behavioural dispositions, but it characterizes menial states by reference to behaviour as the output. By characterizing mental states in terms of their causal roles, funclionalism explains how a subject behaves in different circumstances. For example, when we experience pain, our experience has a characteristic "feel*. Thus, we have a conscious experience, an experience with certain qualities or qualia. But for functionalist, these qualities are a particular kind of causal role in our psychological process.

According to functionalism. there are three different kinds of causal relationship for mental state's causal role. First, there is the input condition that a subject's environment slates can cause that subject to have a certain type of mental states. For example, injury to one's leg causes him/her to feel pain. Secondly, there is the output condition that a certain type of mental state can interact causally with other mental states of the same subject, e.g. feeling pain in his/her leg causes him/her to believe that the leg has been injured. Thirdly, there is the internal role condition that there are characteristic ways in which a certain type of mental state can give rise causally to the bodily behaviour of its subject. For example, the subject believes that his/her leg has been injured and he/she has a desire to relieve the consequent pain and cause the leg to withdraw from harm's

way. Thus, there is an input-output relation between the environment, the mind and the behaviour of the subject.

For functionalism, mental states are characterized as 'software' states of a computer like in terms of their relations to the computer's 'inputs' and 'outputs.'[28] P.M. Churchland discusses that

> The term 'hardware' refers to the physical computer itself and its peripheral devices, such as the keyboard for input, video screens and printers for outputs, and external or 'passive' memory tapes/disks/drums for both. It contrasts with the term 'software', which denotes a sequence of instructions that tell the hardware what to do."[29]

Thus, 'software' state of a computer means it is storing of a particular piece of information, which is like a subject's possession of a certain belief. A software state may be contrasted with a 'hardware' state of the computer, such as an electromagnetic state of certain of its circuits, which correspondingly is likened to a neural state of a person's brain. For example, the computer's "inputs" are keystrokes on its keyboard, whereas its 'outputs' are patterns displayed on its video screen. These are likened to stimulations of a subject's sensory organs and movements of his or her body. According to this view, the biological function of the heart is to circulate blood through the body and thereby keeping the body oxygenated and nourished. The biological function of the brain is to gather information from the body's environment and process that information in accordance with certain 'programs' that have been 'installed" in it either by genetic evolution or else through learning processes.

Functionalism describes this type of relations of mental states without any "mysterious mental entities" which is called a Ramsey Sentence. For example, suppose John has the belief that p, and that this is caused by his perception that p: and together with his desire that q, the belief that p causes his action a.[30] Here, we are defining beliefs in terms of their causal relations. We can eliminate the explicit use of the word 'belief and simply say that there is something that stands in such-and-such causal relations. Through the Ramsey Sentence, functionalism shows that there is nothing especially mental about mental states. That means, any system, whatever it is, can have mental states, provided that it has the causal

relations between its inputs (its inner functioning) and its outputs. Searle remarks. "It just treats the mind as a kind of a black box in which these various causal relations occur, and for that reason it was sometimes labeled "black box functionalism."[31]

For a functionalist, the same mental state can be physically realized in a variety of different ways, and so, it is 'multiply realizable.' There can be indefinitely many different physical properties, which are total realizations of the same functional property. According to Shoemaker:

> ... while having a given total realization of a functional property is sufficient for having that property, it is not necessary for it—that same functional property could be instantiated in virtue of the instantiation of some quite different total realization of it/"[33]

However, Block and Fodor have argued that the same physical state can realize different functional properties at different times, or in different circumstances, or in different creatures.[33]

According to functionalism, mental states and processes are functional kinds. It accepts physicalism and claims that our mental states are implemented in a neural stuff and not in a spiritual stuff. So on the level of description, there is the causal and logical relations among perceptions, beliefs, desires, and behaviours, and on the structural level, there are spiking frequencies of neurons, patterns of excitations, etc. According to P. Churchland:

> In our case the functional organization that is our psychology is realized in our neural 'gubbins.' In similar fashion, it is because on-off switches in a computer are orchestrated as they are that it adds, finds square roots, and so forth. The computer's program is realized in its electronic 'gubbins.[34]

The multiple-draft-model given by Dennett suggests similarity between the functions of the human mind and those of the computer. The brain system functions in relation to different sub-systems. So there are multiple drafts, which operate within an artificial system. Such an analogy is beneficial because it analyses consciousness from the point of view of language processing. This is

given importance precisely in the sense that a linguistic or language speaking being is considered not only as a conscious being but also a rational being. Even the robots as information processing systems can also be characterized as intelligent systems. According Dennett, "of course, we are machines, we are just very, very sophisticated machines made of organized molecules instead of metal and silicon, and we are conscious, so there can be conscious machines — us."[35] So the human thought process and language processing in the artificial systems are analogous to each other. In the case of the conscious thought process, we are aware of our thoughts, at the same time, there is physico-chemical process, which goes on in our brain.

Dennett's functional analysis of consciousness is divided into two parts; namely the sub-personal view of consciousness and the multiple draft-model of consciousness. The sub-personal model explains consciousness and other mental activities through the help of neurological states and processes of the organism, whereas the multiple-draft-model discusses how an artificial system behaves intelligently. Dennett offers a functional explanation of consciousness at the sub-personal level. He writes:

> Sub-personal theories proceed by analyzing a person into an Organization of subsystems (organs, routines, nerves, faculties, components-even atoms) and attempting to explain the behaviour of the whole person as the outcome of the interaction of these subsystems. Thus in the present instance the short coming emerged because the two access notions introduced computational access *simpliciter* and the computational access of a print-out faculty, were defined at the sub-personal level; if introduced into a psychological theory they would characterize relations not between a person and a body, or a person and a state of affairs or a person and anything at all. but rather, at best relations between parts of person (or there bodies) and other things.[36]

The sub-personal level of explanation of consciousness tries to explain not how the human beings are system of organism but how the system is being constituted and how the various functions involved in different physiological parts of the organism function together. And that functional structure would help us in defining the capacity involved in causing consciousness or what we call conscious

behaviour. A state of consciousness is simply, one which exhibits a certain characteristic pattern of causal relations to other states, both mental and physical.

For the cognitive theorists, a functional state of the brain is just like a computational state of a computer. It seems we have a perfect model of functional organization in a computer program. A computer program can be described as being a functional organization of the hardware i.e.. the programmer provides the organization of the hardware, which causes it to produce a desired result. Nowadays functionalists argue that mental states are like the "information - processing" states of a computer. According to the computer functionalism, which is artificial intelligence or strong AI, the brain is a computer, and the mind is a computer program implemented in the brain. Mental states are just program states of the brain. However, the functionalists face a problem regarding consciousness. They seem to think that our conscious feeling of pain consists entirely in the functionally analyzed program states of a digital computer in our skull. Thus, when it comes to conscious feelings such as pain, there is a difference between functionalists and others. According to our ordinary common- sense conception, pains are unpleasant sensations. That is. they arc unpleasant, inner, qualitative, subjective experiences. Whereas the functionalists believe that pains are physical states that are parts of patterns of functional organization in brains. In human beings the functional organization is like this: certain input stimuli such as injuries cause physical states of the nervous system, and these in turn cause certain sorts of physical output behaviour, (these arc computational, information processing states). In humans, these functionally organized physical states don't cause pains, they are just pains.

A functionalist defines any mental state in terms of its typical relations to other mental states and its effects on behaviour. Functionalism can be more easily understood through a comparison with the relationship between a computer and its program. While talking about computers it is convenient to make a distinction between hardware and software. The hardware of a computer is what it is physically made up of- transistors, circuits, silicon chips, screen, keyboard and so on. The software, on the other hand, is the program, the system of operations, which the hardware carries out. The software can usually be adopted lor use in a

number of different systems. The software is usually a complicated system of instructions to the computer hardware, which can be physically carried out in a number of different ways, but achieving the same result.

Functionalism as a theory of mind is concerned with the software of thought rather than the hardware. It is not a theory about the hardware of thought at all, although it is certainly compatible with various kinds of physicalism: it is neutral about what sorts of physical systems mental programs operate in. Its main concern is to specify the relations, which are held between the different sorts of thought and behaviour. However, functionalism does not give an adequate account of conscious experience and sensations such as what it is like to be in pain, to be happy, to be thinking about the weather and so on because of its commitment to physicalism.

Functionalism is criticized by philosophers as it does not give a sufficient account of conscious experience and sensations such as what it is like to be in pain, to be happy, etc. It fails to account for the real nature of the mental states, because it reduces mental states to the machine states. The functionalists always leave out the qualitative subjective feel of some of our mental states. There are certain qualitative experiences involved with our mental states such as seeing a red object or having a pain in leg, etc. Functionalism describes only these experiences in terms of their causal relations and leaves out the qualia.

Functionalism is able to explain the mental states in terms of the functional states of the brain but cannot explain the inner or qualitative nature of our mental states. In case of color sensations, for example, when viewing a tomato, I have what is really a sensation-of-green where you have the normal sensation-of-red. But since we have no way of comparing our inner qualia, and we both have the same observational discriminations among objects, there is no way to tell whether my spectrum is inverted relative to yours. The problem for functionalism is: even if my spectrum is inverted relative to yours, we remain functionally isomorphic with each other. My visual sensation is functionally identical with your visual sensation. Therefore, they are the same type of state and it does not make sense to suppose that my sensation is 'really' a sensation-of-green. If it meets the

functional conditions for being a sensation-of-red. then. by definition. it is a sensation-of-red. According to functional ism. a spectrum inversion of the object described is ruled out by definition.

Functionalism fails to characterize our color experiences. In case of spectrum inversion. there is no difference between my colour experience and your color experience, because in respect of color experiences. we arc functionally equivalent. That means, my color experiences and your color experiences would exhibit exactly the same pattern of causal relations to environmental states. other mental states or behaviour. After all. they would have exactly the same causal role. However. our color experiences have the most striking feature called •qualitative character."

A similar objection is often made to people who argue that computers can have minds. For example, Searle has used a thought experiment in his effort to indicate the difference between a human being and a computer. Imagine that someone is locked in a room. He/she does not understand Chinese. Through the letterbox in the door. one pushed various Chinese characters printed on bits of card into the room. On a table in the room are a book and a pile of bits of card with other Chinese character on them. His/ her task is to match the Chinese characters on the piece of card, which came through the letterbox with a Chinese's character in the book. The book will then indicate another different Chinese character, which is paired with it. He/she must take this other character from the pile of cards on the table and push it back out through the letterbox. From outside the room it appears that he/she is answering questions about a story in Chinese. The cards coming into the room are questions written in Chinese; those he/she pushes back their answers also in Chinese. Even though he/she doesn't understand Chinese, from outside the room it appears that he/she has understood the story and has given intelligent answers to the questions he/she is being asked about it. Though he/she does not have any experience of understanding the story: he/she is simply manipulating what to him/her are meaningless characters. Imagine we install an 'intelligent computer program' in the same position as his/her in Searle's Chinese room' thought experiment. Like he/she, it just manipulates symbols without genuinely understanding what they refer. Consequently, if we think of

functionalism on the computer analogy suggested above, it cannot give us a complete picture of the mind. It does not have genuine understanding.

According to Chalmers:

> ...one can believe that consciousness arises from functional organization but is not a functional state. The view that 1 advocate has this form – we might call it non-reductive functionalism. It might be seen as a way of combining functionalism and property dualism.[37]

Ned Block and J.R. Searle argue that the functionalist would be forced to say that all kinds of inappropriate systems have mental states. According to the functionalist view, a system made of beer cans, or ping-pong balls, or the population of China as a whole, could have mental states such as beliefs, desires, pains and itches. Chalmers says, "The functional organization by itself is not yet consciousness. Consciousness has to be added to the functional organization."[38] He believes that functional organization is not the same thing as consciousness, but they always go together. He writes. "Whether the organization is realized in silicon chips, in the population of China, or in beer cans and ping-pong balls does not matter. As long as the functional organization is right, conscious experience will be determined."[39] It is hard to give up computer functionalism because it is the main research program in cognitive science, but, on the other hand, no one has been able to give even a remotely plausible functionalist account of consciousness. It is logically possible that there could be zombies that were organized just as we are and had exactly our behaviour patterns, but were totally devoid of consciousness. Therefore, it follows that our consciousness cannot logically consist simply in our behaviour or functional organization. To discuss this we can take an example _ suppose some one's brain is replaced by silicon chips that reproduce behaviour but without the consciousness that typically goes with the behaviour. The silicon chips may transmit stimuli that make us get up and cross the room, but we may not be conscious that we are doing so. If such a thing is imaginable, and it surely is. then consciousness cannot be just a matter of behaviour or functional organization. Suppose when silicon chips replace the brain the resultant machine utters such sounds as "I fell in love with you at first sight" or " 1 find this line of poetry thrilling" even though the "system" has no conscious feeling whatever. The machine makes the sounds, but has no more feeling than a tape recorder or a voice synthesizer that makes such sounds. Such a

system is logically possible, in the sense that there is nothing self-contradictory about the supposition that consciousness arises in virtue of the functional organization of the brain. Functional organization just refers to the pattern of physical causes and effects that begins with input stimuli and ends with output behaviour. Brain processes cause consciousness and the robot has nothing like a brain structure which is sufficient to cause consciousness. The robot has the functional organization but not consciousness.

Ned Block argues against functionalism as, if functionalism were true and functional organization were sufficient for having a mind. we could imagine the population of china as a whole carrying out the steps in some functional program for mental states. for example - one citizen per neuron.[40] Block discusses functionalism as a 'narrow' mental states in his China-Brain argument against the machine functionalism. For him functionalism is guilty of liberalism and the classifying systems are lack mentality.[41] For example. suppose the government of China convert to functionalism and we convince its officials to realize a human mind for an hour. We replace each of the little men with a citizen of China plus his/her two-way radio. which connects them to the artificial body and to other persons. The system of a billion people communicating with one another plus satellite plays the role of an external "brain" connected to the artificial body by radio.[42] Here he pointed out that there is nothing absurd about a person being connected to his brain by radio.[43] But the question is: how could something be functionally equivalent to us for some time? The inputs and outputs are only neural activity in the artificial body connected by radio to the people of China. The systems only lack mentality and does not explain the mental states like sense organs. He describes that the homuncil-headed functional simulation has not any mental states. However, the population as a whole would not thereby constitute a mind, nor would the population, as a whole be conscious.

V. Mind-Brain Identity Theory

Currently the most discussed version of materialism is the identity theory. It holds that thoughts, feelings, wishes and the rest of the 'mental phenomena* are identical with states and processes of the body. Both identity theorists and

behaviourists identify mental states with physical states. Behaviourists define the mental states in terms of the behavioural states of the body. Identity theorists also define them in terms of identifiable structures of the bod)', i.e., ongoing processes and states of the bodily organs. According to Shaffer. "the identity of the menial with the physical is not exactly of this sort, since it is held to be simultaneous identity rather than the identity of a thing at one time with the same thing at a later time."[44] For example, lightning = electrical discharge. The identity theorist holds that thoughts, feelings, wishes, etc. are identical with physical states, but not 'identical* in the sense that mentalistic terms are synonymous in meaning with Physicalistic ones. Thus, to be in a certain mental stale is to have a certain event going on in the cerebral context of our brain; we may not know what it is. but the two are identical.

For the physicalist. each mental entity may be identical with some entity in the brain or the central nervous system. For example, a pain of a certain sort may be taken to be identical with some occurrence in the nervous system. According to this theory, there are no mental entities, but there are experiences like having an after-image. This experience is identical with some brain process. The identity theorist does not claim that, whenever a person has a certain after-image, he/she is undergoing some brain process. Rather. the identity theorist claims that the experiences itself are brain processes. But some philosophers argue that brain processes cannot be strictly identical with experiences. because they do not share all their properties. For example, brain processes have a definite location. but experiences are located either not at all or in terms of the person who has them. However. if a mental experience is really identical with a brain process. it is equally correct to say that certain physical processes are identical with experiences. In any case, all the identity theories accept that there is an identity between the mind and the brain.

U.T. Place's identity theory examines a certain view of the nature of the relation between mind and brain. and between mental states and the physiological states of the brain. This view lays down that mental states are quite literally identical with brain states; any given mental state is, roughly, a brain state or a brain process or a feature of a process in the central nervous system. [45] Place does

not argue that, when we describe our dreams, fantasies and sensations, we are talking about processes in our brains. That is, he does not claim that statements about sensations and mental images are reducible to or analyzable into statements about brain processes, in the way in which cognition statements are analyzable into statements about behaviour. He argues:

> This is shown (a) by the fact that we can describe our sensations and mental imagery without knowing anything about our brain processes or events that such things exist, (b) by the fact that statements about one's consciousness and statements about one's brain processes are verified in entirely different ways and (c) by the fact that there is nothing self-contradictory about the statement 'x has a pain but there is nothing going on in his brain"[40]

He asserts that "the statement consciousness is a process in the brain," although not necessarily true, is not necessarily false.[47] That means, the statement 'consciousness is a process in the brain' is, in his view, neither self-contradictory nor self-evident: it is a sensible scientific hypothesis, like the statement 'lightening is a motion of electric charge.'

The identity between consciousness and brain process is not a logical identity, but sometimes it is confused with logical identity, because of a failure to distinguish between what we may call the 'is" of definition and the 'is" of composition.[48] Here Place makes a distinction between the functions of the word 'is' in statements like "A square is an equilateral rectangle," "Red is a colour," and its function in statements like "This table is an old packing case." These two types of 'is' statements have one thing in common. In both cases, it makes sense to add the qualification 'and nothing else". Statements like "A square is an equilateral rectangle" are necessary statements, which are true by definition. Statements like "This table is an old packing case," on the other hand, are contingent statements, which have to be verified by observation. In the case of statements like "A square is an equilateral rectangle" or "Red is a colour", there is a relationship between the meaning of the expression forming the grammatical predicate and the meaning of the expression forming the grammatical subject. So whenever the subject expression is applicable, the predicate must also be applicable. If something is a state of consciousness, it may not be a brain process,

since there is nothing self-contradictory in supposing that someone feels a pain when there is nothing happening inside his skull. In the same way. we may conclude that a table may not be an old packing case. because there is nothing self-contradictory in supposing that there is a table. but it is not an old packing case. There is a difference between the table-packing case example and the consciousness-brain process case. This is because the statement "This table is an old packing case" is a particular proposition which refers only to one particular case. whereas the statement "consciousness is a process in the brain" is a general or universal proposition applying to all states of consciousness.

All mind-body identity theories arc physicalist to some extent in view of the fact that they arc committed to the view that every phenomenon that has a mental description has a physical description as well. Identity theory is therefore committed to the scientific hypothesis that ultimately all mental happenings are physical events. In order to establish the identity of consciousness and certain processes in the brain. it would be necessary to show that the introspective observations reported by the subject can be accounted for in terms of processes, which are known to have occurred in his brain. A mental process is a brain process. That is, we can identify consciousness with a given pattern of brain activity, if we can explain the subject's introspective observations with reference to the brain processes with which they are correlated.

J.J.C. Smart explains strict identity between the mental states and the brain processes. He supports Place's notion of identity, because it emphasizes only the scientific aspects of notion of identity. According to him, "A man is a vast arrangement of physical particles and that there are none over and above these sensations or states of consciousness."[49] For example, an after-image, or an ache is a report of a process that happens to be a brain process. He defends the thesis that sensation statements cannot be translated into statements about brain processes. Therefore, he doesn't claim that the logic of a sensation statement is the same as that of a brain process statement. A sensation statement is a report of something; in fact, this something is a brain process. Sensations are nothing over and above brain processes. He says:

> ...on the brain- processes thesis the identity between the brain process and the experience is a contingent one. So it is logically possible that there should be no brain process, and no processes of an)' other sort either (no heart process, no kidney process, no live process). There would be the experience but no 'corresponding' physiological process with which we might be able to identify it empirically.[50]

He argues that though this is a possibility, empirically, it is not the case. The relation of identity shows that all experiences are composed of the physical properties of the brain processes. That is, the brain processes are physico-chemical properties, which cause sensation, feelings and other mental states. A conscious experience is an especially difficult process involving a vast number of neurons. It is a process, not stuff. Brain process is an inner phenomenon, which needs to be identified through the advanced science of neurophysiology. Brain processes are not over and above of all our conscious experiences including our linguistic behaviour. When someone says he is experiencing pain in his right toe. he is experiencing the pain, because there is stimulation of the c-fiber of the neurological structure of the brain processes. Smart remarks:

> All that I am saying is that 'experience' and 'brain processes" may in fact refer to the same thing and if so we may easily adopt a convention (which is not to change in our present rules for the use of experience words but an addition to them.) where by it would make sense to talk of an experience in terms of appropriate to physical processes.[51]

There are two kinds of identity theory such as token-token identity theory and type-type identity theory, which can be explained as follows:

(a) Individual mental states are identical to individual brain states *(token-token identity theory).*

(b) Types of mental states are identical to types of brain states *(type-type identity theory)*

Type-type identity theory holds that each type of mental state is identical with some particular type of brain slate or physical state; for example, pain is the firing of C-fibers. Token-token identity theory maintains that each particular

mental state or event is identical with some token brain state or event. That is, every token mental state can be identified with some token physical state.

Type-identity theory advocated by Place. Smart. and Armstrong is a hypothesis about the correlations between sensations and brain processes. According to this theory. the identity of mental states with brain states is a scientific hypothesis. and it is similar to other scientific type-identities. such as heat is molecular motion. lightning is electrical discharge. and water is H2O. It explains that if my mental state for seeing red, X. were identical to my brain state Y, then whenever I saw red, I would always have mental state X and therefore brain state Y. In other words. conscious experiences can be categorized into types. each with its characteristic mental and brain states.

Token identity theory admits that it is possible that brains will not function in exactly the same way to produce mental states. For example. it is not possible to identify certain types of mental activity – such as seeing a red bus or feeling angry - with a certain type of brain state. Also. it is possible that different people, who are in the same mental state, have different brain states. Even if all these things are true. it does not mean that identity theory is false.

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CHAPTER 3

FUNCTIONALISM, COGNITIVISM AND CONSCIOUSNESS

According to functionalism, mental phenomena arc defined in terms of the external input and the observable output of a system. So mental states are defined by their causal relations. There is nothing specifically mental about the so-called mental states. These consist entirely in their causal relations to each other and to the inputs and outputs of the system of which they are a part. There are only causal relations between consciousness and brain processes. In this chapter. I will discuss how functionalism itself has been shown to fail to explain consciousness in terms of the mechanical model of the mind. Consciousness has been found to be the residual states of the computational functions of the mind. The cognitive mental states and processes are always related with the phenomenon of consciousness. Therefore. it is imperative to investigate the nature of cognition in relation to consciousness.

I. Varieties of Functionalism

We have already discussed in the previous chapter that for functionalism, the mental states are functional states. That is. the mind is a complicated machine and mental processes are computational process which can be realized in a machine. Mental states are realized by their relations to their sensory stimulation or input or by other inner states or their behavioural aspects. Consciousness would be a mental process with certain kinds of causal relations to the inputs. There are so many different varieties of functionalism. each based on a different model, and all of which try to specify the different sorts of input—output relations. The main concern of functionalism is to specify the relations between different sorts of thought and behavior. It tries to individuate mental states causally, as mental states have mental causes and effects as well as sensory causes and behavioural effects. According to Shoemaker:

> ...functionalism is the view that mental states are definable in terms of their causal relations to sensory inputs, behavioural outputs, and other mental states.[1]

Functionalism explains that our mental states are naturally related to what goes on in the brain or the central nervous system. Mental states, however, are not necessarily brain states. In any case, they are physical states and are related with each other through causal relations. For example, an intelligent robot has mental states but its thinking depends on silicon chips rather than on biological neurons.

According to strong functionalism, our concept of a particular mental state type has a state whose tokens have a strictly defined causal-functional role or ultimately sensory input and behavioral output. For every psychologically distinct type of mental state M, there is a distinct corresponding functional role R.[2] In case of moderate functionalism, for every psychologically distinct type of menial stale M, there is some functional role R, which can be assigned to M. In this case, which functional role corresponds to which type of mental state has to be determined by empirical investigation. According to M. Lock wood, " from a functionalist standpoint, be it strong, moderate or weak, we have no guarantee that your pains and mine will, in physical respects, be all that similar: what it is that plays the causal-functional role of pain in my brain, might, in physiological terms, be something very different from what plays that role in yours."[3]

A common functionalist claim is that the same mental state can physically be realized in a variety of ways. That is, for every mental state M, there are different ways of realizing it. What matters is the functional organization of the state and not the stuff out of which it is made. This is called multiple realizability theories. In his essay "Mad Pain and Martian Pain",[1] Lewis discusses two kinds *of* beings, which experience pain differently than normal humans. In the case of mad pain, the subject experiences pain when doing moderate exercise in an empty stomach; further, it improves his concentration for mathematical reasoning. On the other hand, Martian pain takes place in a Martian organism constructed of hydrolic hardware rather than neurons. Here the point is that pain is associated only contingently with either its causes (as in mad pain) or its physical realization

(as in Martian pain). We cannot specify *a priori* its causal role or physical realization.

There can be indefinitely many different physical properties, which constitute the realizations of the same functional property. However, "it is also true that the same physical state can realize different functional properties at different times or in different circumstances or in different creatures."[5] The functional states are "multiply realizable" in the sense that a functional state cannot be identical to any particular physical realization *of* it. For example, someone could write a program using two completely different types of computer, which use different sorts of hardware to run the same program. In this sense, the program said to be "multiply realizable" in that any number of computers may be used to realize the same program. Functionalism takes states of mind and mental properties to be functional states and properties. Mental properties are realizable by, but not identical with, material properties. For example, the same mental property, the property of being in pain, may be realized by one property in a human being and to a certain extent by another properly in an invertebrate. For the functionalist, if someone has now a particular pain, then he/she can imagine that this pain is realized through a particular neural state. That neural state has an identifiable material structure, and this may be studied by a lover-level hardware science like neurobiology. Therefore, for functionalism, what makes the state a realization of pain, is not its material constitution but it's occupying a particular kind of causal role within our nervous system. Multiple realizability thus implies that there is a higher-level functional description of physical states in terms of their causal role which abstracts from their lower-level physical constitution. It is with such functional properties that mental properties can be identified.

Ned Block identifies three kinds of functionalism. The first is simple decompositional functionalism, which refers to a research programme that relies on the decomposition of a system into its components, and then the whole system is explained in terms of these functional parts. Secondly, computation-representation functionalism that describes mind as a computer (computer-as-mind analogy). Psychological explanation under computation-representation functionalism is "akin to providing a computer program for the mind."[6] Thus,

mental processes are seen as being decomposable to a point where they can be thought of as processes that are as simple as those of a digital computer or similarly a Turing machine. Lastly. Block identifies metaphysical functionalism. This form of functionalism is a theory of mind that hypothesizes that mental states simply are functional states. The metaphysical functionalist claims that mental states are functional states because they have the causal relations between inputs, outputs and other mental (i.e. functional) states of the system, as in the Turing machine.

Machine functionalism describes human brains in three levels. The first two are scientific levels such as biological, (neurophysical) and the machine-program or computational. Third is the common sense level of folk-psychology. At the first level. biologists describe human neurobiology in functional terms and make available neurophysiological descriptions of brain states. At the second level, psychologists work out the machine program that is realized by the lower-level neuroanatomy and describe the same brain states through more abstract computational terms. At the third level. psychologists also explain behaviour, characterized in everyday terms. by reference to stimuli. and to the intervening mental states such as beliefs and desires. type-identifying the mental states with functional or computational states as they want.[7]

H.Putnam[8] has compared mental states to the functional or logical states of computer or a computer program. which can be realized by any of a number of physically different hardware configurations. The different hardware configurations may have different physical and chemical properties. Putnam believes that the psychological properties of human beings are not the physical and chemical properties of human beings, although they may be realized by the physical and chemical properties of human beings. Thus, functionalism does not reduce psychological properties to physical properties.

Functionalism as a theory of mind espouses the 'multiple realizability" theories. Both analytic functionalism and psycho-functionalism agree that there arc conceivable creatures in which mental states have very different physical realizations. If we think of mental states in this way- that is, as "multiply

realizable", then it is possible that one day. a machine that can "think", or be artificially intelligent. In this way, the process of thinking would be comparable to a computer program that could run on different types of machine.

Putnam's Turing machine functionalism explains that the machine receives input, carries out the instructions of the input program, changes its internal state and produces an appropriate output based on the input and instructions. Machine functionalists claim that the mind is like a Turing machine. They argue that we can easily understand functionalism through the relationship between a computer and its program. The hardware of a computer is that which is actually made out of the system of operations, which arc carried out by it. The software, on the other hand, is the program, the system of operations, which the hardware carries out. The software can usually be modified for use in a number of different systems. This involves a complicated system of instructions to the computer hardware, which can physically be carried out in a number of different ways, but achieving the same result.

Ned Block discuses the difference between Functionalism and Psychofunctionalism with the help of the Ramsey sentence of a psychological theory. According to him:

> Mental-state terms that appear in a psychological theory can be defined in various ways by means of the Ramsey sentence of the theory…All functional state identity theories ...can be understood as defining a set of functional states... by means of the Ramsey sentence of a psychological theory—with one functional state corresponding to each mental state. The functional state corresponding to pain will be called the 'Ramsey functional correlate' of pain, with respect to the psychological theory. In terms of the notion of a Ramsey functional correlate with respect to a theory, the distinction between Functionalism and Psychofunctionalism can be defined as follows: Functionalism identifies mental state S with S"s Ramsey functional correlate with respect to a *common-sense* psychological theory; Psychofunctionalism identifies S with S's Ramsey functional con-elate with respect to a *scientific* psychological theory.[9]

The functionalist thinks that all of our mental states can be defined in terms of functional states. The functional states play causal roles in the system. It does not matter what the intrinsic make-up of those states is. In humans, they are certain kinds of brain states. In Martians, they would likely be different sorts of states. In an appropriately programmed computer, they would be electronic states. These would be different physical realizations of the same causal roles. The functionalists thus identify our mental states with the causal roles.

According to Ned Block, functionalism is guilty of physicalism. Because, for the functionalist, 'pain' is identical to a physical state, or it is a first-order physical property (token physicalism). However, some philosophers do not accept this. They argue that, if functionalism is true, then physicalism is probably false. If pain is a functional state, it cannot be a brain state, because creatures without brains can realize the same Turing machine programme as creatures with brains.

Block's first objection to common-sense functionalism is that it is too 'liberal', that is, it attributes mental states to too many things, including things which intuitively have no mental life. He gives an example:

> Imagine a body externally like a human body, say yours, but internally quite different. The neurons from sensory organs are connected to a bank of lights in a hollow cavity in the head. A set of buttons connects to the motor-output neurons. Inside the cavity resides a group of little men. Each has a very simple task: to implement a •"square" of an adequate machine table that describes you. On one wall is a bulletin board on which is posted a state card, i.e., a card that bears a symbol designating one of the states specified in the machine table. Here is what the little men do: suppose the posted card has a 'G' on it...Suppose the light representing input I_{17} goes on. One of the G-men has the following as his slows task: when the card reads 'G' and the I_{17} light goes on, he presses output button O_{191} and changes the state card to 'M'... In spite of the low level of intelligence required of each little man, the system as a whole manages to simulate you because the functional organization they have been trained to realize is yours.[10]

If, according to him. the functional roles are constitutive of mental states, then it does not simply follow from the truth of functionalism that they are physical states at all. Block gives another example of China-brain argument in which the citizens of China replace the homunculi. He argues that in both cases the common-sense functionalist is committed to saying that the system has mental states like our mental states, and the system has the same functional organization that we have. However, he rejected this view because these systems do not have seem to have any mental states. In both cases, the Homunculi-head and the China-brain have prepositional attitudes, but it is doubtful whether they have any qualitative mental states, like pain or perceptual experiences. So common-sense functionalism is wrong in the sense that the systems with functional organizations very similar to ours do not have mental properties at all. Having mental states is qualitatively very different from having certain functional organization.

The psychofunctionalist is concerned with systems, which are functionally equivalent in common sense respects and also in terms of the functional characteristics of their underlying cognitive mechanisms. However, there are important functional differences between the cognitive mechanisms in our brains and the mechanisms in the Homunculi-head and China-brain. Psychofunctionalism is therefore not committed to saying that those systems have mental states. Block's view is that psychofunctionalism still has troubles accounting for qualitative states like pain and perceptual experiences. He gives an inverted spectrum argument to try to show that experiences may differ qualitatively even though they have the same causal role. Therefore, the qualitative features of experience cannot be defined in functional terms. He complains that psychofunctionalism is too "chauvinist", that is, it denies mental states to too many things, including things which intuitively have those mental states. He gives an example in which we encounter Martians who arc equivalent to us in all common-sense functional respects, but not in terms of their underlying cognitive mechanisms:

> We develop extensive cultural and commercial intercourse with the Martians. We study each other's science and philosophy journals, go to each other's movies, read each other's novels, etc. Then Martian and Earthian psychologists compare notes, only to find that in underlying

psychology. Martians and Earthians are very different... Imagine that what Martian and Earthian psychologists find when they compare notes is that Martians and Earthians differ as if they were the end products of maximally different design choices (compatible with rough functional equivalence in adults). Should we reject our assumption that Martians can enjoy our films, believe their own apparent scientific results, etc.?... Surely there are many ways of filling in the Martian/Earthian difference 1 sketched on which it would be perfectly clear that even if Martians behave differently from us on subtle psychological experiments, they nonetheless think, desire, enjoy, etc. To suppose otherwise would be crude human chauvinism."

The common-sense functionalists specify inputs in terms of light and sound falling on one's sense organs, and output as movements of arms and legs. They define mental states in terms of causal relations to these inputs and outputs. The creatures, which arc capable of having those mental states, will have inner states standing in causal relations to inputs and outputs of those sorts. But what about creatures that lack our sense organs, and lack arms and legs'/ What about creatures with different neural structures than ours or creatures with no neurons'? These non-human creatures obviously will lack mental states, according to functionalism. That will be a kind of chauvinism according to Block.

Functionalism accepts the idea that, according to such a view of the mind, it is possible to imagine zombie-like, non-conscious creatures that do not possess 'qualia'. Such creatures, which fulfill the functionalist criteria for possessing a mind, could not be said to be human in the full sense of the term. In other words, the non-functionalists argue that qualia are necessary in addition to any functionalist explanation in order to account for minds. Functionalism agrees that brain states are responsible for mental states, but disagrees that they are identical with them. It argues that neurological states or brain activities help to realize mental states, which then lead to behaviour. In this way, it solves the main problems by proposing that brain states are "low level" activities that help realize "high level" mental states. To understand this point, we discuss example of a computer. Suppose we ask a computer to add the numbers 3 and 7. On one level-

at a low level, what is happening in the eomputer is dependent on the hardware; on another level- a high level - the computer's software is calculating the answer. Since, computers have different hardware that works in different ways, we cannot describe the process of calculation as the activity of hardware. However, the functionalist argues that the process of calculation is simply realized by the hardware. Therefore, the software is a function of the hardware.

For a functionalist, consciousness would be a mental process with certain kinds of causal relations to the inputs, to other mental states or processes, and to certain behaviours. One can also posit the existence of zombies, unconscious beings that have the same behaviour and the same brain states as a conscious being, but have no qualia. However, the functionalist theory fails to prove the qualitative aspect of mind- what it is like to be consciousness. Because it is possible to say that brain states cause consciousness, or that functional slates are caused by brain states, but these things do not tell us how the subjective experiences themselves arises. The problem with this is that our subjective experiences are the most real for us. We know what it is to feel pain or to remember being at the park, but the functionalist view does not look like to include this picture.

11. Artificial Intelligence

In the last section, it is discussed how functionalism fails to explain consciousness in terms of the mechanical model of the mind. Now we will discuss: Where is the place of consciousness in artificial intelligence? AI is the theory that believes that it is possible for a machine to 'think'. It supposes that computers are thinking intelligent machine. Now we face the question: Can AI prove consciousness in a machine? According to Al, the human brain is like a digital computer, and the human mind is just a computer program. It tries to prove that the relation between the programs and the computer hardware is like the relation between mind and brain. Some supporters of Al argue that we have every reason to believe that computers have intelligence. At the same time, some others argue that computers' intelligence is limited whereas human intelligence has no limit. Nowadays computers have achieved some modest success in proving

theorems, guiding missiles, sorting mail, driving assembly-line robots, diagnosing illness, predicting weather and economic events, etc. Computers receive, interpret, process, store, manipulate and use information. Thus, intelligent behaviour is programmed into the computers. On the contrary, we have no idea how the brain functions, but we have an idea of the general relationships between brain processes and mental processes. Mental processes are caused by the brain activities which are functions of the elements constituting the brain.

The main aim of Al is to reproduce mentality in computational machines, and to try to prove that the functions of a machine are similar to the functions of the human mind. But the question is: Could a machine have mental states? For Al, in the words of Searle:

> ...there is nothing essentially biological about the human mind. The brain just happens to be one of an indefinitely large number of different kinds of hardware computers that could sustain the programs, which make up human intelligence. On this view, any physical system whatever that had the right program with the right inputs and outputs would have a mind in exactly the same sense that you and I have minds.[11]

Searle is here critical of the view that any physical system that has the right program with the right inputs and outputs would have a mind in exactly the same sense that human beings have minds. The cognitive scientists believe that perhaps they can design the appropriate hardware and programs - artificial brains, and minds- that are comparable to human brains and minds. However, here the question arises: is it possible that a machine can have consciousness like sensation and feelings?

Searle has discussed the difference between man and machine by highlighting the notion of understanding. Through his 'Chinese room' argument, he has proved that a computer has syntax, but no semantics. For a human being, to understand a language involves more than just having a bunch of formal symbols. It involves having an interpretation, or a meaning attached to those symbols. A digital computer deals with or manipulates only formal symbols, because the function of the computer is defined in terms of its ability to realize programs.

These programs are purely formal as they have no semantic content and have only syntactical structures. Human minds are semantical by nature, because they have more than a formal structure, they have content. Computer programs, on the contrary, are entirely defined by their formal, or syntactical structure.

Scarlc writes:

> No computer program by itself is sufficient to give a system a mind. Programs, in short, are not minds, and they are not by themselves sufficient for having minds. . . For any artefact that we might build which had mental states equivalent to human mental states, the implementation of a computer program would not by itself be sufficient. Rather the artefact would have to have powers equivalent to the powers of the human brain.[13]

Searle makes a distinction between strong Al and weak Al. Strong AI argues that it is possible that one day a computer will be invented which can function like a mind in the fullest sense of the word. In other words, it can think, reason, imagine, etc.. and do all the things that we currently associate with the human minds. On the other hand, weak AI argues that computers can only simulate human mind and are not actually conscious in the same way as human minds are. According to weak Al. computers having artificial intelligence are very powerful instruments in the hands of man. Whereas Strong AI holds that computer is not merely an instrument in the study of the mind, but the appropriately programmed computer is really a mind in the sense that computers can think and do reasoning like the human beings. In Strong AI, the programmed computer has cognitive states, so the programs are not simple tools that allow us to test psychological explanations; rather the programs are themselves the explanations. Strong Al. according to Searle, basically claims that the appropriately programmed computer literally has cognitive states, and that the programs thereby explain human cognition.

The main point of Searle's Chinese Room thought experiment was to show that the syntactic manipulation of formal symbols does not itself constitute semantics. The implications of this thought experiment for computationalism and strong AI are the following: first, computationalism fails because the formal

syntax of a computer program has been shown not to be intrinsically semantic, and second, strong AI fails because a system behaving as if it had mental states, is insufficient to establish that it has these states. The mental states have intentionality which cannot be reproduced by a computer program.

R. Penrose discusses this nature of consciousness and computation, and provides an answer to the question whether our feelings of conscious awareness of happiness, pain, love, aesthetic sensibility, will, understanding, etc. can fit into a computational model of mind. Will the computers of the future actually have minds? He gives answer with four points:

(a) All thinking is computation; in particular, feelings of conscious awareness arc evoked merely by the carrying out of appropriate computations.

(b) Awareness is a feature of the brain's physical action; and whereas any physical action can be simulated computationally, computational simulation cannot by itself evoke awareness.

(c) Appropriate physical action of the brain evokes awareness, but this physical action cannot even be properly simulated computationally.

(d) Awareness cannot be explained by physical, computational, or any other scientific terms.[14]

Awareness, understanding, consciousness, intelligence, perceptions are all our intuitively given mental activities. These cannot be computationally explained according to Penrose. Thus, according to him, for example, 'intelligence' requires 'understanding' and 'understanding' requires 'awareness'. Awareness is a basic feature of consciousness. These mental activities are basic to the human mind. Penrose remarks:

> ... a person's awareness is to be taken, in effect, as a piece of software, and his particular manifestation as a material human being is to be taken as the operation of this software by the hardware of his brain and body.[15]

However, human awareness and understanding are not the result of computations understanding by the brain. Understanding is the inborn activity of the human mind which cannot be simulated by the computer. Human understanding cannot be replaced by computer simulations. The strong AI, much

against our ordinary understanding of the mental activities, try to reduce them to computational functions. In the words of Penrose:

> Thus, according to strong Al. the difference between the essential functioning of a human brain (including all its conscious manifestations) and that of a thermostat lies only in this much greater *complication* (or perhaps "higher-order structure' or 'self-referential properties', or some other attribute that one might assign to an algorithm) in the case of a brain. Most importantly, all mental qualities - thinking, feeling, intelligence, understanding, consciousness—are to be regarded, according to this view, merely as aspects of this complicated functioning; that is to say. they are features merely of the *algorithm* being carried out by the brain. [16]

It is, therefore, obvious that the strong Al cannot explain the mental activities properly.

Some philosophers believe that consciousness is a computational property, but the problem is nobody, today, knows how to design a conscious machine. McGinn discuses the word 'machine' in two ways, i.e. narrow sense and wide sense. The narrow sense refers to those machines, which are constructed by human beings such as motorcars, typewriters, pocket calculators, office computers, etc. In these machines, consciousness cannot be found. In the wide sense of the word "machine", there are mechanical devices, which are the artefacts or the intentional products of some kind of intelligence. Here the question arises whether an artefact could be conscious McGinn puts forward the following questions:

> (a) Could a human artefact be conscious? (b) Could an artefact of any conceivable intelligence be conscious? [17]

The first question concerns whether human beings can produce a conscious artefact with his superior technological power. It is like asking whether we shall ever travel to another galaxy. The second question raises the issue of whether the concept of an artefact is such as to eliminate the possession of consciousness. McGinn does not rule out the possibility that an artefact could be conscious. According to him:

> Suppose there were an intelligence clever enough to create beings physically just like us (or bats). Then I think this intelligence would have created conscious beings. ... If we are the artefacts of God. this is not a reason to suppose ourselves unconscious. After all. there is a sense in which we are artifacts: for we are the products of natural selection operating upon inorganic materials to generate brains capables of subserving consciousness.[18]

In the wider sense. the human beings are artefacts of nature and are conscious. Even then. all artefacts like tables and chairs are not conscious. Consciousness is an intrinsic property of organisms, and so in the strict sense, only organisms are conscious. That is. only living things can be conscious, and so a conscious being must be animate. organic. and alive. As Wittgenstein puts it:

> ...only of a living human being and what resembles (behaves like) a living human bei ng can one say: it has sensations: it sees, is blind, hears. is deaf. is conscious or unconscious.[19]

Here he is making a conceptual link between being conscious and being alive. According to this view. a conscious being either must be alive or must be like what is alive. where the similarity is between the behaviour of the things in question. In other words. only of what behaves like a living thing we can say that it is conscious. Our concept of a conscious state is the concept of a state with a certain sort of behavioural expression. We cannot really make sense of a conscious stone, because the stone does not behave like a conscious being. The point is that being biologically alive is not a necessary condition of consciousness, but it is necessary that a conscious being should behave like a living thing. Thus, instead of identifying consciousness with the material composition of the brain, we should identify it with certain higher-order properties of the brain, which manifest in conscious behaviour. For example, pain is a higher-order property of physical states, which consists in having a certain pattern of causes and effects, and certain outward behaviour.

Now coming back to the problem of AI. it goes without saying that machines do not have consciousness. The so-called artificial intelligence does not entail consciousness. The computing machines of AI are limited in a way that

human beings are not. so that it is out of the question for a conscious mind to arise merely in virtue of computation.

D.Chalmers discusses in his masterly work *The Conscious Mind* objections to AI under two categories, namely external objections and internal objections. In case of external objections, he tries to establish that computational systems could never even behave like cognitive systems. The internal objections, on the other hand, admit that at least the computers may reproduce human behaviour, but they would lack minds all the same. It suggests that they would have no inner life, no conscious experience, no true understanding. According to the external objections, there are certain functional capacities that humans have, but computers do not. However, it seems that we have good reason to believe that the laws of physics arc computable, so that at least we should able to study human behaviour computationally. But that does not entitle us to infer that neural processes in a brain give rise to consciousness. The computers lack not only the human brain, but also the inner conscious life of man.

It may be argued that our brains are like the digital computers, since they implement any number of computer programs. And, of course, our brains can think. So the question is: Can a digital computer think? Is implementing the right computer program with the right inputs and outputs sufficient for or constitutive of thinking? The answer is "no". Because the computer program is defined properly syntactically, whereas thinking is more than just a matter of manipulating meaningless symbols. It involves meaningful semantic contents. If really it is a computer, its operations have to be defined syntactically, whereas consciousness, thoughts, feelings, emotions and the rest of it involve more than syntax. For the strong AI, the mind is purely formal; so it cannot be treated as a concrete product of biological processes like any other biological product. For it. the mind is more than a part of the natural biological world; it believes that the mind is purely formally specifiable.

For Scarle, on the contrary, consciousness, intentionality, subjectivity and mental causation are all a part of our biological life history, along with growth, reproduction, etc. No computer program by itself is sufficient to give a system a

mind. Programs arc not minds and they are not by themselves sufficient for having minds. When it is said that it is impossible for a machine to be conscious, it is not always clear to what extent this is intended to be a logical objection, and to what extent empirical. The question, whether a machine can be conscious, depends on its successful emulation of the behaviour of a man who. we should all agree, is conscious. If a man answers smartly, when we whisper his name behind his chair, then we have no doubt that he is conscious. However, a machine may respond to the same sound frequently with the same reply and we should not feel satisfied that it was conscious. We thus know that the question of consciousness can be raised only with regard to living beings and not regarding machines. Consciousness is not a property which can be detected in a machine by any physical examination, because it cannot be identified with any physical characteristics of a machine. Nor can it even be correlated with them, as the color red can be correlated with certain wavelengths of light. The fundamental element in these correlations is the subjective experience, and it is exactly this element whose presence in the robot is in question.

The mistake in the case of consciousness is to ignore its essential subjectivity and try to treat it as an objective third person phenomenon, whereas consciousness is essentially a subjective, qualitative phenomenon, first person perspective.[20] The most common mistake about consciousness is to argue that it can be analysed behavioristically or computationally. It is a mistake to suppose that, for a system to be conscious, it is both necessary and sufficient that it has the right computer program or set of programs with the right inputs and outputs. A traditional objection to behaviorism was that behaviorism could not be right because a system could behave as if it were conscious without actually being conscious. There is no logical connection, no necessary connection between inner, subjective, qualitative mental states and external, publicly observable behavior. Of course, conscious states characteristically cause behavior. However, the behavior that they cause has to be distinguished from the states themselves.

The computational model of consciousness is not sufficient for explaining consciousness, because computation is defined syntactically. It is defined in terms of the manipulation of symbols. However, the syntax by itself can never be

sufficient for the sort of contents that characteristically go with conscious thoughts. Syntax by itself does not generate the semantic content. Semantic content is intrinsic to the human mind. However, computation does not name an intrinsic feature of reality but is observer-relative, and this is because computation is defined in terms of symbol manipulation. Something is a symbol, only if it is used as a symbol. The Chinese room argument of Searle's shows that semantics is not intrinsic to syntax. Something is a symbol only relative to some observer, user or agent who assigns a symbolic interpretation to it. Computation exists only relative to some user or observer who imposes a computational interpretation on some phenomenon.[21]

III. The Representational Theory of Mind

What is the function of our mental states? In answering this question, the representational theory of the mind states that mental states are representational states and mental activity is the activity of acquisition, transformation and use of information. The central question is: How can mental phenomena and symbols be about things? Fodor suggests that the mind-cum-brain is not merely representational and computational, but also functional. The mind is an aspect of the brain. According to him:

> ...to describe human beings as having beliefs or desires or hopes or wants or any of the other propositional attitudes is to describe the cognitive functions of human being. Humans really do have beliefs and desires and hopes and wants, or at least something very like them, in their heads."

He further says that:

> ...unless we limits our claims about individual mental functions to those case where there exists a computational mechanism that can carry out the function and where we have at least some idea of what such a mechanism must be like, we arc likely to be dealing in functionalist 'pseudo-explanations."

According to Fodor, from functionalists view, if there are no computational processes in the brain, then we can claim anything what **clue** we like within our heads. However, we have a 'universal question-answerer' process in our head

with a functional capacity and it produces answer (output) whenever ask question (input).

We can understand the intentional states in our mind. if we accept that beliefs and desires are real. and that they represent intentional mental states in the form of sentences that Fodor calls as the 'language of thought". Intentionality or the capacity to have informational content is a feature of our brains. For Chomsky, the language of thought will be some natural language. the learning of which is made possible by our universal grammar. This universal grammar is the universal ability to learn natural languages. not a language for representing concepts or the contents of propositional attitudes or anything else. Whereas Fodor believes that we must have a universal language of thought or 'language of the brain'. in terms of which we really do our thinking (or do our mental computation).

In the case of computer analogy. the language of thought is like the binary machine code understood by the hardware. It exists between the hardware and software as a way of representing the machine's states in a form. or syntax. that is clear for humans. and that can translate into human readable languages. For example. a belief that "it is cold" is a matter of somebody's feeling of the cold. forming a belief that it is cold in a sentence in the language of thought with an appropriate functional role, and then translating this belief into the English language, "it is cold".

The language of thought is a system of representations. and it is the way we can understand how a mind that is understood as a higher-level entity could systematically correspond with the bodily functions. It provides both semantic content and syntactic form to the thoughts and the human language sentences.

Chomsky says that we have strong grounds, from empirical data about natural languages for positing a universal grammar, or universal competence for generating our different natural languages. Similarly. Fodor believes that we have strong empirical grounds for positing a real innate language or representational system, which is the basis for our universal capacity to learn natural languages. The RTM assumes that symbols do not have intrinsic meanings, and that their

meaning depends upon how they are deployed. It also suggests that symbols in our language of thought have meanings only insofar as we assign them meanings. The term 'language' in the language of thought applies strictly to some parts of our brain language than to any natural language. It is clear that what is common in both the brain language and the natural language is that they are all representational. According to Fodor. "'there are compelling reasons derived from linguistics for asserting, one cannot learn a language unless one has a language."[24]

Fodor claims that a person could not use correctly any predicate of any natural language, unless in some way he/she could represent to himself/herself in a language that stands behind and is developed mentally before the natural language. Fodor says:

> If we reflect for a moment upon the nature of our ubiquitous companion the computer, we will experience less resistance to this whole notion of a brain language, for a digital computer computes in one language but communicates with the programmer in another.[25]

The computer's internal machine language is unique to the computer, and so in that sense, private to the computer. The programming language, on the other hand, is the medium of communication between programmer and machine, and is what appears on printouts for the use of others, and so in that sense, it is a fully public language. The two languages, the private machine language and the public programming language arc connected in the machine by means of an "innate" compiler.[2"] The RTM entails that any propositional attitude, such as a belief that so-and-so or a desire that such-and-such, is literally a computational relation between an organism and some formula in the internal code of that organism. The formula is the object of the propositional attitude in question. This internal formula is a piece of information represented in the case of humans, in the brain's language of thought. As Fodor puts this:

> To believe that such and such is to have a mental symbol that means that such and such tokened in your head in a certain way: it's to have such a token in your belief box.'...Mental processes are causal sequences of tokenings of mental representations."[27]

In the language of thought, thus, the mental states are symbolically represented and causally connected.

Fodor points out that an important general consequence of adopting the RTM is the preservation of the independence and autonomy of psychology. If the representation theory gives us an accurate picture of how the brain works, then the psychological explanation will be computational ones in terms of the relationship of the propositional attitudes. The relationship of the propositional attitudes will be explained in terms of the various ways of processing contents, which are represented in the language of thought. The psychological explanation would involve intentional vocabulary at this level. Therefore, it would follow that psychological explanations could never be reduced to the non-intentional explanations of neuro-physiology or even the more basic ones of physics and chemistry.

The RTM accepts the mental representations as very similar to the internal representational states of a digital computer. The mental representations represent in no stronger sense than the punched cards of a Jacquard loom represent. Fodor tells us that the propositional attitudes are really in the head. We must have in our heads a representational system, which is more like a natural language than any other representational system. The propositional attitudes like belief and desire are basic to our understanding of the mental representation. The RTM provides a way of understanding how minds, higher-level entities, function like digital computers and yet retain the intentionality of the mental representations.

The RTM tries to explain how the representational menial states such as belief, desire, hope, doubt etc. represent or have content, and how the contents of the various mental states influence the causal interactions of the various mental states and the production of overt behaviour. According to Fodor, by providing a relational treatment of the propositional attitudes, it is possible to state how they have content. According to the relational treatment, propositional attitudes are related with the organism and its internal mental representation.[28] For example, the mental state, 'belief', represents its content because of its relation to the other internal mental representations.

Fodor gives two reasons in support of the relational treatment of the propositional attitudes. First, it is intuitively plausible that propositional attitudes are relations. For example, when John believes something, it seems that John stands in relation to something, i.e., the object of belief. Secondly, existential generalizations apply to the objects of propositional attitudes. If John believes it is raining, then we can undoubtedly say that there is something, which John believes. It shows that belief is a relation between John and something that he believes. According to Fodor. the representational entities are sentences or formulae of an internal language of thought or mental state.[29] John's belief state is about rain because of a formula of the internal language of thought that is about rain. The internal language of thought is universal in the sense that any system that possesses our psychology should have the same system of internal representations with the same syntax and semantics.

Computational Representational Theory of Mind (CRTM) provides a two-fold way of type-individuating mental states, that is. they can individuate on the basis of cither computational relation or the content of the representations. The belief that the earth is round is differentiated from the belief that the earth is flat, because of the differences in the contents of the series of symbols that express the corresponding proposition. Similarly, the belief that earth is round is differentiated from the doubt that the earth is round, because of the differences in computational relations. The Computational Representational Theory of Mind holds that, for explanations in cognitive psychology, we should take into account only the formal aspects of the mental states. Semantic notions such as truth, meaning and reference do not have any explanatory role in cognitive sciences, because the semantic notions do not figure in the psychological categories. According to Fodor:

> The idea that mental processes are basically formal is in a sense the reformulation of the Cartesian claim that the character of mental processes is somehow independent of environmental causes and effects.[30]

According to Fodor, mental representations have two basic concerns such as, first, it must specify the intentional content of mental states, and secondly, the

symbolic structure of mental states must define the functions of the mental processes. The specification of intentional content of mental states or cognitive states describes its relationship that is held between the propositional attitudes and the intentional content. Though the primary aim of advocating the notion of mental representations is to give a realistic account of propositional attitudes.

For Fodor, mental states are token neural states. All the token mental states are syntactically characterized, by characterizing the mental or cognitive states as purely syntactical or symbolic in their forms. According to Fodor:

> ...the very function of the brain organism and the cognitive states is such that it has a specific mechanism which transforms the representations into the internal representations.[31]

That is why. all the cognitive states are known as internal representational stales. By cognitive architecture. Fodor means the causal network of the cognitive or mental states. The cognitive architecture defines the mental processes. Fodor writes:

> One might think of cognitive theories as filling in explanation schema of. roughly, the form: having the attitude R to proposition P is contingently identical to being in computational relation C to the formula (for sequence of formula) F. A cognitive theory, in so far as it was both true and general, would presumably explain the productivity of propositional attitudes by entailing infinitely many substitution instances of this schema: one for each of the propositional attitudes that the organism can entertain.[12]

On this account, symbols are formula of the internal code. There are two levels of functions in so far as the determination of content is concerned. They are the symbolic structure of mental states whose function determines the intentional content of the propositional attitudes and the other in the neural process. These two levels are causally related in the sense that causal law is applied to the function of mental or representational states. According to Fodor. each mental state is identical with a brain state. The mental or representational states have causal properties, thus relating the symbolic structure of mental or cognitive states with the neural processes. Fodor writes:

> ... the causal roles of mental states typically closely parallel the implication of structures of their propositional objects; and the predicative success of propositional-attitudes psychology routinely exploits the symmetries thus engendered...the structure of attitudes must accommodate a theory of thinking; and that it is pre-eminent constraint on the latter that it provides a mechanism for symmetry between the internal roles of thoughts and their causal roles.[33]

Thus, Fodor holds the identity relation between the neural events and states with the linguistic or cognitive states. Moreover, the propositional attitudes of the cognitive stales are dependent upon the causal efficacy of the neural states and processes. Both Chomsky and Fodor strongly hold that language processing or the thought processing is a cognitive activity, but not a conscious activity. According to Gillctt:

> ...the cognitive activity of human beings can be understood as a set of transitions between causally structured inner stales as specified by formal syntax and semantics.[34]

The process of symbolization through the language of thought is purely syntactical in nature. Representation, which is a part of human thought process, takes place in the language of thought. Fodor remarks:

> ...representation as discussed in cognitive science is an abstraction from structured patterns of activity in a holistic web of brain function. In this abstraction, we still identify the key elements of an item of conceptual information by focusing on the central aspects of the use of the sign for the concept.[0]

Semantic representation takes consciousness as the fundamental principle for concept formation. Human beings are not only biological systems with certain dispositional features, but they are also higher order conscious beings. Searle argues in favor of semantic representation, which has a biological origin. He writers:

> Apparently it is just a feet of biology that organisms that consciousness have, in general, much greater powers of discrimination than those that

do not. Plant tropisms. for example, which are light sensitive, are much less capable of making fine discriminations and much less flexible than, for example, the human visual system. The hypothesis that 1 am suggesting then is one of the evolutionary advantages conferred on us by consciousness in the much greater flexibility, sensitivity and creativity we derive from being consciousness.[36]

We think, imagine and try to comprehend the reality and its nature with the capability of our creative thinking. And all these are understood with reference to the semanticity that is directed about the things in the world. Semantic realization is a linguistic realization because what we think is the language that we use. Linguistic activity is something specific to the human mental life in particular and human life in general. Thus, there is biological basis of our semantic system.

Mental representations are important for not only what they express, but also especially for what people can do with them. We can evaluate the computational capability of an approach to mental representation in terms of how it accounts for three important kinds of high-level thinking.[17] The first is problem solving: A theory of mental representation should be able to explain how people can reason to accomplish their goals. There are at least three kinds of problem solving to be explained: Planning, decision-making, and explanation. Planning problems include how to get to the airport before the (light leaves, and the sort of exercise students are commonly asked to do in the classroom. In decision-making, people faced with a number of different means for accomplishing their goals need to select the best one. Explanation problems require people to figure out why something happened. Every intelligent human being is capable of planning, decision-making and generating explanations. A cognitive theory must have sufficient computational power to offer possible explanations for how people solve these kinds of problems. The computational power of a system of representations and procedures is not just a matter of how much the system can compute; it must also take into account how efficient the computation is. When people solve a problem, they arc usually able to learn from the experience, and thereby solve it much more easily than the next time. From experience, we can

learn how to solve problems. So a theory of mental representation must have sufficient computational power to explain how people learn.

In addition to problem solving and learning, a general cognitive theory must account for human language use. General principles of problem solving and learning might account for language use. but it is also possible that language is a unique cognitive capacity.[38] At least three aspects of language need use to be explained: People's ability to comprehend language, their ability to produce utterances, and children's universal ability to learn language.

In artificial intelligence, it is explained how people develop computational models in problem solving and other activities. Cognitive science aims al understanding human cognition; so it is crucial that a theory of mental representation not only has a lot of representational and computational power, but also it is concerned with how people think. Accordingly, the third criterion for evaluating a theory of mental representation is psychological plausibility, which requires accounting not just for the qualitative capacities of human, but also for the quantitative results of psychological experiments concerning these capacities. A cognitive theory must not show how a task is possible computationally, but also try to explain the particular ways that humans do it. Cognitive neuroscience has thereby become an important part of reflection on the operations of mind; so we should try to assess each approach to knowledge representation in terms of neurological plausibility, even though information about how the brain produces cognition is still limited.

The final criterion for evaluating theories of mental representation is practical applicability. Although the main goal of cognitive science is to understand the mind, such understanding can lead to many desirable practical results. For educational purposes, for example, cognitive science should be able to increase understanding of how students learn, and to suggest how to teach them better. Thus, cognitive science increases our understanding of the intelligent system including the human mind.

Researchers in psychology, artificial intelligence, neuroscience. linguistics and philosophy have adopted very different methods for studying the mind. but ideally, these methods can come together on a common interpretation of how the mind works. A unified view of cognitive science comes from seeing various theoretical approaches. as all are concerned with the mental representations and the procedures that are similar to the representations and procedures familiar in computer programs.

The representational theory of consciousness is the view that consciousness reduces to mental representations. It is the view that phenomenal characters somehow reduce to representational properties. A state has a 'phenomenal character' just in case it is conscious. Two states have the same phenomenal character just in case what one is like to its subject is the same as what the other is like to its subject. A state has a representational property when. to put it intuitively, it has a meaning or somehow stands in some process for something else. such as an object or a proposition. Some mental states represent other mental states. as I can think about my thinking about Delhi. Here, the thought about Delhi is 'first order: the thought about the thought is 'higher order*. According to first-order representational ism, some representational states that do not concern other mental states like seeing a green tree are sufficient to give rise to phenomenal character by their nature. First-order representationalism identifies phenomenal characters with a pair of content and an attitude.

IV. Cognition and Consciousness

Cognitive science aims at the study and explanation of human cognitive capacities like perception, memory, reasoning, language use and so on. Cognition is essentially an internal mental process. There arc two assumptions regarding the existence and nature of knowing things or minds. First, there is a natural domain corresponding to cognition, namely, minds or knowing things. Secondly, the cognitive states and processes of the mind are phenomenal in nature. That is, cognitive states and processes like perception, memory, reasoning etc., are conscious mental states and processes with their phenomenological properties. Cognitive science is always concerned with the phenomenon of consciousness.

The contents of our conscious experience are closely related to the contents of our cognitive states. Whenever one has a green sensation, individuated phenomenally, he/she has a corresponding green perception, individuated psychologically on the other hand; cognitive activity can be centered on conscious experience.

The cognitive mental states and processes are conscious states and processes. A scientific explanation of consciousness is possible only by attending to the structures and processes that realise the mental properties. The cognitive mental states and processes arc realised as a matter of fact by the structure and organization of the brain and nervous system. For the cognitive scientist, cognition is essentially of the same kind of thing that computers do. Cognition is information-processing in the sense that a computer is equipped to carry out. There are distinctions between the hardware of a computing machine and its software, that is. the material it is made from and the program it runs. The program is held to be similar to cognition, while the brain furnishes the hardware level. Thinking in the brain is like running compute programs. To understand this concept, there are two basic notions - algorithm and symbol manipulation. An algorithm is a mechanical procedure by which we can generate a solution to a problem by taking steps according to rules. The procedure is mechanical in the sense that a machine without understanding could do it. That is. we do not need to know what addition is in order to perform an addition algorithm. An algorithm says: Just do it - don't ask why it works. What the logic behind it is- just carry out the procedure and find out the result. It can bc applied mindlessly, without insight and without comprehension of the end product. It is precisely this property of algorithms that make them so suitable for machine implementation, since machines have not the mental powers to grasp what they are designed to do. Symbol manipulation occurs whenever a symbolic system is made subject to processes that operate on the symbols that compose it. A program is an algorithm for manipulating symbols. The mechanical procedure operates on symbols to produce a certain outcome. A computer works on symbols to give results according to mechanical rules. For cognitive science, mental processes arc programmes in the sense that they are symbol-manipulating algorithms. Here, cognition is information processing.

A machine that simply follows an algorithm by definition does not need to understand what it is doing but why. Our mental processes are not blind and mindless, but those of an algorithmic machine arc. The reason is that computers can do as much as they can do that it is possible to mimic aspects of human cognition without putting understanding into the machine. Thus, we can build machines that do what human minds do without having to put minds into them, which we have no idea how to do anyway. A program is a set of instructions for manipulating symbols, conceived as syntactic objects; it is indifferent to what these symbols mean. We operate with words and sentences because of what they mean. We, the human beings, arc semantic systems, while a computer is a syntactical system. Speaking a language obviously involves the manipulation of symbols, but it is much more than that, whereas a program is nothing more than a method for generating symbols, irrespective of their meaning. Why do we understand and the computer do not? Because we are conscious beings, that's why we understand. It is a necessary condition of understanding symbols that one be conscious. To understand a symbol, one must be aware of its meaning. But the machine cannot be conscious.[39]

Cognition, as we have already seen, is an internal mental process. Therefore, the cognitive mental states and processes are conscious slates and processes. The most important of our cognitive processes is sense perception. Sensory perception can be seen as the continuation of physiological processes in the body, and in this sense, there is no radical difference between the physical and the mental processes. Hence, the entire cognitive process can be seen as a kind of mechanical process. Sense perception, according to Descartes, takes place in three levels such as the physiological processes, the sensations and the judgments consequent upon the sensations. At the first level of perception, external objects stimulate the sensory organs, and the impressions formed thereof reach the brain through the nerves. This immediately leads to the second level of sensory response produced in the mind as a result of its being united with the body. The second level consists of the perceptions of plain, pleasure, color, smell etc. The third level consists of the judgments about the objects in the external world.

For the cognitive scientists, cognition is a formal process in the sense that executing structures and processes is causally successful only because of their structural organization as well as the form of internal representations. Each cognitive act is a conscious act. The sensation is present only in particulars, which are confused. Hence, the clear and distinct universal concepts, which arc to be applied to the particular in order that there be cognition of the external world. must be innate to the mind. Though these universal ideas exist as potentialities, and hence are unconscious, they are defined in relation to consciousness.

There arc deep and fundamental ties between consciousness and cognition. The basic point of this relationship is phenomenal judgment. Phenomenal judgments are often reflected in claims about consciousness and they themselves arc cognitive acts. To understand properly what are phenomenal judgments. David Chalmers divided it into the three parts. These are: first-order, second-order, and third order phenomenal judgments. First-order judgments are the judgments, which concern not the experience itself but the object of the experience. For example, when we have a red sensation looking at a red book, there is generally an explicit or implicit judgment. There is something red. According to Chalmers:

> ...when I have the experience of hearing a "'musical note" there is an accompanying psychological state concerning that musical note. It seems fair to say that any object that is consciously experienced is also cognitively represented, although there is more to say about.[40]

Therefore, alongside every conscious experience, there is a context-bearing cognitive state. This is called as first-order judgment. When we have experience of a red book, there is a corresponding first-order judgment about the red book. Second-order judgments are more straightforward judgments about conscious experiences. In general, it seems that, for any conscious experience, at least one has the capacity to judge that one is having that experience. The third-order judgments are those when we make judgments reflecting on the fact that we have conscious experiences. The three kinds of judgments arc as follows:

> First-order judgment: That is red
>
> Second-order judgment: I am having a red sensation now
>
> Third-order judgment: Sensations are mysterious[41]

According to Chalmers, the most fundamental coherence principle between consciousness and cognition is the relationship between consciousness and first-order judgments. This relation is basically based on the relationship between consciousness and awareness. Awareness is a purely functional notion, but it is nevertheless intimately linked to conscious experience. In some cases, wherever we find consciousness, we find awareness. Wherever there is conscious experience, there is some corresponding information in the cognitive system that is available for verbal report.[42]

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CHAPTER 4

THE NON-REDUCTIVIST APPROACH TO CONSCIOUSNESS

Consciousness cannot be described only through objective behavioural or neurophysical terms. In Searle's opinion, the real meaning of consciousness lies in its subjective and qualitative character. Mental states arc autonomous entities functioning independently of the physical system to which they belong. Searle argues that we invariably and certainly study consciousness, implicitly or explicitly, while learning about the phenomena of the mind. The basic reason is that our notion of the mental is not different from that of consciousness. Since it is a mistake to suppose that the ontology of the mental is objective, it is also wrong to assume that the methodology of a science of the mind must concern itself only with objectively observable behavior. In this chapter. 1 will discuss the widely accepted view that the mental phenomena are essentially connected with consciousness and that consciousness is essentially subjective. According to this view, the computational theory of consciousness is too inadequate to explain the nature of consciousness. Computationalism is reductive in character. Hence, it fails to explain how consciousness is possible.

I. What is non-reduction?

Many philosophers hold the view that mental states are not reducible to any physical states. That is. the mental states are not reductively explainable. There is a debate among philosophers regarding whether consciousness is nothing more than a physical state or function of the brain. According to Chalmers, no reductive explanation of consciousness can succeed, because it simply cannot logically supervene on the physical facts. He claims that there is a non-reductive theory of consciousness. According to this theory, consciousness is "naturally supervenient" but not "logically supervenient"[1] on the physical facts. Chalmers argues that this quality of consciousness makes it different from all other properties, including emergent biological properties such as life. Therefore, if we know all the micro properties of a physical system and their relationship, automatically we know the macro properties. For the physicalists, life is a higher order property, which

emerges out of the physical properties. However, in case of a zombie, the logical supervenience of consciousness is possible but it lacks consciousness. In other words, the logical possibility of a zombie world is considered as a world physically identical to our world, but conscious experiences is impossible in this world. The zombies may be psychological or phenomenal zombies, which are physically and functionally identical to human beings but they lack experiences. According to Chalmers:

> ...the logical possibility of zombies seems equally obvious to me. A zombie is just something physically identical to me but which has no conscious experience – all is dark inside.[2]

The zombie and me have identical physical properties but differ in high-level properties like consciousness. The zombies lack consciousness. Therefore, the high-level property of being conscious cannot be logically supervienent on physical properties. He argues:

> An opponent might agree that nothing in *this* sort of physics entails the existence of consciousness, but argue that there might be a new kind of physical theory from which consciousness falls out as a consequence. [3]

He continues:

> The trouble is that the basic elements of physical theories seem always to come down to two things: structure and dynamics of physical processes…But from structure and dynamics, we can only get more structure and dynamics... conscious experience will remain untouched.[4]

Chalmers argues that no possible expansion of our knowledge to physics could prove that consciousness does logically supervene on the physical. Hence, one cannot reduce facts about consciousness to physical facts and cannot explain the occurrence of consciousness just by them. He argues that given only the physical facts about a person, there is no way we could ever infer the existence of consciousness in that person because of the logical possibility of zombies. Since zombies arc logically possible and because they and their human counterparts would be physically identical, just knowing the physical information about a person is not enough to infer the existence of consciousness. Therefore, one cannot explain consciousness physically. It is impossible to reduce consciousness

to physical structures and their movements. If a zombie world is conceivable, only in the sense in which it is conceivable that water is not H_2O, that is enough to establish that consciousness cannot be rcductively explained. Chalmers writes:

> It suffices to establish the logical possibility of a world physically identical to ours in which the facts about conscious experience arc merely different from the facts in our world, without conscious experience being absent entirely. As long as some positive fact about experience in our world does not hold in a physically identical world, then consciousness does not logically supervene.[5]

We know that our grounds for belief in consciousness are derived solely from our own experience of it. In other words, we can say that our knowledge of consciousness comes from our own experiences and not from any external observation. Suppose we have knowledge of the physics of the universe, i.e.. the configuration, causation and evolution of all the fields and particles in the spatio-temporal manifold. But this information is not enough for us to assume the existence of conscious experience. It is only the first-person experience of consciousness, which poses the problem. Therefore, Chalmers claims that:

> ...there is an epistemic asymmetry in our knowledge of consciousness that is not present in our knowledge of other phenomena. Our knowledge that conscious experience exists derives primarily from our own case, with external evidence playing at best a secondary role.'[1]

For example, when we know everything physical about other creatures, we do not know that they are conscious or what their experiences are.

Thomas Nagel holds that an organism has conscious experience or that there is something it is like to be that organism.[7] It is the subjective character of experience, which is not analyzable through any explanatory system of functional states or human behaviour. However, the point is whatever knowledge we have of consciousness it is clear that consciousness cannot logically supervene. Here Chalmers remarks that:

> If it were logically supervenient, there would be no such epistemic asymmetry; a logically supervenient property can be detected straightforwardly on the basis of external evidence and there is no special role for the first-person case.[8]

For him, consciousness is a iirst-person phenomenon and cannot be inïerred from **the** physicalist standpoint. He writes:

> The epistemic asymmetry associated with consciousness is much more fundamental, and it tells us that no collection of facts about complex causation in physical systems adds up to a fact about consciousness.[9]

So it is logically possible that, while physical facts could be the same, two systems may differ in consciousness. There is thus an explanatory gap between the physical level and consciousness experience. There arc two kinds of laws such as physical laws and psychological laws. There are no "bridging principles" which govern the way phenomenal properties "logically supervene" on physical ones. In other words, consciousness cannot be explained reductively, but can be explained on its own terms. non-reductionism demands postulation of the mental laws. However, it may be hard for a non-reductionist to claim less than the existence of physical and phenomenal properties, along with some way of relating the two. As Chalmers says:

> ...the cornerstone of a theory of consciousness will be a set of psychophysical laws governing the relationship between consciousness and physical systems.[10]

The non-reductionist allows that consciousness supervenes naturally on the physical for the reason that the physical laws are fundamental to the universe. For Chalmers, this supervenience is under psychophysical laws by which it explains how consciousness depends on physical processes, though it cannot be reduced to the latter. These psychophysical laws give us knowledge of the physical facts about a system and knowledge of conscious experience, which is associated with the system. It follows that, while this theory will not explain the existence of consciousness, it will be able to explain specific instances of consciousness under physical structure and the psychophysical laws.

Chalmers holds the view of property dualism in which consciousness 'naturally' supervenes, but docs not 'logically' supervene the physical. Chalmers and other property dualists hold that, while there is only one type of substance (physical matter), there are properties of objects which cannot (in principle) be explained in physical terms. They believe that there are psychophysical laws, which co-relate certain physical states with phenomenal states. These laws are not

laws of physics but must still be accepted as fundamental, for they cannot reduce to any more basic laws or principles. Chalmers remarks that accepting the existence of such additional psychophysical iundamental laws goes against our current scientific view of the world that everything is explainable by physics, but it is necessary for a satisfactory account of consciousness in a largely physical universe. Property dualism is not a reductive theory which reduces consciousness logically to physical processes. The reductive theory *of* experience tells us the basic principle how experience depends on the physical features of the world. However, a psychophysical theory lells us how the physical processes give rise to experience. We know that experience depends on physical processes, but we also know that this dependence cannot derive from physical laws alone. A purely physicalist theory does not tell us why there is experience in the first place. Conscious experience is not directly observable in an experimental context. Therefore, we have to accept that there is an explanatory gap between physical processes and its corresponding experience.

In other words, physical laws can explain all sorts of macroscopic physical phenomena, whereas the psychological laws in a theory of consciousness may explain all sorts of "macroscopic" experiential phenomena. These laws are part of the basic equipment of nature just like the laws of physics. Chalmers explains:

> Physics does not content itself with being a mere mass of observations about the positions, velocities, and charges of various objects at various times; it systematizes these observations and shows how they are consequences of underlying laws, where the underlying laws are as simple and as powerful as possible. The same should hold of a theory of consciousness. We should seek to explain the supervenience of consciousness upon the physical in terms of the simplest possible set of laws.[11]

From the perspective of the fundamental laws, both physics and consciousness are dependent on the basic structure of the universe, and we have good reason to believe that the basic structure has a remarkable simplicity. In physics, first we have laws characterizing macroscopic regularities and later proceed to the underlying fundamental laws. Similarly, in the theory of

consciousness, we start with non-basic laws, characterizing the relationship between physical processes and conscious experience at a high level. The fundamental physical laws will explain the character of physical processes, whereas the psychophysical laws will explain the conscious experiences which are associated with the physical processes. Thus, for Chalmers, the discovery of the psyehophysical laws will constitute a theory of consciousness.

There are so many arguments against the logical supervenience of consciousness. Here we can discuss Frank Jackson's knowledge argument. Jackson's argument is as follows: let us suppose that Mary is the world's leading expert on the brain processes responsible for color vision living in an age of a completed neuroscience where everything there is to know about the physical processes within our brain, is known to her. However. Mary has lived here whole life in a black-and-white room and has never seen any other colours. According to Jackson:

> She knows all the physical facts about us and our environment, in a wide sense of 'physical' which includes everything in *completed* physics, chemistry, and neurophysiology, and all there is to know about the causal and relational facts consequent upon all this, including of course functional roles. [12]

She knows everything about the physical processes in the brain - its biological structure and function about the neural processes involved in visual information processing, about the physics of optical processes. But she docs not know anything about, say, red colour, that is. she has no experience of the colour red. She gets knowledge of red colour only when she steps outside of that black-and-white room and sees red colour for the first time. Chalmers argues this point as:

> Knowledge of all the physical facts will in principle allow Mary to derive all the facts about a system's reactions, abilities and cognitive capacities, but she will still be entirely in the dark about its experience of red. [13]

It follows that the facts about the subjective experience of colour vision are not entailed by the physical facts. In other words, there are facts about conscious experience that cannot be deduced from physical facts about the functioning of the brain. The knowledge of a fact about experience Mary has is different from

knowledge of any other fact. According Frank Jackson, "the knowledge Man' lacked which is of particular point for the knowledge argument against physicalism is knowledge about the experiences of others, not about her own."[14] Before her release she does not know everything about brain states and their properties, because she does not know about certain qualia associated with them. After release she get new colour experiences, she learns something new facts about to see red and what qualia are. Before her release, she could not know what the colour experience is like. She is discovering something about the world when she has an experience of color red and the knowledge she is gaining is knowledge of a fact. Because there is a special quality that conscious experience has. it seems impossible to describe this quality in terms of physics, biology, or physiology. Therefore, consciousness is not reductively explainable.

Thomas Nagel in a similar way holds that our knowledge of the physical facts about bats or mice does not tell us what their conscious experiences are like, if they have at all. No amount of physical or biological knowledge about a bat will make it possible for us to know what it is like to be a bat. From the physical facts about a bat. we can find out all the facts about a bat. except the facts about its conscious experiences. Even after knowing all the physical facts, we still do not know what it is look to be a bat. This is the subjective character of experience. It is not analyzable in terms ol'any explanatory system of functional states as in case of robots that behave like people, even if they experience nothing. Nagel remarks:

> If physicalism is to be defended, the phenomenological features must themselves be given a physical account. But when we examine their subjective character it seems that such a result is impossible. The reason is that every subjective phenomenon is essentially connected with a single point of view, and it seems inevitable that an objective, physical theory will abandon that point of view. [15]

Therefore, the physical facts do not logically entails the facts about conscious experience. Consciousness cannot logically supervene on the physical facts; it shows that no reductive explanation of consciousness can succeed. Because, consciousness cannot be a physical property, nor it can reduce to physical properties. According to Chalmers:

> Structural properties and functional properties can be straightforwardly entailed by a low-level physical story, and so are clearly apt for reductive explanation. And almost all the high level phenomena that we need to explain ultimately come down to structure or function: think of the explanation of waterfalls, planets, digestion, reproduction, and language. But the explanation of consciousness is not just a matter of explaining structure and function. Once we have explained all the physical structure in the vicinity of the brain, and we have explained how all the various brain functions are performed, there is a further sort of explanandum: consciousness itself.'"

Finally, from the above discussion, it follows that mental states are not reducible to physical states. It is because the conscious mental states as distinguished from the physical facts have a subjective aspect. For example, the mental state of pain is not the same as the states of the thalamus and other regions of the brain, since there is a subjective experience of pain. Here, our subjective experience of pain is not reducible to the pattern of neuronal activity that causes subjective sensations of pain. There is a distinction between the subjective experience and the underlying physical reality as in case of ' heat'.

II. Intentionality

Intentionality is one of the properties of the mental states, which means the "aboutness" of the mental states. Mental states like thought, belief, desire, hope, love, hate, fear and mental images have intentionality. John Searle thinks that only beings capable of conscious states can have intrinsically intentional states. He has argued that intentionality cannot be separated from consciousness, as they have a necessary connection. Our conscious experiences are always about something, that means, whenever we are conscious, we are conscious of something. According to Searle:

> ...in any conscious state, the state is directed at something or other, even if the thing it is directed at does not exist, and in that sense it has intentionality. For a very large number of cases, consciousness is

indeed consciousness of something, and the 'of" in 'consciousness of is the 'of" of intentionality.[17]

Thus, there is an aboutness or directedness for most conscious experiences. That is, all the mental representations have intcnlionality as their intrinsic property. For Searle, all our conscious experiences are not intentional in the sense that there may be conscious experiences, which arc not about anything in particular. As he writes, " Many conscious states are not Intentional, e.g.. a sudden sense of elation, and many Intentional states are not conscious. e.g.. 1 have many beliefs that 1 am not thinking about al present and 1 may never have thought of."[18] For example, one's feeling of a sudden joy may not have any cause. and thereby the person may not be able to cite the intentional referent of his happiness. But all mental states are caused by biological processes inside the brain. All that matters for our internal, subjective mental life is dependent only on processes deep inside the brain. They are sufficient for causing any kinds of mental states. However, there is a necessary relation between consciousness and intentionality because, whenever one is conscious there is something that he/she is conscious about.

If someone has a belief. a desire, or a fear, there must always be some content to his/her belief. desire or fear. It must be about something, even if the something it is about does not exist or is a hallucination. Not all conscious states have intentionality in this sense. For example, there are states of depression where one is not depressed about anything in particular but just is in a bad mood. That is not an intentional state. But. if one is depressed about a forthcoming event, that is an intentional state. because it is directed at something beyond itself.

According to Searle. intending to do something is one kind of intentionality.[11,] For example. beliefs are intentional states and who has a belief he/she must intend to do something about it. In order to point out the relationship between the intentional states and the objects or state of affairs, Searle says, "intentional states represent objects and states of affairs in the same sense of 'represent' that speech acts represent objects and states of affairs."[20] There is similarity between Intentional states and speech acts. In case of speech acts, there is a distinction between the propositional content and the illocutionary force. Similarly, in case of intentionality. there is also a distinction between the

representative content and the psychological mode. For example, a speaker can present three different types of speech act in three different sentences such as "Leave the room", "You will leave the room", "Will you leave the room?"[21] In every sentence, the propositional content "you will leave the room" is expressed in speech acts with different illocutionary forces. The first has the force *of* an order or request, the second has the force of prediction and the third has the force oi a question. In these three cases the illocutionary force of an order, question, statement, etc. is related with the propositional content. Like this, in case of intentional states one can assert, order, or request that " you leave the room". So one can hope that "you will leave the room" believe that "you will leave the room", etc. In these cases, the same propositional content "you will leave the room" is presented in a different psychological mode of hope, fear, belief, etc.. Thus, according to Searle, by definition all Intentional states have some representative content."[22] Statements, assertions, descriptions, etc.. have the word-to-world direction of fit; it is true or false depending on whether or not the words match the world. Whereas orders, commands, promises, etc.. have the world-to-word direction of fit; depending on whether or not the world comes to match the propositional content of the utterance. According to Searle, statements like beliefs can be true or false and they have the "mind-to-world"" direction of fit. On the other hand, desires and intentions cannot be true or false but can be fulfilled or carried out, they have the "world-to-mind" direction of fit.[23]

Searle holds that the notion of conditions of satisfaction applies generally to both speech acts and to intentional states.[21] For example, a statement is satisfied if and only if it is true, a promise is satisfied if it is kept and so on. A belief is satisfied if things happen as they are believed and intentions will be satisfied if they are carried out. In these cases, 'conditions of satisfaction' or 'conditions of success' must be there. In other words, we can say that the notion of satisfaction is intuitively natural to both speech acts and intentional states. The speech act represents its conditions of satisfaction and the illocutionary force determines the direction of fit with which represents its conditions of satisfaction. Similarly, the intentional state has conditions oi' satisfaction and the psychological mode determines the direction of fit with which the intentional state represents its conditions of satisfaction.

Moreover, according to Searle:

> ...every intentional state consists of a representative content in a certain psychological mode. Intentional states represent objects and states of affairs in the same sense that speech acts represent objects and states of affairs (though, to repeat, they do it by different means and in a different way. Just as my statement that it is raining is a representation of a certain state of affairs, so my belief that it is raining is a representation of the same state of affairs... Intentional states with a propositional content and a direction of fit represent their various conditions of satisfaction in the same sense that speech acts with a propositional content and a direction of fit represent their conditions of satisfaction.[25]

According to Searle's view, a belief is a representation and it has a propositional content and a psychological mode. The propositional content of belief determines a set of conditions of satisfaction under certain aspects and its psychological mode determines a direction of fit of its propositional content. All of these notions arc explained by the theory *of* speech acts. In case of intentionality, every intentional state consists of an intentional content in a psychological mode and it has a representation of its conditions of satisfaction. The intentional content, which determines the conditions of satisfaction, is internal state of the intentional state. Therefore, somebody can have a belief or desire with its conditions of satisfaction. We can say that the intentional state is a representation of its conditions of satisfaction.

According to the instrumentalist theory, intentionality is reducible to a mechanical process as it can be attained to a mechanical system. For instrumentalism, we can attribute intentionality to a mechanical system since the machine can have an intentional stance. According to William Lyons:

> ... we make such attributions as a result of guessing what part, when speaking in a special 'intentional function' way. the brain and central nervous system would have played in the complex production line of perceptual input, central processing, and behavioural output, if it were an 'intentional engine'.[26]

We already attribute to human's intentional states to explain desires, needs, wishes and the like, which are part of human behaviour. As Dennett writes, "the definition of intentional systems J have given does not say that intentional systems really have beliefs and desires, but that one can explain and predict their behaviour by ascribing beliefs and desires to them."[27] These attributions enable us to predict very well what behaviour will be produced by such a system when it is operating in a known environment.

For the instrumentalist, both the mind and brain have no intentionality. Intentionality is merely a feature of a particular part of our language. But Lyons argues that " there is an important link between the explanations and predictions of the intentional stance and facts about human behaviour and the environment in which the behaviour is produced, which in turn lead us to facts about what is going on, informationally speaking, inside our heads."[28] Intentionality is thus dependent on the intentional stance which we take regarding the intentional systems, human and otherwise.

Some philosophers believe that intentionality is a necessary feature of consciousness. It is a feature of some of our mental states by which they are directed at. or are about the states of affairs in the world. In other words, some of our conscious experiences are always about something, which means, whenever we are conscious, we are conscious of something. For Searle, mental phenomena are both realized in the structure of the brain and caused by the operations of the brain. Therefore, consciousness and intentionality are part of human biology like digestion or the circulation of the blood. That is, consciousness and intentionality are biological processes caused by the lower-level neuronal proeesses in the brain.

There is a conceptual connection between consciousness and intentionality in the following respect. The first basic principle is that consciousness is an ordinary biological phenomenon like digestion. According to Searle, brain processes at the neural level cause conscious states; hence, conscious states are features of the neurobiological substrate.[29] Searle argues that the relation between consciousness and its causal brain processes involves a kind of non-event

causation such as the fact that gravity (a non-event) causes an object to exert pressure on an underlying surface. Searle has put the point another way by describing consciousness as an emergent property of brain processes in the same sense that water's liquidity is an emergent property of the behavior of H_2O molecules.[30]

The second basic principle of Searle's theory of consciousness is that consciousness is irreducible. Consciousness is essentially a first-person, subjective phenomenon, and thus conscious states cannot be reduced or eliminated into third-person, objective neural events. He argues any such attempt at reduction simply misses the essential features of conscious states - that is, their subjective qualities.[31] For example, when we concentrate on our experience of the redness of an apple, we are aware of an intrinsic quality of our experience, where this quality is a quality something has in itself, apart from its relation to other tilings. This quality of experience cannot be captured in a functional definition. The first-person view gives us an account of the subjective experience of the phenomena. Intentionality is a first-person case which is starting with one's own thought.

III. First-Person

The first-person point of view associates the phenomenon of consciousness with the conscious subject. That is to say, consciousness is grounded on the very nature of a conscious being. So being conscious has to be understood from the subjective point of view of a conscious being. According to the Cartesian conception, we have access to the contents of our own minds in a way denied to us in respect of matter. That is why, we can know what we think, feel and want with a special kind of certainty. There is something special about our knowledge of our own minds that naturally goes with the Cartesian view. In other words, a subject (or self) has first person authority with respect to the contents of his or her mind, whereas others (third persons) can only get at these contents indirectly. We count as an authority about our own minds, because we can know about it directly or immediately and this is very different from others' knowledge. According to the first-person account, we ourselves are conscious and have direct access to our consciousness. That is, we can find out what consciousness is from our own case.

When we wake-up in the morning from a deep, dreamless sleep, we can notice the presence of a state qualitatively different from what happened before. In some cases like having an after image, making a decision, etc.. we know all our conscious states from our own experience.

In the first-person account. there is possibility of a private ostensive definition/-[32] We can explain the meaning of an expression to someone by giving him/her a series of examples of the things to which the expression refers. For example, to explain to someone what the colour-words like 'red', 'green', 'yellow', etc.. are. we would give him/her some examples of what red and green things are. According to some philosophers, the first-person account must have at least some sensation words by ostensive definition, by being presented with examples of particular sensations. Every person must have the sensation himself/herself. A person, who has never experienced pain, (in the case of abnormal nervous people, who arc incapable of feeling pain) would not fully understand the expressions like 'pain', 'ache', or 'twinge' on this account. The person himself must experience the sensation to learn the full meaning of the word sensation. The painting to one's own experience is a private ostensive definition.[33] On the first-person account, this element of 'privacy' is an essential part of the meanings of sensation words. If a person 'x' feels pain, only he can have that feeling, others may feel their own pain, but they cannot feel the pain of 'x'. They may be able to tell from the situation and his behaviour that he is in pain, but they cannot tell what his feeling of pain is. His pain is private to himself; no one else can feel it. Anything any other person feels will be that of his or her own feelings.

There are two difficulties that can arise in this connection. First, there is the problem of verification: i.e., could we never have any grounds for applying them in case of others? After all, we can never observe another's inner sensation; we can do that only in our own case. We all can observe the outword behaviour as far as others are concerned. So, could we say to another person that he has the inner sensation? This problem is the problem of other minds. That means, how can one person believe that the inner states of what he/she knows as consciousness in his/her own case ever occurs in other person's case other than his/her own case?

Second, there is the problem of meaning. How could such expressions, which get their meanings from what he/she experiences in his/her own case, apply to others?

The third-person perspective presents an objective picture of consciousness purely from an impersonal point of view. That is why. it cannot present the raw feel oi' experience. The first person perspective gives us more interesting information than third person point oi' view. It is natural to claim that the first-person ascriptions are grounded on the mental states themselves or they are related with mental states themselves. Shoemaker writes:

> One can. apparently, have this knowledge without presuming anything about the connections between the mental states and the bodily stales of affairs, behavioural or physiological, which serve as the evidence for our ascription of these same mental states to other persons. Thus the first-person perspective apparently gives one a freer rein than the third-person perspective in investigating, empirically, the connections between mental states of affairs and bodily ones. And so if we arc concerned with what the possibilities are. with respect to these connections, imagining what we could discover from the first-person perspective seems potentially more revealing than imagining what we could discover from the third-person perspective.[34]

From the first-person perspective, the brain-mind identity theory does not hold good. One can imagine that someone is in pain without there being any C-fiber stimulation going on. Here Shoemaker argues that it is easy enough to imagine a case in which C-fiber stimulation is going on in someone and that person is not in pain. But the question is whether it is true that every brain state can be imagined to occur without the subject being in pain. He argues:

> We cannot be in a position to judge about someone *both* that she is not in pain *and* that she is in a state that influences her behaviour in just the ways we think pain influences behaviour...someone can be in pain when there is no behavioural evidence that she is. and when there is behavioural evidence that she is not - she may be successfully suppressing the manifestations of pain. And in such a case we will normally believe, mistakenly, that the person is not in pain...the

person's brain is in the state C-fiber-stimulation-plus-and if we don't realize that this is an optimal candidate for being a total realization of pain, we may continue to believe that the person is not in pain while believing that she has in her brain what is in fact an optimal candidate for being a total realization of pain.[35]

In this connection. Searle discusses the example of silicon chips thought experiment in which the parts of someone's brain are progressively replaced by silicon chips. Here the procedure starts with a treatment for blindness due to deterioration of the brain and the doctor replaces silicon chips into the visual cortex. According to him. what the thought- experiment shows is that:

...we imagine that your brain is entirely replaced by silicon chips; that as you shake your head, you can hear the chips rattling around inside your skull. In such a situation there would be various possibilities...you continue to have all of the sorts of thoughts, experiences, memories. etc., that you had previously; the sequence of your mental life remains unaffected. In this case, we arc imagining that the silicon chips have the power not only to duplicate your input-output functions, but also to duplicate the mental phenomena, conscious and otherwise, that are normally responsible for your input-output functions.[36]

Searle further writes:

...as the silicon is progressively implanted into your dwindling brain, you find that the area of your conscious experience is shrinking, but that this shows no effect on your external behaviour. You find, to your total amazement, that you arc indeed losing control of your external behaviour. You find, for example, that when the doctors test your vision, you hear them say. "We are holding up a red object in front of you; please tell us what you see." You want to cry out. "I can't see anything. I'm going totally blind." But you hear your voice saying in a way that is completely out of your control, "I see a red object in front of me."[37]

In these thought experiments the first-person experiences are missing. The external observable behaviour remains the same, but conscious experience gradually shrinks to nothing. From the outside, it observes that the person is fine, but from the inside, he is gradually dying. Here, a certain physical makeup fails to support mentality and consciousness. Searle says:

> In this case, we are imagining a situation where you are eventually mentally dead, where you have no conscious mental life whatever, but your externally observable behaviour remains the same. [18]

In above thought experiments. Searle shows the causal relationships between brain processes, mental processes, and externally observable behaviour. The silicon chips arc able to duplicate certain input-output functions of the brain; they also maintain heartbeat, respiration, and other vital processes but the patient's conscious mental life is left out."[19] Here the ontology of the mental is essentially a first-person ontology. Mental states only exist as subjective, first-person phenomena. The first-person point of view is quite different from the third-person point of view, because, from the third-person point of view, one cannot be able to tell whether one had mental states at all.

To explain experience, a first-person perspective is needed. A common conception of how we experience the outer world is that something that is a thought or information is transferred from the outer world into the sphere of the first- person. There is something that is the mind, and, therefore, there is something that it is like to be that mind-and it is a first-person experience. If there is anything to which we have a distinctive first-person access, it is the "phenomenal" aspects of such states to which Nagel[40] called "what it is like" to have them. If one views a bat from the "third-person" external observer's perspective, one may be able to observe everything that, in principle, there is to observe about bat physiology and behaviour. But one cannot observe how the bat experiences the world. The point is how broad one's knowledge may be of bat physiology and behaviour, one cannot know what it is like to be bat from the bat's point of view. Therefore, for Nagel, bat consciousness could never be just a construct within an information processing model.[41]

The first-person approach explains consciousness as a metaphysical problem, whereas the third-person approach treats it as a scientific problem. In third-person approach, consciousness is explained as a problem of science like heat, life or nuclear physics. In general, this approach has much success as a study ol' mental processes in cognitive science. In other words, it discusses mind as a cognitive system. The first-person approach describes what it is like to be. who we are, and what it might be like to be something dilTerent from another human, a bat, or a computational system. It is these subjective questions, which pose the real problem of consciousness.

We can divide the first-person problem into three parts[42] such as the problem of sensory qualia. subjective mental content, and the existence of subjective experience. In case of sensory qualia. these are the qualitative aspects of our mental states, of our sensations. From the third–person approach, the nature of qualia cannot be explained. In the case of second problem, the subjective mental content is not entirely different from that of sensory qualia i.e., the experience of content is itself qualitative. for example, when we think about a tree, there is something that takes place in our subjective experience that has something to do with the tree. The third problem is the existence of subjective experience. The problem is why subjective states should exist in the first place. Many philosophers believe in zombies - humans with normal behaviour but without any subjective mental states. These may be logically possible, but it seems implausible that there could be such things in the actual world. However, for every first-person (conscious) mental sate, there is a corresponding third-person (functionally) mental state. For every subjective sensation, there corresponds an objectively characterisable perception.

Consciousness, the subjective experience of qualia and mental content cannot be explained by a third-person account. Neuroscience and cognitive modeling do not explain the qualitative nature of a sensation of red, or even why such a subjective sensation should exist. From the first-person perspective, we have beliefs about our own experiences and attitudes and we have phenomenal consciousness, which is distinguished from other features. Many philosophers

agree that consciousness is a surprising phenomenon. It is a brute fact about us that we have first-person experiences.

1 here is a sense in which each person's consciousness is subjective to that person, a sense in which he is related to his pains, tickles, itches, thoughts and feelings in a way that it is quite unlike that others are related to these qualities. This phenomenon can be described in various ways. It is sometimes described as that feature of consciousness because of which one can say that there is something that it is like or something that it feels like to be in a certain conscious state. That is to say that conscious states have a certain qualitative character, which are sometimes described as `qualia'. This subjective character of experience is not explainable by any functional or causal analysis, which is called by Chalmers the hard problem for consciousness.[4,1]

IV. The Hard Problem

The hard problem of consciousness is the problem of experience. When we think and perceive, we have the first-person access to experience. For example, when we see. we experience visual sensations such as experience *of* colours, dark and light, buildings, etc. In this situation, there is something what it is like to be in them. According to Nagel:

> ...the fact that an organism has conscious experience *al all* means, basically, that there is something it is like to *be* that organism...But fundamentally an organism has conscious mental states if and only if there is something that it is like to *be* that organism—something it is like *for* the organism.[44]

And we can say that a being is conscious when there is something it is like to be that being. In other words, a mental state is conscious when there is something it is like to be in that state. Conscious states like states of perceptual experience mean there is something it is like to see a red patch. Similarly, bodily sensations like feeling pain, emotional experience like feeling a deep regret, mental imagery like visualizing a university etc. are subjective experiences. Each of these states

has a phenomenal property or qualia. Here Chalmers raises what is known as the hard problem about experience:

> ...how it is that these systems are subjects of experience is perplexing...How can we explain why there is something it is like to entertain a mental image, or to experience an emotion?...Why should physical processing give rise to a rich inner life at all? [45]

The hard problem is hard because there is something in experience which cannot be explained by the usual scientific methods. We can explain how a system functions in terms of its internal mechanisms. But we cannot explain what it is to have subjective experiences.

Neurophysiology can explain how the brain functions in terms of its neural activities. Cognitive science in general explains the way information processing takes place in the brain. But none of these can explain how conscious experience is possible. Chalmers writes:

> What makes the hard problem hard and almost unique is that it goes beyond problems about the performance of functions...when we have explained the performance of all the cognitive and behavioural functions in the vicinity of experience—perceptual discrimination, categorization, internal access, verbal report—there may still remain a further unanswered question: *Why is the performance of these junctions accompanied by experience?*[46]

Francis Crick and Christof Koch try to solve this problem by appealing to the neural structure of consciousness. They remark that

> ...we believe that the problem of consciousness can, in the long run, be solved only by explanations at the neural level. Arguments at the cognitive level are undoubtedly important but we doubt whether they will, by themselves, ever be sufficiently compelling to explain consciousness in a convincing manner...our basic idea is that consciousness depends crucially on some form of rather short-term memory and also on some form of serial attentional mechanism.[47]

They formulate two basic assumptions to study the problem of consciousness. The first is there is something in consciousness, which needs a scientific explanation,

and the second is that the conscious experiences (pain and visual awareness) depend on a neural mechanism. They write:

> We think it plausible that consciousness in some sense requires neuronal activity, in which we include not only neurons that fire action potentials but also non-spiking neurons such as amacrine cells.
>
> Our basic hypothesis at the neural level is that it is useful to think of consciousness as being correlated with a special type of activity *ol"* perhaps a subset of neurons in the cortical system. Consciousness can undoubtedly take different forms, depending on which parts of the cortex are involved, but we hypothesize that there is one basic mechanism underlying them all.[48]

They suggest that consciousness may arise from certain oscillations in the cerebral cortex, which become synchronized as neurons fire 40 times per second. They believe that this may explain how different attributes of a single perceived object (e.g., its colour and shape), which are processed in different parts of the brain, are combined into a coherent whole. According to them, certain 35-75 hertz, neural oscillations in the cerebral cortex may be the basis of consciousness, which seem to be correlated with awareness in a number of different modalities such as the visual and olfactory systems.[49] They suggest a mechanism, which may achieve the binding of information contents. Binding is the process, where the information about a single entity separately represented is brought together, when information about the color and shape of a perceived object is integrated from separate visual pathways. They write:

> Our experience of perceptual unity thus suggests that the brain in some way binds together, in a mutually coherent way, all those neurons actively responding to different aspects of a perceived object.[50]

They hypothesize that binding may be achieved by the synchronized oscillations of neuronal groups representing the relevant contents. They also suggest that these oscillations activate the mechanisms of working memory, so that there may be an account of this and perhaps other forms of memory in the distance. These oscillations are the neural correlates of experience. According to them:

> We suggest that one of the functions of consciousness is to present the result of various underlying computational and that this involves an attentional mechanism that temporarily binds the relevant neurons

> together by synchronizing their spikes in 40 Hz oscillations. These oscillations do not themselves encode additional information, except in so far as they join together some of the existing information into a coherent percept. We shall call this form of awareness "working awareness." We further postulate that *objects for which the binding problem has been solved are placed into working memory.*[51]

They try to solve the mysterious nature of consciousness through the visual awareness, which is coming from information. But they accept the view that the neural activities alone account for consciousness. The problem of conscious experience thus remains unsolved as the neural mechanism fails to account for experience it. Experience is the most central and manifested aspect of our mental lives, and definitely it is the key explanandum in the science of the mind. However, there is no question that experience is closely associated with physical processes in systems such as brain. But that does not solve the hard problem of experience. Chalmers therefore argues that the hard problem cannot be solved in physicalistic terms. He suggests that consciousness can involve a distinct kind of fundamental property in addition to the basic physics.[52]

The hard problem is the question of how physical processes in the brain give rise to the subjective experience. This problem involves the inner aspect of thought and perception, the way we feel as the subjects of experience. As scientists we know all there is to know about the physical processes in the brain- its biology, structure and function. This understanding enables us to grasp everything there is to know about the 'easy problems': how the brain discriminates stimuli, integrates information and produces verbal reports. From our knowledge of colour vision, we know the way color names correspond with wavelengths on the light spectrum. Still there is something crucial about colour vision which one does not know. That is, what it is like to experience a colour such as blue. It follows that there are facts about conscious experience that cannot be deduced from physical facts about functioning of the brain.

According to the hard problem, we can explain how functions are performed by the brain and other physical systems. For example, to explain reportability, it is necessary to explain how a system could perform the function of producing

reports on internal states. To explain internal access, we need to explain how a system could process its internal states and use information about those states in organizing later processes. These are all facts about the explanation of functions. But these facts also face the same problem regarding how conscious experiences arises from physical processes. The same problem arises with any theory of consciousness based only on physical processing. Hence, physical theories are best at explaining why systems have a certain physical structure and how they perform various functions. But consciousness is a different sort of entity, as it goes beyond the explanation of structure and function. As already mentioned. Chalmers's arguments are directed against all attempts to explain the phenomenological, experiential and first person side of consciousness in physical terms. They appeal only to properties internal to the conscious being and not to the relational (physical) properties. According to chalmers:

> ...a nonreductive theory of experience will specify basic principles telling us how experience depends on physical features of the world. These psychophysical principles will not interfere with physical laws, as it seems that physical laws already form a closed system…A physical theory gives a theory of physical processes, and a psychophysical theory tells us how those processes give rise to experience."[53]

He discusses the principles of structural coherence between the structure of consciousness and the structure of awareness. It is a central fact about the complex structure of experience. There arc relations of similarity and difference between experiences, and every subject's experience has a corresponding feature in the information-processing structure of awareness. Chalmers opines:

> Awareness is a purely functional notion, but it is nevertheless intimately linked to conscious experience. In familiar cases, wherever we find consciousness, we find awareness. Wherever there is conscious experience, there is some corresponding information in the cognitive system that is available in the control of behaviour, and available for verbal report. Conversely, it seems that whenever information is available for report and for global control, there is a corresponding conscious experience. Thus, there is a direct correspondence between consciousness and awareness/[54]

This principle recovers the structural properties of experience from information-processing properties, but not all properties of experience are structural properties. Through the coherence principle, the facts about neural processing can entail and explain both structure of awareness and experience. The coherence between consciousness and awareness explains— why there is a neural correlate of every conscious experience. This principle also shows that awareness itself is a correlate of conscious experience. If we accept the coherence principle, we have reason to believe that the processes that explain awareness will at the same time be part of the basis of consciousness.[55]

To discuss about the neural processes in the brain, we have two points of view — one is the objective point of view and the other is the subjective viewpoint. From an objective viewpoint, the brain is relatively comprehensible. For example, when we look at something, there is the activity of processing i.e.. photons strike our retina, electrical signals are passed up our optic nerve and between different areas of our brain and eventually we may respond with a smile. But there is also a subjective aspect. For example, when we look at something, we are conscious of it; we have direct experience about the images which is a part of our inner mental life.

According to the reductionist theories, consciousness can be explained by the standard methods of neuroscience and psychology. But as a nonreductionist, Chalmers argues that the tools of neuroscience cannot provide a full account of conscious experience, although they have much to offer.[56] Easy problems are all concerned with how a cognitive or behavioural function is performed. These are questions about how the brain carries out some task, that is, how it discriminates stimuli, integrates information, produces reports and so on. If neurobiology specifies the appropriate neural mechanisms, showing how the functions are performed, then the easy problems will be solved. Whereas the hard problem of consciousness goes beyond the problems about how functions are performed. Even if every behavioral and cognitive function related to consciousness were explained, there would still remain the question—why the performance of these functions is accompanied by conscious experience? So, the hard problem is becoming hard still."[57]

V. Is there a way out?

The hard problem of consciousness cannot be solved in physicalistic term. But the question is— what makes the hard problem hard, and can we find out a way to solve this problem? There are multiple answers to this question. According to some philosophers, a solution to the hard problem would involve an account of the relation between physical processes and consciousness. By applying to natural principles, they explain how and why it is that physical processes are associated with states of experience. A reductive explanation of consciousness will explain this situation on the basis of physical principles. Such an explanation arises not make any appeal to consciousness. A materialist (or physicalist) solution will be a solution in which consciousness itself is seen as a physical process. A nonmaterialist or nonphysicalist solution is the solution, which treats consciousness as nonphysical (even if closely associated with physical processes). A nonreductive solution will be one in which consciousness is admitted as a basic constituent of the world.

According to the non-physicalists, consciousness is entirely a different sort of problem, because it goes beyond the explanation of structure and function of a system. C.J.S. Clarke points out that:

> 1 acknowledge that the existence of mind is the primary aspect of our experience, then it seems unnatural to derive mind from physics, because this would be try to explain something obvious and immediate (mind) from something (physics) that is an indirect construction of mind. So for me it seems a more fruitful method not to derive mind from physics but to reconcile the experience of mind with the world description of physics."[8]

For example, in physics, space, time, mass and charge are regarded as fundamental features of the world, as they are not reducible to anything simpler. It is generally believed that physics provides a complete catalogue of the universe's fundamental features and laws or theories of everything from which all there is to know about the universe. However, the problem of consciousness is that the existence of consciousness does not seem to be derivable from the physical laws.

Some physicists argue that it may be eventually possible to accept the objective correlates of consciousness (the neural correlates), but of course, to do this is not to explain consciousness itself. If the existence of consciousness cannot be derived from physical laws, a theory of physics is not a true theory of everything. Therefore, a final theory must contain an additional fundamental component.

Chalmers has suggested that conscious experience be considered as a fundamental feature, irreducible to anything more basic. In the 19th century, it turned out that electromagnetic phenomena could not be explained in terms of previously known principles.[59] Therefore, the scientists introduced electromagnetic charge as a new fundamental entity and studied the associated fundamental laws. Similar reasoning should apply to consciousness. Where there is a fundamental property, there are fundamental laws. In this case, the laws must be relating experience to elements of the physical world. These laws will almost certainly not interfere with those of the physical world; it seems that the latter form a closed system in their own right.[60] Rather the laws will serve as a bridge, specifying how experience depends on underlying physical processes. This bridge will cross the explanatory gap. Thus, a complete theory will have two components- physical laws and psychophysical laws. Physical laws tell us about the behaviour of physical systems from the infinitesimal to the cosmological, whereas psychophysical laws will tell us how some of those systems are associated with conscious experience. These two components will constitute a true theory of everything.

In case of high-level bridging laws, it connects physical processes to experiences at an everyday level. The basic point is that, when we are conscious of something, we are generally able to act on it and speak about it. When some information is directly available for action and speech, it is generally found to be conscious. Thus, consciousness correlates well with what we may call "awareness". Awareness is the process by which information in the brain is made available to motor processes such as speech and bodily action. But according to Chalmers, awareness is objective and physical, whereas consciousness is not.[61] According to the Psychophysical law, where there is awareness, there is consciousness and vice versa.

Now the question is— if a system is built and organized appropriately, can it produce the same kind of conscious experience like human being. Let us take Searle's example of a silicon- based system in which the chips are organized and which functions in the same way as the neurons in our brain. That is. each chip in the silicon system docs exactly what its natural analogue does and is interconnected to surrounding elements in precisely the same way. Thus, the behaviour exhibited by the artificial system will be the same as human beings. But the question is: Will it be conscious in the same way that we are? Because chips and neurons have the same function. they are interchangeable with the proper interlacing. Therefore, chips can replace neurons, producing a range of cases in which there is a similarity of function between the two systems. But the conscious experience cannot be the same in both the cases. The artificial system will have a different conscious experience from the original. For example, when the patient had previously seen red, now he/she may experience purple. When the experience changes from red to purple, or vice versa, his/her experiences have two different conscious states (red and purple) known as qualia. Thus, it is clear that conscious experience of the natural human organism cannot be reduced in an artificial system.

It has been argued by some philosophers that neuroscience may be able to reveal the nature of the neural correlates of consciousness- the brain processes most directly associated with conscious experience. It may even give a detailed correspondence between specific processes in the brain and related components of experience. But until we know why these processes give rise to conscious experience at all, we cannot explain why the hard problem arises. It cannot be denied that, when we have colour experience there is a neural correlate corresponding it, but the relationship between the two remains mysterious. These neural correlates arc supposed to be the key to a solution to the hard problem. Francis Crick and Christof Koch write:

> We believe that at the moment the best approach to the problem of explaining consciousness is to concentrate on finding what is known as the neural correlates of consciousness the processes in the brain that are most directly responsible for consciousness. By locating the

neurons in the cerebral cortex that correlate best with consciousness, and figuring out how they link to neurons elsewhere in the brain, we may come across key insights into what David J. Chalmers call the hard problem: a full accounting of the manner in which subjective experience arises from these cerebral processes."[2]

Crick and Koch have broken down the hard problem into several questions: Why do we experience anything at all? What leads to a particular conscious experience? Why are some aspects of subjective experience impossible to convey to other people?"[3] For them, the neural correlates explain consciousness and so the hard problem disappears."[4]

Chalmers proposes that 'experience' is a fundamental new feature of the world, related to the ability of an organism to process information. But which type of neural information produces consciousness'? Moreover, what makes a certain type of information correspond to the blueness of blue, rather than the greenness of green? Such problems seem as difficult in the study of consciousness. Hence, the hard problem persists as there is no scientific method by which it can be solved.

According to J. Shear:

> ...the 'hard problem" of explaining consciousness would appear to be an empirical one involving, among other things, understanding the causal and ontological relationships between two very different realms, the mental and the physical. Thus, given the historical intractability of the problem, we might except that extended empirical examination of both of the very different, but obviously highly correlated, realms involved would be the most likely place to look for clues as to how the problem might be resolved.[65]

The phenomenal experience must be a fundamental feature of nature not to be explained by the physical processes. It is the real hard problem of consciousness, because it has the qualitative aspect or qualia, which cannot.be explained. If consciousness can exist independently of qualia, it may well be possible to account for its existence without the help of qualia.

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CHAPTER 5

CONSCIOUSNESS, SUBJECTIVITY AND QUALIA

What is the reality of consciousness? There is a debate among philosophers as to whether consciousness is a physical process or a mental process. As we have seen the materialist theory of consciousness, computationalism and functionalism have failed to capture that which is the essentially subjective or the qualitative aspects of the mental states. The subjective experience have the phenomenal quality, so there is 'something it is like" for one to have these experiences.

In this chapter, we will discuss subjectivity and qualia which are the most essential features of consciousness. The subjectivity of consciousness is an essential feature of mental states, which can prove that the ontology of mental states is an irreducible fact of first person ontology. We will show that qualia are the most important part of consciousness. In this connection, we will discuss the arguments against physicalism advanced by Thomas Nagel and Frank Jackson. The qualities of conscious experience are the qualia or raw feels. This subjective experience is a part of the phenomenal feature of consciousness.

I. Subjectivity and the "I"

Consciousness is a specific feature of living organisms. Human beings as conscious beings have this specific feature, i.e., have conscious experiences. Thus, conscious experiences are the basic part of the conscious human life. Each human being has a uniqueness of seeing or experiencing things, and it is important to understand the very nature of the subjective experiences. Our mental states have a phenomenal side, a subjective side.

Consciousness seems to involve something which is essentially subjective. In case of a conscious mind, there is a subjective point of view, whieh is accessible only to the conscious being itself. Consciousness is a phenomenon, which cannot be measured, observed or experienced in public, because it is a personal matter. It can be known only from a first-person perspective, but not

from the third-person, objective or scientific perspective. Thomas Nagel shows that subjectivity is the fundamental cornerstone of consciousness. According to him, consciousness is what makes the mind-body problem intractable as 'subjectivity" is its most troublesome feature. Self is the subjectivity, which encompasses our feelings, thinking, and perception. It is the first- person existence. The qualitative character of experience is what it is like for it's subject to have the experience. In his article, "What it is like to be a bat?", Nagel presents the notion of subjectivity, which proves the idea of an irreducibly subjective character of experience. He writes:

> Conscious experience is a widespread phenomenon. It occurs at many levels of animal life, though we cannot be sure of its presence in the simpler organisms, and it is very difficult to say in general what provides evidence of it... no matter how the form may vary, the fact that an organism has conscious experience *at all* means, basically, that there is something it is like to *be* that organism…But fundamentally an organism has conscious mental states if and only if there is something it is like to *he* that organism—something it is like *for* the organism.[1]

That is, we can know the physical facts about bat but we do not know what it is to be like a bat. According to Nagel. we cannot comprehend bat's experience, that is, we cannot adopt its point of view. The subjective experiences of the bat are beyond our comprehension. The objective facts regarding the organism do not and cannot explain the subjective character of the bat's experiences. Scientific knowledge cannot give the answer to the question "what it is like to be a bat". Thus, Nagel sees the subjectivity of consciousness as posing a special challenge to physicalism. He argues that physical theories cannot explain one's phenomenal consciousness. For this reason, subjectivity is so hard to capture. According to him, subjectivity is:

> …the subjective character of experience. It is not captured by any of the familiar, recently devised reductive analyses of the mental, for all of them arc logically compatible with its absence. It is not analyzable in terms of any explanatory system of functional states, or intentional states, since they could be ascribed to robots or automata that behaved like people though they experienced nothing.[2]

What is essential to experience, only its subject can have and it is not something that can be brought under objective concepts, which can capture only the subjective aspects of experience. It cannot be brought under the concepts of physical science, since these are only objective concepts. The conscious experiences vary from person to person. There is a 'subjective feeling" attached to one's conscious experience. We not only see a variety of things in the world, but we tend to see them from our subjective point of view. The subjective feelings are the outcome of our conscious experience. It is fundamental and highly specific that each human being has a unique way of seeing, feeling, or experiencing things.

According to Nagel, objective facts, which arc the concern of science, are the observer independent features of things, and the way things are in and of themselves. However, conscious experience is the representation of subjectivity. Facts about conscious experience, therefore, do not exist independently of a particular subject's point of view. Objective phenomena have a reality independent of appearances, but subjective phenomena are just phenomenological appearances. Nagel claims that science stands little chance of providing an adequate third person account of consciousness, as there is no objective nature to phenomenal experience. Phenomenal experience cannot be observed from multiple points of view. As Nagel puts it:

> The reason is that every subjective phenomenon is essentially connected with a single point of view, and it seems inevitable that an objective, physical theory will abandon that point of view. [3]

Hence, from the subjective point of view, we know what it is to be like us, but we do not know what it is to be like a bat. This is because, we do not know what it is like to have sonar experiences. In order to know about sonar experiences, we should have sonar experiences. Thus, sonar experiences imply a subjective perspective and that we must occupy that particular point of view in order to know the bat's sonar experiences. Nagel writes:

> ...we may ascribe general *types* of experience on the basis of the animal's structure and behaviour. Thus we describe bat sonar as a form of three-dimensional forward perception; we believe that bats feel some versions of pain, fear, hunger, lust, and that they have other,

more familiar types of perception besides sonar. But. we believe that these experiences also have in each case a specific subjective character. which it is beyond our ability to conceive. And if there is conscious life elsewhere in the universe. it is likely that some of it will not describable even in the most general experiential terms available to us. [4]

In contrast to subjective experience. knowing that the square root of 144 is 12 or table salt is a compound of sodium and chlorine does not require any kind of experience. This is not to deny that it may require some experience. It could be that any one who has this knowledge must also have experience. However. what makes mathematical and scientific knowledge objective is not the particular kind of experience accompanying that knowledge. However. to know what it is like to see red entails having a particular kind of experience. which is the experience of seeing red. As Nagel puts it:

> In the case of experience. on the other hand. the connection with a particular point of view seems much closer. It is difficult to understand what could be meant by the *objective* character of an experience. apart from the particular point of view from which its subject apprehends it.[5]

This subjective character of experience cannot be captured by any functional or causal analysis. Therefore, we do not know how physical ism can explain consciousness. Physicalism rules out the subjective point of view and so it fails to explain human experiences. According to McGinn, consciousness is a natural process of the brain. However, we cannot form concepts of conscious properties unless we ourselves instantiate those properties. Because the man born blind cannot understand the concept of a visual experience of red like we cannot conceive of the echolocatory experiences of bats. We know that there are properties of the brain that are necessarily closed to perception of the brain. Consciousness itself cannot be explained on the basis of what we observe about the brain and its physical effects. While rejecting physicalism, McGinn emphasizes that:

> Conscious states are simply not, *qua* conscious states, potential objects of perception: they depend upon the brain but they cannot be observed

by directing the senses onto the brain. You cannot see a brain state *as* a conscious state/[1]

That is. consciousness itself cannot be established simply on the basis of what we observe about the brain and its physical effects. We cannot explain which property of the brain accounts for consciousness. Distinct cognitive properties, namely perception and introspection, necessarily mediate our relationships with the brain and with consciousness. We cannot understand how the subjective aspects of experience depend upon the brain that is really the problem.[7]

According to William Lycan. in case of subjectivity, experiences are representations. For example, my visual experience of my blue shirt is a mental representation of the shirt as being blue. When I introspect my experience. I form a second-order representation of the first-order representation *of* the shirt. Other people have syntactically similar second-order representations. But each individual can introspect only his own experiences. For Lycan, this is the ultimate explanation of subjectivity. He acknowledges Nagel's view and replies that, "...seeing someone's brain in a state of sensing-blazing-red is nothing at all like sensing blazing red oneself".[8] Similarly, in case of the bat's sonar sensation S:

> We do not have the sonar sensation S; we cannot ourselves feel S.
>
> We do not know what it is like to have S (we do not have cognitive access to S) in the way the bat does.[9]

For Lycon. these facts are obviously true and accepted even by the materialists. When we observe the bat at that time, we observe only some physical or functional state, but thereby we do not have that conscious state ourselves; we do not have the same perspective with respect to it. However, a materialist account of the mental should not claim otherwise. As he puts it:

> …the felt incongruity is just what anyone, materialist or antimaterialist alike, should expect. Therefore, the incongruity affords no objection whatever to materialism, and to take it as impugning or even embarrassing materialism is simply fallacious.[10]

From Nagel's point of view, the individual consciousness can be understood or reported only from the first-person point of view and not from the third-person objective point of view. An objective representation can be described in an

objective way. This representation or concept is a function from the world to the individuals. As Lycon says:

> ...any such function is objectively describable, or so it would seem... there is nothing intrinsically perspectival about functions from worlds to individuals: any one could be described by anyone who had the right sort of mental apparatus or brain wiring."

However, his view is that the functional state of the bat having sonar sensation S is different from the bat's subjective consciousness. A functionalist takes it as an objective fact and tries to describe it as functions of mind. However, an experience is held to be a conscious experience just in case there is something, which it is like for the subject of the experience to have it. Thus, we have to accept the qualitative feel of experience. This qualitative feel, unique to every distinguishable experience, is supposed to be what it is like for the subject of the experience to have the experience.

J. Searle argues that consciousness is subjective. Subjectivity is the most important feature of conscious mental states and processes, which is not possessed by other natural phenomena. Judgements are taken as 'subjective' when their truth or falsity is not a matter of fact or 'objective' criteria, but depends on certain attitudes and feelings of the maker of the judgement. For Searle, the term 'subjective' is an ontological category. Take for example, the statement 'Someone is feeling pain in his/her leg". In this case, the statement is completely objective, because it is true by the existence of a fact and is not dependent on the attitude or opinion of the observer. But the actual pain itself has a subjective mode of existence, and in that sense, consciousness is subjective. The term "pain" is subjective as it is not equally accessible to any observer, because it is a first-person experience. Therefore, for Searle, every conscious state is always someone's conscious state.[12] Someone has a special relation to his/her own conscious states, which is not related with other people's conscious states. Searle says:

> Subjectivity has the further consequence that all of my conscious forms of intentionality that give me information about the world independent of myself are always from a special point of view. The world itself has

no point of view, but my access to the world through my conscious states is always perspectival, always from my point of view.'[1]

According to Searle, a theory of consciousness needs to explain how a set of neurobiological processes can cause a system to be in a subjective state of sentience or awareness. We accept the view that subjectivity is a ground floor, irreducible phenomenon of nature science, being objective, cannot explain how this is possible. According to Searle, `consciousness' stands these subjective states of sentience or awareness that we possess during the period we consciousness, that is, during the period we are not in coma or are not unconscious.

Consciousness is, according to Searle, essentially a subjective, qualitative phenomenon. It is not a mechanical state or a certain kind of set of dispositions to behavior or a computer program as many philosophers believe. There are two most common mistakes about consciousness such as that it can be analysed behavioristically or computationally. The Turing test shows that conscious mental states are mechanical or computational states. It gives us the view that for a system to be conscious, it is both necessary and sufficient that it has the right computer program or set of programs with the right inputs and outputs. There is no logical connection between the inner, subjective, qualitative mental states and the external, publicly observable output. Our mental states cannot be fully represented in a machine or in a computer. Because somehow we have subjective mental phenomena which require a first- person perspective for understanding properly.

Searle describes 'subjectivity' as a rock-bottom element of the world. The world that we know to exist consists of particles, which are organized into systems including the biological systems. Some of these biological systems are conscious and that consciousness is essentially subjective. The subjective consciousness occupies a special ontological position. It is so fundamental that it is not an object of perception. As Searle puts it:

But when we visualize the world with this inner eye, we can't see consciousness. Indeed, it is the very subjectivity of consciousness that makes it invisible in the crucial way. If we try to draw a picture of

someone else's consciousness, we just end up drawing the other person (perhaps with a balloon growing out of his or her head). If we try to draw our own consciousness, we end up drawing whatever it is that we are conscious of.[14]

That is, when we try to observe the consciousness of other persons, we observe their conscious behaviour, structure and the casual relation between these behaviours and not the subjectivity of the person. There is something called subject of experience, which is an inner state and which eludes our observation. Observation is impossible in case of subjectivity, as there is no distinction between observation and the thing observed, between perception and the object perceived.[15] Therefore, though we can easily observe another person, we cannot observe his/her subjectivity. Similarly, in our own case, we cannot observe our own subjectivity though we can be intuitively aware of it. It is our inner self, which is ontologically identical with myself. All observation presupposes an observer who occupies a subjective point of view. The observer observes from a subjective point of view, and has a subjective feel about it.[16] Thus, Phenomenal consciousness has distinctive subjective feels.

The subjective feeling or experience is a mental state. What we feel is not such that each part of our body feels it. It is "I" that feels such emotions. The 'I' is the central problem of consciousness. Neurosciences try to explain how conscious experience arises from the electrochemical processes of the brain. Even if they can prove conscious states to be caused by the neural stales the brain, they cannot show how and why the conscious states belong to an T. The 'I' is not a part of the brain. It is something extra to the brain states. Consciousness therefore is not identical with the brain stales which cause it. The T that has consciousness is not identical with the brain states either. The T is distinct from the body.

One's desires, beliefs, and intentions are formed according to one's interaction with the world. There is a qualitative difference between the mental states oi' one person in comparison with others. This qualitative feature of one's mental states is thereibre treated as the subjectivity of consciousness. Qualia are a part of subjective experience realized in the brain. Conscious experience involves neural activity and information processing. Thus, consciousness is defined in

terms of the qualitative feel of experience. This qualitative feel is supposed to be for the subject of the experience.

II. Nature of Qualia and Phenomenal Consciousness

The term 'qualia' means the qualitative character of experience. Every experience has a distinctive qualitative character. The subjective or qualitative feel of a conscious experience is characterized as something, which the organisms necessarily have in order to be conscious. Thus, qualia are the qualitative subjective experiences of mental stales and the properties of conscious experience.

Are these subjective experiences or qualia real? It is a controversial question among philosophers whether qualia are definable in functional terms and whether qualia are the physiological states of the brain. The most important argument is that qualia are the functional states of the brain and. thus, are real only as the physical states of the brain. Opposed to this is the argument that qualia are the qualitative feel oi' the conscious states and so are subjective in character. Subjective experienees. thus, have qualia inherent in them. In other words, an experience is a conscious experience, if and only if there is some raw feel in it which is subjective.

Qualia are experiential properties of sensations, feelings, perceptions or the way it feels to have a pain or the ways it feels to see. According to Ned Block, the qualia:

> ...include the ways it feels to see, hear and smell, the way it feels to have a pain; more generally, what it is like to have mental states. Qualia are experiential properties of sensations, feelings, perceptions and... thoughts and desires as well.[17]

The first-person experiences such as pain, colour sensation, the sensation of touch and smell, etc. are the qualitative experiences of menial slates. These mental states are the common stuff of our mind. For example, in having the smell of flowers or the taste of ice cream, we have subjective experience of these things, but we cannot describe them because these experiences have a distinctive

phenomenological character. Our color experiences are such that there is something like to have them with a phenomenological image. A quale is thus a mental state that has the property of being a phenomenal experience.

Qualia constitute the essence of the conscious states. For example, the quale 'pain' is the feeling of pain rather than a mere bodily sensation. Thus, the qualia are the raw feels associated with the conscious stales. Flanagan writes:

> Specifying the types of conscious experience is something we cannot do without if we are to generate and test hypotheses about the links between the phenomenological, the psychological, the physiological, and the neural.[18]

The qualitative experiences like experiences of color, smell, taste, pain. etc. can be explained in neuroscientific terms. These experiences play a causal role in the domain of mental states. The experience of pain, for example, has the belief that he is in pain and he acquires a desire to take steps to recuperate. When he is pain, he is in a state that definitely has a range of causal or dispositional properties. However, in addition to their functional role, the qualitative experience have a characteristic phenomenal feel called qualia.

Searle[19] argues that every conscious state has a certain qualitative feel to it. For example, the experience of tasting beer is very different from hearing some music and from smelling a rose or watching movie, both of these have a different qualitative character. Hence, there are the different qualitative features of conscious experience. Thus, qualia constitute the essential properties of conscious experience. That is why, one cannot derive pleasure of drinking beer by listening to music, or the pleasure of witnessing sunset by smelling a rose. That is a logical, not an empirical truth, and Chalmers characterizes it as " the subjective quality of experience".[20] According to him:

> …a mental state is conscious if there is something it is like to be in that mental state. To put it another way, we can say that a mental state is conscious if it has a *qualitative feel*—an associated quality of experience. These qualitative feels are also known as phenomenal qualities, or qualia for short. The problem of explaining these phenomenal qualities is just the problem of explaining consciousness.[21]

According to Chalmers, the phenomenally conscious states are not functional states, but can be realized through our experience like the experience of red. The phenomenal consciousness does not supervene metaphysically on lower level facts. That is to say. even though two functional states are isomorphic. they differ in phenomenal consciousness. An experience or other menial entity is 'phenomenally conscious' only when there is something to be like to be in that state. For example, perceptual experiences like tasting, seeing, feeling, etc. are cases of such experiences. The qualities available to us in conscious experience are the qualities which represent objects in the world. Thus, qualia are conceived as the qualitative characteristics of mental slates which include perception, sensation, affection, desire, thought and belief. For every 'conscious experience' or "conscious mental state', there is something, which is like for the subject to have it or to be in it. They have a phenomenal feel or raw feel. Hence, problem of phenomenal consciousness is the problem of explaining how subjective feel is instantiated in the brain.[22] According to Peter Carruthers:

> Phenomenal consciousness is a form of state-consciousness: it is a property, which some, but not other, menial stales possess. More specifically, it is a property which mental states have when it is *like something* to undergo them…phenomenally conscious stales have distinctive subjective feels: and some would say: they have qualia.[23]

Moreover, phenomenal conscious properties are experiential properties. For example, we have phenomenally conscious states when we see. hear, smell, taste and have pains. These properties are the experiential properties of sensations, feelings and perceptions, thoughts etc. Thus, the phenomenal feature of the mind is characterized by what it is like for a subject to have that feature. As Robert Van Gulick puts it:

> Phenomenal experience is not merely a succession of qualitatively distinguished sensory ideas, but rather the organized cognitive experience of a world of objects and of ourselves as subjects within that world.[24]

However, according to the functionalists, minds are complex arrangements of functional states, states that bear the right kinds of causal relations to one

another and to inputs and outputs. A functionalist may therefore assert that experiences themselves lack qualities of their own. qualities identifiable independently of the qualities of objects experienced. Or. although an experience may have qualities. these are not qualities we are in any sense aware of in undergoing the experience. If what we experiences are realized in our brain. then the qualities of our experience will be neurological qualities.

There is a debate about whether such qualities really inhere in objects or whether they are simply subjective effects in the mind of the observer. According to the reductionists. qualia can be explained in terms of the neurophysiological events in the brain and its interactions with the environment. For epiphenomenal ism, qualia are causally dependent or 'supervenient' on the bruin events, but cannot be directly identified with such events. An epiphenomenalistic account of mind is that mental states have no causal powers of their own and that they are causally derived from the brain processes. However. for non-reductionism qualia have physical causes but are real nonetheless. For dualism, qualia are independent of physics, and autonomous in this existence.

The knowledge argument aims to establish that conscious experience involves non-physical properties. It depends on the idea that someone. who has complete physical knowledge about another conscious being, may yet lack knowledge about how it feels to have the experiences of that being. According to Van Gulick, ""Its basic underlying assumption is that there is some knowledge about experience that can be acquired only by undergoing the relevant experience one-self."[25] For example, someone has knowledge about what is the character of phenomenal red colour only by having a red colour experience. Physical knowledge is not sufficient to know the experience of red colour.

Frank Jackson argues that before release from the black-and-white room Mary knew only the physical information. After her release, she learned something about the world and our visual experience of it. According to him:

> She knows all the physical facts about our environment, in a wide sense of 'physical' which includes everything in completed physics, chemistry, and neurophysiology. and all there is to know about the

causal and relational facts consequent upon all this, including of course functional roles.[2,1]

However. Mary seems to make some new discoveries when has knowledge of the world by having visual experience of it. She finds out things she did not know before. There is something about her experience, a property of it. which is subjective. There are phenomenal qualities associated with colour which Mary comes to discover upon her release from the black-and-white room. Before she left her room, she only knew the objective, physical basis of those subjective qualities, their causes and effects, and various relations of similarity and difference. She had no knowledge of the subjective qualities in themselves.

Some philosophers raise the question: Does Mary get any knowledge when she first experiences red? What sort of knowledge she gets and does it include new knowledge of facts, propositions or information? The opponents of qualia argue that in knowing what it is to be like Mary does not get any new knowledge, except the ability to recognize the physical facts which she already has. They also argue that Mary in her room lacks certain phenomenal concepts, certain ways of thinking about or mentally representing colour experiences and colours. Once she leaves the room, she acquires these new modes of thought as she experiences the various colours. Even so. the qualities the new concepts pick out are ones she knew in a different way in her room, for they are physical or functional qualities like all others. Against the physicalists, Jackson argues that in fact, Mary would not know about colours and she could not imagine what it is like to sense red before her release. After release, she has new experience, the colour experiences she has never had before. However, some philosophers may still argue that Mary gains new knowledge only in the sense that she comes to know in a new way fact and propositions, which she already knew. Before she knew only indirectly by inference, and now she knows directly by introspection. Thus, the knowledge argument of Jackson is as follows:

(i) Mary (before her release) knows everything physical there is to know about other people.

(ii) Mary (before her release) docs not know everything there is to know about other people (because she learns something about them on her release).

(iii) Therefore,

There are truths about other people (and herself), which escape the physicalist theory.[27]

What she knows beforehand is only physical knowledge and after release she be able to get extra knowledge about what it is to experience phenomena in the first-person. So it is reasonable to say that Mary comes lo know some new things upon her release in addition to her knowledge of the particular physical facts about the real-world. In this case, some philosophers insist that the difference between the old and the new concepts is such that there must be a difference between the properties these concepts stand for in the world. Some of these properties Mary knew in her cell; others she understood only upon her release. Mary has made a real discovery that she must come to associate with the new qualities the experience of red which she did not associate with it in her room.

The knowledge argument has been criricised by Paul Churchland in order to show that qualia are not different from the brain states. 1 le presents the argument as follows:

(i) Mary knows everything there is to know about brain states and their properties.

(ii) It is not the case that Mary knows everything there is to know about sensations and

their properties.

(iii) Therefore, by Libniz's law,

Sensations and their properties≠ brain states and their properties."

He shows that there is a distinction between the knowledge involved in the first premise and the knowledge involved in second premise. Hence there is ambiguity about the use word 'knowledge'. [29] To this, Jackson's reply is that Mary does not 'know' about certain qualia which are associated with brain states and their properties. She gains the 'knowledge' about how phenomenal red appears only after her release. Churchland's another objection is that the knowledge argument claims that "Mary could not even imagine what the relevant experience would be like, despite her exhaustive neuroscientific knowledge, and hence must still be missing certain crucial information."[30] But, according to him, there is nothing other than the neurological facts which Mary could know. Jackson's knowledge

argument refutes this charge by arguing that whatever information Mary gained by her own efforts after leaving the room, is not physical information. Now she knows what it is like to see red. which she did not know earlier. There are two points here, one is we have certain physico-functional descriptions of certain states which are related to the psychological subjects. On the other hand, we have experience of these states from one's first hand experience. Moreover, the property of the conscious states having qualitative character, which is given in the first-person point of view, is distinct from the property of a certain functional states from the third-person point of view. The physicalists always try to prove that the qualitative character is a physical or functional property. Nevertheless, having a certain qualitative character is irreducible to a state's physico-functional properties. Thus, there is an explanatory gap between these two cases, the psysico-funclional property and the qualitative character of the experience.

According to Dennett, there are no such things as qualia or the qualitative subjective experiences. He does not accept the reality of the qualia. because he believes that the qualia is the private experience of how things look like, and there is nothing in the mind which can correspond to these qualitative features of the mental states. Dennett writes:

> Qualia is an unfamiliar term for something that could not be more familiar to each of us: the ways things seem to us... Look at a glass of milk at sunset; the way it looks to you—the particular, personal, subjective visual quality of the glass of milk is the quale of your visual experience at the moment. The way the milk tastes to you then is another, gustatory quale, and how it sounds to you as you swallow is an auditory quale. These various "properties of conscious experience" are prime examples of qualia.[31]

For him qualia are supposed to be properties of a subject's mental states that are by definition ineffable, intrinsic, private and immediately apprehensible in consciousness. But such properties have absolutely no use in our understanding of consciousness. They are as good as non-existence. As he puts it:

> ...1 do not deny the reality of conscious experience; 1 grant that conscious experience has properties. I grant moreover that each person's states of consciousness have properties in virtue of which

> those states have the experiential content that they do... Qualia are supposed to be *special* properties, in some hard-to-define way. My claim—which can only conic into locus as we proceed—is that conscious experience has *no* properties that are special in *any* of the ways qualia have been supposed to be special.[32]

The qualitative experiences, according to him. are the functional states of the brain. These arc not different from what happens in the brain when the brain is stimulating by the external environment. Thus, Dennett concludes that qualia do not exist.

Dennett's third-person perspective relates qualia with the neurophysiological functions of the brain. To say that our subjective experience of color, beauty, etc.. embody quale is extrinsic rather than intrinsic. The brain states explain what sensations we have when we have first-person experience. Whether qualia are private sense experiences can be publicly judged by attaching a perfect neuro-scientific machine into human head. In addition, that will certainly provide the causal explanation of the visual experience, which arc called qualia. Thus, this functionalist approach of Dennett proves that qualia are non-existence.[33] It is because the mechanism is sufficient to explain how qualitative experiences occur according to inverted qualia.

If qualia arc defined broadly as the properties characterizing what it is like to have conscious experiences, then their existence is hard to deny. Qualitative features are only the first-person conscious experiences or the subjective attitudes of experiencing things. Therefore, qualia belong to the first person point of view and the first person ontology. As R.C. Pradhan point out, "the mental life of man cannot be fully represented in a mechanistic system and that there arc subjective mental states which need a first-person perspective for their proper understanding."[34]

III. Inverted Qualia and Other Issues

Our conscious mental states have distinctive qualitative features. For example, a man has a visual experience of red colour, which differs qualitatively from the kind of experience he has when he looks at a green thing. Here his experience of red and green things involves different colour qualia. But let us invert his colour experience now he sees something, different from what he used to see earlier. According to the inverted spectrum, or inverted qualia[10] argument if our functional organizations were realized in a different physical substrate, a system may still have experience, but it would have a different kind of experience. A person who sees something as red today and may see yellow tomorrow. Here the thing remains constant, but his color experience can vary from red to yellow. In this case, the person's color experience is inverted in the sense that he sees something different from what he used to see earlier. He only describes his previous experience of red as that of yellow now.

We cannot deny the logical possibility of our qualia being inverted in the case of oneself and of others. A person's colour experience can vary from seeing red to green. His experience is inverted in the sense that he sees something different from what he had seen earlier. Qualia inversion would not possible if the conscious states would have been functional states of the brain. In case of consciousness, qualia–inversion is possible because qualia are the properties of the mental states, which cannot be ascribed to the physical and machine states. The machine functionalist's view about consciousness that it must be rejected because conscious states are not physical states, and because conscious states have qualia.

According to Flanagan, inverted qualia are a problem primarily because they are alleged to be undetectable.[36] But the very possibility of inverted qualia challenges computational functionalism, because the computational states cannot have any qualia. For example, two people with red-green inversion have different inner lives. Such persons may be input-output equivalent, but they are not mentally equivalent. It is because, even if the two systems are mechanically equivalent, they do not have the same mental properties. Thus, inverted qualia are an epistemic problem, even if they are not metaphysically problematic.

According to the functionalists, states of mind are functional states. There can be a complete explanation of qualia without any reference to consciousness or conscious thought experiences. Functionalism is able to explain the qualia in terms of functional states of the brain but not the inner or qualitative nature of our mental states. The problem for functionalism is- even if my spectrum is inverted related with yours, we remain functionally isomorphic with each other. My visual sensation is functionally identical with your visual sensation. Therefore, they are the same type of state, and it does not make sense to suppose that my sensation is 'really' a sensation-of-grecn. If it meets the functional conditions for being a sensation-of-red, then by definition it is a sensation-of-red. According to functionalism, a spectrum inversion of the object described is ruled out by definition.

According to Shoemaker, in the case of inverted spectrum, "there should be a systematic difference between the character of someone's colour experience at a certain time and the character of that same person's colour experience at another time."[37] Both the intrasubjective and intersubjective qualia-inversions are possible. For him. the qualitative similarity and difference is well defined only for the intrasubjective case.[38] It is conceivable that two people have similar functioning visual systems, but only the things that look red to one person look green to the others. In this spectrum inversion, the way things look is possible but that cannot be given a functional description. The way things look to a person is an aspect of that person's mental life that cannot be explicated in purely functional terms. If somebody finds yellow things more similar to orange things and less similar to blue things other person finds just the opposite. For Shoemaker, in this intersubjective inversion case, the colour 'quality spaces' of the two people should have the same structure that requires the same conditions they make the same judgments of relative colour similarity about the same visual objects.[39] However, if one claims to have undergone spectrum inversion, then it is difficult to know about the change in his colour experience and his memory of how things appeared to him in the past. Therefore, there is no answer to the question -- how is intersubjective inversion possible? We cannot comprehend the inverted experience of others. According to Shoemaker, the possibility of spectrum

inversion leads to skepticism about our ability to acquire knowledge about the qualitative character of experience of other persons. He writes:

> ...the behavioural evidence that establishes intentional similarities and differences between experiences of different persons is not by itself sufficient to establish qualitative similarities and differences between such experiences.[40]

In the inverted spectrum case, we have two persons whose experiences are functionally and intentionally same but qualitatively inverted. There are two kinds of content of experience, one is intentional or representational content and the other is qualitative or sensational content. If my spectrum is inverted with respect to John's, then in the qualitative sense red things look the same to me as green looks to John. According to Ned Block:

> ...if an inverted spectrum is possible, then experiential contents that can be expressed in public language (for example, looking red) are not qualitative contents, but rather intentional contents."

For him " the intentional content of experience is functional. An experience has the intentional content of looking red if it functions in the right way—if it is caused by red things in the right circumstance and used in thought about red things and action with respect to red things rightly."[42] The functionalists argue that in case of interpersonal spectrum inversion, it is most implausible to suppose that the subjects concerned would really be functionally equivalent in respect of their colour experiences. That means, there are causal relations between our colour experiences and our emotional responses. There is no reason to think that the different physiological realizations of the experience of red things involve any experiential difference. For example, the mental state like the experience of red has alternative physiological realizations, and this is held to be just a case of alternative realizations of the very same experience. Thus, if qualia inversion is possible, functionalism is false.

Ned Block discusses a case of two persons whose experiences are qualitatively the same but intentionally and functionally inverted in his Inverted Earth case. Inverted Earth is just like earth, except that the colors around us change. When one uses inverted spectrum spectacles, appearances change: grass

becomes red, sky becomes yellow, etc. In addition, on this Inverted Earth the color vocabulary is also inverted - they call their yellow sky "blue", their bright red grass "green", and so forth. Suppose mad scientists make John unconscious, insert color-inverting lenses in his eyes, change his body pigment so that it will look normal to him upon awakening, and then move him to Inverted Earth. When he wakes on Inverted Earth, he notices no difference. As Block says:

> What it's like for you to interact with the world and with other people does not change at all…So once 50 years have passed [during which time the "causal groundings" - the reference - of your color terms shift to those standard on inverted earth], you and your earlier state at home would exemplify...a case of functional and intentional inversion together with same qualitative contents…the converse of the inverted spectrum case. This is enough to refute the functionalist theory of qualitative content and at the same time to establish the intentional/qualitative distinction.[43]

According to Block, our new linguistic and physical environment will eventually produce changes in the intentional contents of our mental states. In time, our blue experiences will be about yellow things, our red experiences will be about green things, and so on, just like the other inhabitants of the Inverted Karth. According to Block's view, we will be intentionally and functionally inverted with respect to our former self, but our qualia will remain invariant. Inverted Karth also challenges representationalism, the view that qualia are just representational or intentional properties. On that view, blue experiences are equated with perceptual states that represent blue things.

David Chalmers argues that the absent-qualia hypothesis challenges not only functionalism but also versions of physicalism. Just as a qualia-free functional duplicate of a conscious human being seems possible, a qualia-free physical duplicate seems possible. Such creatures are known as phenomenal zombies. We cannot see any conscious experience in such a system. In this case, a zombie may have mind just like us. beliefs, desires and even pains functionally equivalent to us, but it would never enjoy mental states with qualitative character. Here the qualia are absent and there is a zombie externally identical to ourselves but lacking an inner life. Chalmers discusses 'fading qualia' as a positive argument

against the possibility of absent qualia. A thought experiment is involved with the replacement of parts of a brain by silicon chips. Here a system (functional isomorph Robot) is functionally same with a conscious system like a man. which lacks conscious experience entirely, and is made of silicon chips instead of neurons. Every neuron in the system has been replaced by a chip, and there are no biochemical mechanisms playing an essential role.[44] The system. Robot, is processing the same inputs and behaviour like human beings but by hypothesis is experiencing nothing at all. According to Chalmers, "fading qualia are logically possible. There is no contradiction in the description of a system **that** is so wrong about its experiences. But logical possibility and natural possibility are different things."[45]

Chalmers" dancing qualia is also an argument against the possibility of inverted qualia. In this case, the structural features of these systems' experiences are preserved throughout.[40] There can be two functional isomorphic systems in the same functional state but having different experiences. This thought argument takes a silicon circuit and install it in human beings head as a backup circuit. After the install, the switch can operate directly between the neural and silicon circuits. When upon flipping the switch, the neural circuit becomes irrelevant and silicon circuit takes over. Suppose somebody is having a red experience and his/her silicon isomorph is having a blue experience. When we flip the switch that time his/her experience was red. After the switch, he/she has a blue experience. Chalmers describes the situation as:

> What will happen, then, is that my experience will change "before my eyes."" Where I was once experiencing red, I will now experience blue. All of a sudden, 1 will have a blue experience of the apple on my desk. We can even imagine flipping the switch back and forth a number of limes, so that the red and blue experiences "dance" before my eyes.[47]

According to Chalmers " qualia are dependent not just on functional organization but on implementational details, it may well be that our qualia are in fact dancing before our eyes all the time."[48] Therefore, in dancing qualia a functionally isomorphic silicon system may experience blue where human being experience red. Chalmers argues that though it is logically possible to have dancing qualia and fading qualia, it is not practically possible to have them. It follows that we

have good reason to believe that the principle of organizational invariance is true, and that functional organization fully determines conscious experience.[49]

Functionalists and physicalists sometimes respond by challenging the coherence of the absent qualia hypothesis. For example. Shoemaker argues that a true functional duplicate of a conscious human must have introspective beliefs about its own sensory states. which in his view entails that some of its slates have qualia. Another reply is to concede that the absent qualia hypothesis is coherent, but deny that it undermines functionalism or physicalism. Here we can discuss Kripke's view on necessity. according to whom. " water is H_2O" is a metaphysically necessary truth. which is found even if the laws of nature are different. Yet, we know that the truth is only *a posteriori;* conceptual reflection alone cannot reveal the metaphysical impossibility of water existing without H_2O. Likewise. the argument shows that conceptual reflection alone cannot reveal whether absent qualia cases are metaphysically possible. This argument depends on the clear-cut distinction between the ordinary concept of water. which is given by its superficial features. and water itself, the essence of which consists in its molecular structure.

We have some subjective character of experience or raw feeling. which involves something 'intrinsic', not reducible to behaviour. For example, the red things, which look red and our feelings of red. are the way the red thing appears to us. These appearances are the phenomenal properties of the things, these are also in our subjective consciousness, and as such they make our colour experience. The phenomenal properties of colour red are given only in the subjective consciousness. The raw feels are intrinsic in a certain sense in which the character of an individual's raw feeling is logically independent of its relations to external things. As R. Kirk claims. "raw feeling is inner" in a special way."[50] In other words, raw feelings are subjective. These are involved in all varieties of sensation and conscious perceptual experience. dreaming, after-imaging, etc.

The friends of qualia argue that there are qualitative features of consciousness that are facts of intersubjective understanding. The conscious states, which constitute our mind, have some features like being experienced. This

type of aspect of our consciousness cannot be studied by the brain sciences. This subjective aspect can be studied only by the phenomenology of the psychological states which is known as the qualitative features of consciousness. The first-person point of view only takes the mental states as belonging to a person from his/her subjective point of view. The raw feelings of our consciousness are ontologically real, because they are the ultimate qualitative objects, which make up the phenomenal mind. The qualia constitute the essence of consciousness and are intrinsic to the conscious subjects.

Functionalism fails to explain our color experiences. In case of spectrum inversion, there is no difference in functional terms between my colour experience and that of others. In respect of color experiences, we are functionally equivalent. It, thus, means that my color experience and others experience would exhibit exactly the same pattern of causal relations to environmental states, and other mental states or behaviour. After all, they would have exactly the same causal role. However, our color experiences have the most striking feature 'qualitative character".

Lastly, we cannot doubt the fact that other human beings can see colors differently. Even in our own case, we may see colors differently in different situations. Therefore, both the intrasubjective and intersubjective quale inversions are possible, and we can always imagine what could happen to our present color experience in a different situation. This inversion is possible because we have all the relevant conceptual resources to think of the inverted qualia. A theory of subjective consciousness gains its motivation from the need to explain the heterogeneous qualitative character of our mental life. Prof. Pradhan writes:

> The mind has irreducible conscious states that collectively constitute the phenomenal structure of our mind. Mind in this sense is not just a machine that acts on the world but is a conscious entity that presupposes a conscious subject to which it belongs. The world of consciousness thus is not a mere function of the physical system of the brain.[21]

Thus, our knowledge or awareness of our qualia could not constitute by any of the physical processes occurring in us. The similar processes would occur in beings that are physically just like us yet completely lack qualia.

IV. Consciousness as Primary

Searle points that computers can never become conscious due to lack of personal experience of qualia. or the internal subjective reelings. This aspect of consciousness is phenomenal consciousness. or conscious experience. Conscious experience refers to the quality of experience. the feeling of an experiencing subject. It is that which we have as difficulty in communicating to someone who has not encountered it.

The question is whether conscious experience is amenable scientifically. Can we account for the existence of conscious experience within the scientific framework? We cannot observe consciousness outside ourselves. This sets consciousness apart. Most philosophers and scientists have concluded that the traditional scientific method would never work for consciousness. However, consciousness is no more "magic"" than electricity. We study electricity by studying the elementary particles that give rise to it. We can study consciousness, if we can identify the particles and their properties that give rise to it.[52]

The main problem is the lack of an empirical test for consciousness. We cannot deduce whether a being is conscious or not. We cannot even "measure" its consciousness. We cannot rule out that every object in the universe. including each elementary particle, has consciousness.[53] The point is that our mind is capable only of observing conscious phenomena at its own level and within itself. Our mind is capable of observing only one phenomenon that is itself.

There is no question that experience is closely associated with physical processes in systems such as brains. It seems that physical processes give rise to experience, at least in the sense that a physical system such as a brain with the right physical properties inevitably yields corresponding states of experience. Nevertheless, how and why do physical processes give rise to experience? This is

the core problem of conseiousness. which is discussed as the hard problem[54] of consciousness. Above all. we discusses that human beings have subjective experience: there is something it is like to be them. We can say that a being is conscious in this sense or is phenomenally conscious. when there is something it is like to be that being. Each of conscious states has a phenomenal character. with phenomenal properties or qualia characterizing what it is like to be in the state.

Flanagan holds that consciousness has a complex structure. To define this complex structure. it requires the help of phenomenological. psychological and neural analysis. According to him. there is a gap between the first-person and the third-person points of view. The gap between the subjective and the objective is an epistemic gap. not an ontological gap. According to Flanagan:

> ...to sketch a naturalistic theory of consciousness consistent with our natures as biological creatures with nervous systems of a certain kind. There are possible creatures that are identical to us al the level of observable input-output relations but that lack inner lives altogether. We are not like this. Consciousness is essential to human nature and to the human mind.[55]

Consciousness in the human beings is a higher order property. Conscious beings are not only sensitive to the environment. but they also change their behaviour according to the change in the environment. This change occurs not only in the physical structure of the organism, but also in the realm of the mental. Creativity is another of the higher order features of human consciousness. Creativity is manifested in language using, emotion sharing, creativity in art and science, etc., which demand definitely a higher order consciousness rather than having mere sensitiveness. Human behaviour is more sophisticated than animal behaviour. Creativity is an esteemed feature of the human mind. The essence of creativity requires that the entity be conscious. The problem is, if this is essential then, we need to consider how we can make our artificial system conscious. and that problem itself presents a major task. Creativity is the ability, which comes up with ideas like concepts, poems, scientific theories, etc. Only human beings have creative power. From the psychologist point of view, creativity is like intuition. According to Margaret A. Boden, " creativity is a puzzle, a paradox, some say a

mystery. Inventors, scientists, and artists rarely know how their original ideas arise. They maintain intuition, but cannot say how it works."[56] Many creative ideas are surprising in a deeper way. For example, creating machines or computers is an unexpected use of everyday objects that could not have happened before. However, the question is: Can computer be creative? Many people argue that no computer could be genuinely creative. Whatever the machine produces is due to the programmer's creativity. Since the machine is not conscious, and has no desires, preferences or values, it cannot appreciate or judge what it is doing. Whereas a work of art is an expression of human experience and it expresses a communication between human beings.

Creativity itself is a mystery, something that makes it difficult to see how it is even possible. Mysteries are beyond the reach of science. There is something paradoxical about the creativity and there is something, which makes it difficult. M.A. Boden writes:

> Many creative ideas, however, are surprising in a deeper way. They concern novel ideas that not only did not happen before, but that—in a sense to be clarified below—could not have happened before.[57]

Generally, Artificial Intelligence studies the nature of intelligence and its method is to try to make possible computers to do the things that minds can do like seeing, speaking, story telling, thinking, etc. But how can computers have anything to do with creativity? Whereas a computer can do only what its program enables it to do. In short, computational ideas can help us to understand how human creativity is possible. This does not mean that creativity is predictable, nor even that an original idea can be explained in every detail after it has appeared. From the mechanical point of view, we can draw on computational ideas in understanding in scientific terms how 'intuition' works. However, intuition itself is a creative process beyond the reach of the computer.

Moreover, computers are limited in a way that human beings arc not. In particular, they would have no inner life, no conscious experience, no true understanding. Artificial Intelligence could not explain consciousness in the machine. Consciousness is subjective experience and can only be realized in the first person perspective. It is often thought that the essence of creativity requires

that the entity be conscious, thus be able to deliberate on a particular problem. If this is essential, then we need to consider how we can make our artificial system conscious, and that problem itself presents a major conceptual problem.

Consciousness is the primary state of our mental states. Some things such as stones and trees are absolutely lacking any subjectivity. While other things such as you and me or human beings do have points *of* view i.e.. private, perspectival, inner ways of being apprised of some limited aspects of this world. We lead our lives, suffering and enjoying, deciding and choosing our actions, guided by this "first-person" access that we have. To be conscious is to be an agent with a point of view. Chalmers claims that consciousness is not reductively explainable. From this result, he goes on to propose a new theoretical framework called "naturalist dualism" in which consciousness stands as an unreduced entity next to basic physical entities like energy or matter. His argument is that a reductive theory *of* consciousness would need an analysis of consciousness such that physical facts could conceivably imply facts about experience. A functional account seems to miss the essence of conscious experience, and it is hard to see how a structural analysis may do any better. The fact that we do not even have an idea of how such an implication could possibly go shows that consciousness is different from all other phenomena: it is not reductively explainable

Similarly, Searle's theory of consciousness is that consciousness is irreducible. For Searle, consciousness is essentially a first person, subjective phenomenon, and conscious states cannot be reduced because simply misses the essential features of conscious states i.e., their subjective qualities. The Chinese room argument shows that semantics is not intrinsic to syntax. Something is a symbol only relative to some observer, user or agent who assigns a symbolic interpretation to it. Computation exists only relative to some agent or observer who imposes a computational interpretation on some phenomenon. Thus, consciousness can be considered as primary, as it is though the conscious subject that everything is considered as a known phenomenon.

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[42] Ibid., p. 680.

[43] Ibid., p. 683.

[44] David J. Chalmers. *The Conscious Mind: In Search of a Fundamental Theory,* p.254.

[45] Ibid., p.257.

[46] Ibid., p. 266.

[47] Ibid., p. 268.

[48] Ibid., p.269.

[49] Ibid., p. 274.

[50] Robert Kirk. *Raw Feelings: A Philosophical Account of the Essence of Consciousness,* Clarendon Press. Oxford. 1994. p. 57.

[51] R. C. Pradhan, 'Why Qualia Cannot be Quined' in *Journal of Indian Council of Philosophical Researdu* Volume XIX Number 2, April-June 2002, p. 93.

[52] David J. Chalmers. "Facing up to the Problem of Consciousness". in *Explaining Consciousness—The Hard Problem*. (ed.). Jonathan Shear. The MIT Press. Massachusetts, Cambridge. 1995. p. 18.

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[54] David .1. Chalmers. "Facing up to the Problem of Consciousness", in *Explaining Consciousness—The Hard Problem*. (ed.). Jonathan Shear, p.9.

[55] O. Flanagan. *Consciousness Reconsidered*. The MIT Press. Massachusetts. Cambridge. 1992. p.221

[56] Margaret A. Boden.. 'What is Creativity?" in *Dimensions of Creativity*. (ed.) Margaret A. Boden. The MIT Press. Massachusetts. Cambridge, 1994. p.75.

[57] Ibid. p.76.

Conclusion

The term "consciousness" has a broad use to designate any mental state or whatever it is about a state that makes it mental. Consciousness is the most important feature of mind. Consciousness is something, which makes us 'aware' of ourselves and of the things that surround us. Since consciousness is presupposed in all our mental activities, it explains the menial phenomena but cannot itself be explained.

In Chapter 1, I have pointed out that consciousness is a natural phenomenon. Consciousness is an important part of nature so long as it occurs in human beings and other animal species. I have argued, following Chalmers, that the fundamental natural laws that govern consciousness may or may not be physical in nature, keeping the possibility open that there are psychophysical laws. Now the question arises: What essentially is the relationship between the events that take place inside the brain and those private subjective, introspective experiences that together constitute our inner mental life? The crucial relationship between consciousness and the brain consists in the (act that the lower-level neuronal processes in the brain cause consciousness, and that consciousness is a higher-level feature of the system that is made up of the lower level neuronal elements. The easy and hard problems of consciousness do really exist. Certain aspects of consciousness can definitely be explained in terms of the cognitive functions. Hence, they are "easy" problems. But in case of the hard problem regarding the explanation of the experience, we have no easy solution. There is no scientific method to solve the problems of 'experience'. Experience is something that we just feel.

In Chapter 2, 1 have shown that the phenomenon of consciousness poses serious difficulty for materialism. Consciousness includes qualia, the phenomenal feel and the subjective quality *of* experience which are not reducible to physical facts. Materialism docs not accept the reality of consciousness. The biological naturalism of Searle finds the materialist worldview inconsistent and incomplete for not accommodating consciousness within its world picture. Behaviourism is a profoundly unconventional and incomplete account of mental processes. A man's

behaviour constitutes the reason we have for attributing certain mental processes to him but the behaviour itself cannot be identified with mental process. Perhaps mind can be defined not as behaviour but rather as the inner cause of certain behaviour. According to functional ism. mental states and processes arc functional kinds. Dennett's sub-personal model explains consciousness and other mental activities through the help of neurological states and processes of the organism. whereas the multiple-draft-model discusses how an artificial system behaves intelligently. Functionalism is criticized by philosophers as it does not give sufficient account of conscious experience and sensations such as what it is like to be in pain, to be happy, etc. It fails lo account for the real nature of the mental states, because it reduces mental states to the machine states. The functionalists always leave out the qualitative subjective feel of some of our mental states. There are certain qualitative experiences involved with our mental states such as seeing a red object or having a pain in leg. etc. Functionalism describes only these experiences in terms of their causal relations and leaves out the qualia.

Chapter 3 had highlighted the failure of functionalism and cognitivism as a theory of consciousness. According to Ned Block, functionalism is guilty of physicalism. Because, for the functionalist, 'pain' is identical with a physical state, or it is a first-order physical property (token physicalism). However, some philosophers do not accept this. They argue that, if functionalism is true, then physicalism is probably false. If pain is a functional state, it cannot be a brain state, because creatures without brains can realize the same Turing machine programme as creatures with brains. For a functionalist, consciousness would be a mental process with certain kinds of causal relations to the inputs, to other mental states or processes, and to certain behaviours. One can also posit the existence of zombies, unconscious beings that have the same behaviour and the same brain states as a conscious being, but have no qualia. However, the functionalist theory fails to prove the qualitative aspect of mind- what it is like to be a conscious being.

The computational model of consciousness is not sufficient for explaining consciousness, because computation is defined syntactically. It is defined in terms of the manipulation of symbols. However, the syntax by itself can never be

sufficient for the sort of contents that characteristically go with conscious thoughts. The representational theory of consciousness is the view that consciousness reduces to mental representations. It is the view that phenomenal characters somehow reduce to representational properties. But this is an inadequate explanation of the phenomenal consciousness.

In Chapter 4. I have discussed the view that zombie as conscious beings physically identical with ourselves are possible. The zombies may be physically and functionally identical to human beings but they lack experiences. We know that our grounds lor belief in consciousness are derived solely from our own experience of it. In other words, we can say that our knowledge of consciousness comes from our own experiences and not from any external observation. Consciousness cannot logically supervene on the physical facts; it shows that no reductive explanation of consciousness can succeed. Because, consciousness cannot be a physical property, nor can it be reduced to physical properties. Consciousness, the subjective experience of qualia and mental content cannot be explained by a third-person account. Neuroscience and cognitive modeling do not explain the qualitative nature of a sensation of red, or even why such a subjective sensation should exist. From the first-person perspective, we have beliefs about our own experiences and attitudes and we have phenomenal consciousness, which is distinguished from other features.

In Chapter 5, I have argued that the subjectivity of consciousness is an essential feature of mental states. Consciousness is a phenomenon, which cannot be measured, observed or experienced in public. It can be known only from a first-person perspective, but not from the third-person, objective or scientific perspective. Thomas Nagel shows that subjectivity is the fundamental cornerstone of consciousness. There is a 'subjective feeling' attached to one's conscious experience. We not only see a variety of things in the world, but we tend to see them from our subjective point of view. The subjective feelings are the outcome of our conscious experience. It is fundamental and highly specific that each human being has a unique way of seeing, feeling, or experiencing things. Qualitative features are only the first-person conscious experiences or the subjective attitudes of experiencing things. Therefore, qualia belong to the first

person point of view and the first person ontology. Our knowledge or awareness of our qualia could not be constituted by any of the physical processes occurring in us.

To conclude: the phenomenal experience must be a fundamental feature of nature not to be explained by the physical processes. It is the real "hard problem" of consciousness, because it has the qualitative aspects or qualia. which cannot be explained by the known methods of science. Consciousness is the primary state of our mental states. Thus, a first-person ontology is necessary to account for the reality consciousness in the world.

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