THEORIES OF CONSCIOUSNESS - AN APPRAISAL AND EVALUATION

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CERTIFICATE

I, Prof. Dr. A. Kanthamani, do hereby certify that this dissertation entitled **THEORIES OF CONSCIOUSNESS - AN APPRAISAL AND EVALUATION** is a record of bona fide study and research carried out by Sheeja O. K. under my supervision and guidance.

28/8/05

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DECLARATION

I, Sheeja O.K., do hereby declare that this thesis **THEORIES OF CONSCIOUSNESS - AN APPRAISAL AND EVALUATION** has not been submitted for the award of a degree, diploma, title or recognition before.

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SHEEJA O. K.

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In loving memory of

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who undeliberately pushed me to this vocation

CONTENTS

LIST OF FIGURES

PREFACE

The following dissertation on 'Theories of Consciousness - An Appraisal and Evaluation' has the objective to classify all extant theories of consciousness into three types, for the purpose of evaluating them. They are:

1. The classification of all Western theories due to Peter Carruthers (transitive consciousness) (2000)
2. The Counter classification due to William Seager (intransitive consciousness) (1999), and
3. The Indian theories of consciousness due to Bina Gupta (2003).

(2) is counter-posed to (1) but has no value as there is a defence to (1) all along, on the basis of higher-order theory of consciousness which seeks the second order understanding of first-order conscious states.

(3) is counter posed to (1) and (2) but found to be unsuccessful because of the lack of neurobiological support. So it is found necessary to make

a quick review of the various classical theories of mind and consciousness as briefly touched below, before adding support to the neurobiological explanation of consciousness. Starting with dualism, behaviourism, functionalism, identity theory and eliminativism, we will try to evaluate the above classifications from a neurobiological point of view after classifying the entire development of cognitive science into six or seven stages.

Chapter 1 outlines thus the many traditional theories of mind culminating in the computational/representational approaches supported by connectionist research. But the understanding of the mental states in terms of brain states is governed by taking the neocortex as an organ of plasticity. This is what meant by saying that our brain is a massively parallel machine. The question that comes up here is 'can the PDP (Parallel Data Processing) research strategy explain the neural plasticity? The answer is not as straightforward as it seems because the later adaptation in neuroscience is specially advanced to answer the above question whether neuroscience can explain neural plasticity, from a biological point of view.

Chapter two claims to add support to reductionism as opposed to non-reductionism, looking at the controversy between the two opposed strains of thinking. It claims that in the light of current neuroscience reductionism has still an edge over the other. So, we proceed to look at the texture of arguments in favour of reductionism as well as non-reductionism. The family of arguments contains Nagel (what it is to be in a Phenomenal state), Jackson (Knowledge argument), Searle (Chinese Room argument) and Chalmers (The Zombie argument).

These arguments get a more recent and powerful format in Ned Block while asserts that Physics is inaccessible, so non-reductive strategy simply follows from it. So also physics is meta inaccessible, and hence non-reductive strategy needs to be supported. This is effectively countered by biological reductionism (ruthlessly reductionistic type) by showing that reductionism (in practice) is accessible and meta accessible (it gives an idea of the type of Science we have). So what follows from this that the above identity of mental states as brain states is to serve as a hypothesis.

Chapter three presents the classification as well as the counter classification especially with the attendant issue of the controversy.

Chapter four deals with attendant problems of consciousness. The problems of overdetermination as well as supervenience cut both ways and so they do not stand in support to any form of non-reductionism. Problem of phenomenal qualia is a philosophical jargon. At the most, it may point towards what is known as the problem of illusion. It is climaxed by considering the dream argument, which provides a further insight into why non-reductionism is not acceptable.

Chapter five deals with Indian Theories of Consciousness. The benchmark of all Indian philosophies up to the present is ruthlessly ontological account. All the Indian theories can broadly lead to two opposing taxonomies of realism and idealism. The criticism against this is that they are opposed in a sense, to reductionist pair and no neurobiological account will support the defence of idealistic thesis, as brought out by Bina Gupta. The conflict between atman and anatman is the impetus for all the theories of Indian tradition. Bina Gupta suggests that we need to combine the insights gained from the tradition into a metaphysics based on our knowledge of brain and

neurological sciences as well as physics of elementary particles. It is doubtful whether such integration could be achieved. Thus the general tenure of our study is to demonstrate that none of the classification gets support from a neurobiological standpoint, which is a major thrust today.

CHAPTER I

INTRODUCTION: THEORIES OF MIND AND CONSCIOUSNESS

1.1. STATEMENT OF THE PROBLEMATIC

The following quotations bring out the greatest challenge to the problematic of consciousness:

> "How it is that so remarkable as a state of consciousness comes about as a result of irritating nervous tissue, is just as unaccountable as the appearance of Djin when Alladin rubbed his lamp."[1] (T.H. Huxley, 1886)

> "Consciousness is what makes mind-body problem really intractable."[2] (Thomas Nagel, 1979)

> "How can technicolour phenomenology arise from soggy grey matter?"[3] (McGinn, 1991)

The problem of consciousness is the last bastion of attack on science. The beacon light of the thinking that guides this research is the remark made by Patricia Churchland: "In a way, nothing more is obvious than that philosophers of mind could profit from knowing at least something of what there is to know about how the brain works. After all, one might say, how could empirical facts about the nervous system fail to be relevant to studies in the philosophy of mind?"[4] The objective is to consider all the theories of consciousness under three main classifications before evaluating them finally. On the Western side, we shall have two main types one that is due to Peter Carruthers who develops a classification of all theories representing in the form of a Tree Diagram, on the basis of the distinction between the first-order and the second-order theories.[5] While first-order theories posit consciousness per se, second-order theories explain what it is to be in that state of consciousness. The former takes consciousness as intransitive while the latter takes it to be transitive. Quite opposed to this is the second classification, which is due to William Seager.[6] Seager's counter classification denies credit to the above, and thrives on two problems namely the generation problem and the identity theory.

The former principle purported to explain consciousness as a supervenient trait that needs to posit an ultimate metaphysical principle. The latter denies that mental states are identical with brain states. Thus, his attempt is based on quantum approach (Penrose, Chalmers) while trying to defend a form of Panpsychism. The latter classification is to be counterposed to the former on account of its opposition to Carruthers' adherence of higher-order theory. Now, we will also counterpose another classification of Indian theories of consciousness to the above that is drawn on the opposition between the metaphysical principles of Realism and Idealism. Realism states that mental states are real/functional states. Idealism holds that mental states are only mental states, we shall say, *inter alia* of all other bodily states. This is appropriate since this is the first time an attempt is made by Bina Gupta to classify all the Indian theories of consciousness.[7] Towards the end, we will add support to neurobiological explanation of mind (including consciousness/ subjectivity) and more particularly to the strong reductionist (biological) approaches as recommended by recent development in philosophy of neuroscience.[8] Our investigation

into the several features of the above classifications will be shown to point at this new wave of metascience.[9]

The two Tucson conferences (1994 & 1996) have given a new impetus to the positive scientific attitude towards consciousness by bringing in many varied tools for studying the problem of consciousness. Likewise, we also owe to Chalmers the distinction between the 'hard' and 'easy' problems of consciousness.[10] The 'easy' problems are those, which can be explained. 'Hard' problems cannot be explained by science.

1. Easy problems: (a) the integration of information by a cognitive system (b) The ability of a system to access its own internal states.

2. Hard problems: (a) The problem of experiences (b) The problem of consciousness.

The hardness is due to the fact that we do not know how to explain a state of consciousness in terms of its neurobiological basis. The easy-hard difference warrants a body-mind gap and consequently an explanatory gap (the notion which will be explained in the third

chapter) between the neural basis of phenomenal quality and phenomenal quality itself. 'Easy' problems are solvable when science reaches higher-levels, but 'hard' problems are not solvable even if science is enriched.

The hard-easy distinction roughly corresponds to Ned Block's distinction of phenomenal consciousness (P-consciousness) and access consciousness (A-consciousness).[11] For him, phenomenal consciousness is experience. P-conscious properties include the experiential properties of sensations, feelings, and perception, and also thoughts, wants and emotions. On the other hand A-consciousness is defined as the non-phenomenal notion of consciousness, Block mentions three differences between P-consciousness and A-consciousness. The first one is that P-conscious content is phenomenal whereas A-conscious content is representational. The second one is that A-consciousness is a functional notion whereas P-consciousness is not. The third difference is that there is such a thing as a P-conscious type or kind of state. But a particular A-conscious type at a given time could not be accessible at some other time. Let us turn to the traditional problems in philosophy of mind and its implications for cognitive science.

Churchland, after disposing off all traditional philosophies of mind as '*cameos*', classifies all the traditional problems of mind into four categories.[12] They are: (i) Ontological, (ii) Semantical, (iii) Epistemological, and (iv) Methodological. The ontological problem is concerned with the existence of mind. With reference to this problem, there are two views; one view is the strong reductionistic theories of mind, which claims that mental states and processes are merely states and processes of the brain. The other opposed view holds that mental states and processes are not only states and processes of physical system, but also a distinct kind of phenomena, which are non-physical (non-reductionism). This problem is widely known as mind-body problem. This problem deals with how mind causes bodily functions and vice-versa. It is related with the problem of mental causation. Physical world is causally closed, but mental world is excluded by causality. So it is what is known as the causal exclusion problem. Physical causation excludes mental causation. We cannot formulate mental laws for physical realm. There is no prominent causal theory in mental realm. If mental causation is reducible to physical causation, then it is possible to locate mind in the physical world. From a

neurobiological point of view of strong reduction, it might suggest a mind-brain continuum and accordingly this is suggested as a solution for the mind-body problem from the neurobiological point of view. The second problem is called the semantical problem, which involves an analysis of semantics of propositional attitude verbs such as 'I believe that p'. The solution to the mind-body problem is not possible without finding an answer to the above. The solution lies in the semantic analysis of propositional attitudes. Various proposals to analyse the folk/commonsense psychological concepts have not yielded success. These proposals are critiqued by eliminativists such as Churchland and Stephen Stich who try to exclude folk psychological beliefs from scientific psychology as a myth. Following Quine, Feyerabend and Rorty, they argue that materialists can exclude mentalism as a myth. Churchland is called an eliminativist materialist now,[13] and Stich is called eliminativism is in prospects on the future developments of science.[14] Eliminativism as a strong form of behaviourism nowhere registers success, as it has become increasingly clear that we can preserve mentalism while at the same time explain it from a neurobiological point of view. The third one is the

epistemological problem, which deals with the problem of other minds that is how we can know that there are minds other than our own. Various solutions (e.g. argument from analogy) were suggested in this connection, but the problem continues to haunt us till today. Finally, the methodological problem deals with the method, by which one understands his own mind and others (the problem of self-knowledge, self-identity and the other knowledge). There are four most influential methodologies, which are guided research into the mind in this century. They are idealism, realism (debate is resurrected within Indian tradition, chapter 5) and phenomenology, methodological behaviourism, the cognitive/computational and representational approach and methodological materialism.

Basically there are two approaches in vogue. One is the top-down approach and the other is the bottom-up research. In top-down approach, we start with questions about mind and try to answer what it is. Among them, the problem of consciousness has been considered as the most important one. The classical top-down approaches to philosophy of mind can be divided into various categories such as

dualists, materialists, behaviourists, identity theorists, and functionalists.

On the other hand, the bottom-up approach starts with the structure and function of the neurons and the way they are connected to other neurons in the brain in order to answer philosophically related questions like, 'What is mind?', 'What is consciousness?' etc. According to this view, cognitive activities are ultimately just activities of the nervous system. To understand the activities of the nervous system the best way is to examine the nervous system itself. That is, to discover the structure and behaviour of its tiniest elements and their interactions. Though the bottom-up approach generally offers the best hope for constructing a new and more adequate set of concepts with which to understand our inner life, they also represent a top-down approach especially when they define mind/consciousness in terms of what Churchland calls the 'higher-order computation'. That is, computation is not all that biology can teach us.

Ryle maintains that mind-body problem is an issue of philosophical measure and it requires to be dissolved.[15] As against this, Lowe considers it as "metaphysical problematic of analytical

philosophy".[16] Mind-body problem is about the relationship between mental and physical realms. This is the problem, which arises when trying to locate the mind in the world that is essentially physical which causally closed.

According to Churchland, there are two types of sceptics about mind.[17] One group is boggled sceptics and the other group is principled sceptics. Boggled sceptics are mysterianists who tend to think we can never have any idea of mind even if science is improved. We can divide principled sceptics into substance dualism and property dualism. And the importance of the property dualism is that from this, identity theory, emergentism, eliminativism etc. arose.

If we assume, on the grounds of introspection that the mind is something different from the physical world, this natural standpoint is known as dualism. This theory holds that each person's mind is not identical with body. The dualist approach claims that the essential nature of conscious intelligence resides in something non-physical. It appears in strong and weak forms.[18] In its strong form, it is called as substance dualism. In weak form, it appears in the form of property dualism. Strong dualism claims that mind and body are quite distinct

kinds of things. On the other hand, weak dualism claims that the subject of both mental and physical properties may be a physical thing. But the mental property is not the physical one and is independent of physical properties.

Descartes' substance dualism is the most prominent theory of mind, which is also known as interactionism. According to him, essence of physical substance is to be spatially extended and the essence of unmmaterial substance is thinking or to be conscious. He claims that mind and matter are causally influencing each other. In his account, causal interaction between mind and body occurred in the pineal gland. Such an explanation is not acceptable to the cognitive neuroscience that is prevailing today as a paradigm.

As against many critics, Lowe, taking the cue from P.F.Strawson and others, defends a non-Cartesian dualism.[19] According to this version; a person or subject of experience is not to be identified with his or her body or any part of it. But a person is not an immaterial soul or a combination of body and soul. It suggests that a person or subject of experience is to be thought of as a thing that possesses both mental and physical characteristics and they are related. Lowe argues that a

person is not identical with his or her body and not with any part of it. He also argues that a person is not composed by his or her body and not by any part of it.

While Kim uses the over-determination to support a physicalist argument, Lowe uses it to develop a neo-cartesian standpoint. Lowe supplies a causal theory to sustain his standpoint. Overdetermination cuts both ways. Mental causes overdetermine together with physical causes and so reject mental causes. Lowe retains them to support dualism. Descartes argues that a person is a simple substance and concludes that a person is not identical with his or her body. Opposed to this, Lowe argues from the promise that a person is not identical with his or her body and concludes that a person is a simple substance.

So, there are dualists as well as responses to dualism. Leibnitz's view is that the mind and body are distinct and causally isolated. They are in a pre-established harmony. God arranges them in a harmonious relationship. It is a kind of parallelism. He rejects any kind of causal interaction. Occasionalism holds the view that whenever a mental event appears to cause a physical event and physical event appears to cause a mental event is only an illusion. There are no direct casual

interactions between minds and bodies. God is responsible for the apparent causation of mental events by physical events. By double aspect theory, Spinoza claimed that mind and body are simply two correlated aspects of a single underlying substance that is itself neither mental nor material. This theory also derives from a direct causal relation between mental and physical.

Epiphenomenalism claims that physical states cause mental states, but mental states do not cause anything. They claim that there is only one-way psycho-physical action, from physical to mental. They hold that belief and thought and other mental experiences accompany and are caused by brain activity. But they do not actually cause the body to act.

According to Kim, these all are responses to dualism.[20] David Chalmers defends a form of substance dualism and he calls it as naturalistic dualism.[21] He argues that phenomenal proportion is not necessitated by physical properties, so that materialisation is failure. His anti-materialist argument is as follows:

1) In our world, there are conscious experiences.

2) There is a logically possible world, physically identical to ours in which the positive facts about consciousness in our world do not hold.

3) Therefore, facts about consciousness are further facts about our world, over and above the physical facts.

4) So materialism is false.

He argues that we can explain mind-body problem by psychophysical laws. However, such laws are not evident at present. Besides Chalmers, recently two scientists, Popper and Eccles defend dualism as a theory of mind. According to Eccles,[22] the capacity for thought is fundamentally metaphysical and so mind is not independent from language or thoughts. Popper argues: [23]

1. World $_3$ (concepts, theories etc.) can bring about changes in World$_1$ (physical).
2. World$_3$ can bring about changes in World$_1$ only indirectly (only through W_2 which is non-physical)
3. $\therefore$ World$_2$ cannot be the part of the World$_1$.

While Eccles holds that there is a causal relation between mind and language, Popper uses another strategy. Eccles holds that since mind can express thoughts, they are seen as residing in two realms of the brain. So there is some kind of dualism. Popper claims even if World $_2$ is computational they cannot be so reduced to World $_1$.

Churchland rejects dualism because (1) mental phenomena depend upon neurological phenomena, (2) modern computational results suggest that complex results can be achieved without a non-physical homunculus, (3) a lack of evidence of methodology for dualism and (4) it is said that dualism is anti-scientific. Ryle thinks that in dualism, we cannot understand the role of mental task in our language and argued that mind is not something beyond all its public behavioural positions.

The modern approaches to philosophy of mind arose as a reaction against dualism. They are behaviourism, identity theory, functionalism, etc. Behaviourism holds that the mind is reducible to its behavioural coordinates and identity theory defines mental states in terms of brain states. Functionalism takes mental states to be functional

or machine states. Behaviourism defines mind in terms of dispositional analysis, which yields the following type of conditionals.

X has energy: *X* is disposed to behave in such and such ways in the given circumstances.

Philosophical behaviourism states that statements about mind are logically equivalent to statements about behaviour. Methodological behaviourism holds that statements about the mind are statements about behaviour. So, the major motivation for philosophical behaviourism is three: reaction against Cartesian dualism, observation and physical verification of mental phenomena and the linguistic origin of philosophical problems.[24] Logical or ontological behaviourism is the theories about the behavioural definability of all psychological experiences. According to Kim, logical behaviourism comes in two succinct forms as given below:[25]

If verbal behaviour is the ultimate criteria, then it will come to this formulation:

S believes that P = df. If S is asked 'Is it the case that p?', S will answer , 'yes, it is the case that p'.

The right hand side of the formula states a dispositional property of S. S has the disposition to produce behaviour of an appropriate type under certain specified conditions. If there is a plausible entailment of behaviour B by mental states M_1 ... M_n, there is always a further mental state M_{n+1}, such that M_1 ... M_n, M_{n+1} together entail not B. This shows that the relationship between mental states and behaviour is complex. The statement 'Paul has a toothache' cannot be analysed completely and it is open-ended.

Methodological behaviourism regards consciousness as falling outside the province of psychological explanations. Philosophical behaviourism has two major defects. It plainly rejected the inner aspect of our mental states. The second defect arises when behaviourists attempt to specify in detail the multitracked disposition said to constitute any given mental state fails to explain mind/consciousness. It has its own quota of defects (e.g. it does not explain mind but rejects it).

1.2. CRITIQUE OF IDENTITY THEORY

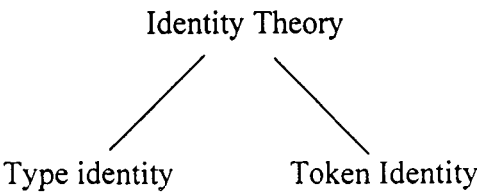
Once dualism and behaviourism is firmly rejected, a philosophical account of mental states has come to be centred on

identity theory. This theory is based on the assumption that there is a passive and comprehensive, system of correlation between mental events and brain processes. This is very similar to other type identities discovered by scientific theory such as heat = molecular motion or lightening = electrical discharges or water = H_2O. The mind-brain correlation theories can be stated as follows.[26]

For each type of M of mental event that occurs to an organism O, there exists a brain state of kind B (M's neural correlate or Substrate) such that M occurs to O at time t if and only if B occurs to O at t.

The above thesis captures that every mental event has a neural correlate. Besides, they must be law-like. For any changes that occur in one, there must be corresponding changes in the other. Identity theory is the more straightforward of the many materialist theories of mind. Its central claim is that mental states are physical states of the brain. That is each type of mental state or process is numerically identical with same type of physical state or process within the brain or central nervous system. Identity theory holds that mental states are identical with brain states.

Recent advances are neurosciences strongly support the theory. It puts forward many reasons for considering identity theory as an important one in physical neuroscience. The standard formulation of the identity theory states that every mental event is a physical event. Type identity holds that each type of mental state is identical with some particular type of brain state. Two main types are distinguished as shown below:



Token identity states that each particular state or event is identical with same brain state or event. The difference here is that it allows that individual instances of the same mental type may be instances of different type of brain state or event. It takes tokens as a datable particular rather than a type. In other words, it states that mental states of every event that falls under a mental event kind falls under a physical event kind or every event that has a mental property has also some physical property.

Token physicalism can be true even if mind- body supervenience fails. Token physicalism is a form of non - reductionism.

(a) Identity theory is supported by the genetic endowment and growth;

(b) It is directly supported by evolutionary theory;

(c) Neural dependence may be taken as a consequence of property dualism;

(d) Growing success of recent advances in neuroscience.

Identity theory is something that is intermediary between dualism and philosophical behaviourism. According to identity theory, dualists are right in maintaining that mental terms are inner and wrong in thinking that they are non-physical. While philosophical behaviourism was right in this materialistic outlook, but wrong in their refutation of any theory. U.T. Place, J.J.C. Smart and Armstrong are the chief exponents of identity theory.[27] The main claim of this theory is that mental states or processes are numerically identified with some types of physical state or process within the brain or central nervous system. In this view, minds are brains. That is, to have a mind is to have a brain.

The type identity holds that each general type of mental state is identical with some general type of brain states. According to type token identity theory, each particular instance of pain is identical with some particular brain-states. For Peter Carruthers, type-token identity theory is better than type-type identity. The last version of strong materialism is type-token identity theory. Identity theory avoided the many disadvantages of dualism. Since the evolutionary theory provides the only serious explanations for the controlling of the capacities of behaviour of the brain and central nervous system, identity theory is given due recognition.

There are also criticisms against identity theory.

a. The concept of identity theory is confusing.
b. The second objection is that from introspection. Mental states and properties are radically different from neuro-physiological properties and states.
c. Identification of mental states with brain states would commit us to statements that are literally unintelligible to category errors and identification causes more conceptual confusions.

Paul Churchland points out the following specific confusions in identity theory.[28] Introspection reveals a domain of thoughts, sensations and emotions, not a domain of electrochemical impulses in neural network. Mental states and properties, as revealed in introspection, appear radically different from any neuro-physiological states and properties. But the argument can easily be refuted by looking at the fact that scientific progress is due to theoretical research and experimental exploration with specially designed instruments.

The exact argument appeals to Leibnitz's law of identity:

1. My mental states are introspectively known by me as states of my conscious self.
2. My brain states are not introspectively known by me as states of any conscious self.
3. My mental states are not identical with any brain states. (21)

This commits the intentional fallacy, which is clear from the following examples:

1. Muhammad Ali is widely known as a heavy weight champion

2. Cassius Clay is not widely known as a heavy weight champion. Therefore, by Leibnitz's law.

3. Muhammad Ali is not identical with Cassius Clay.

Despite the truth of the relevant premise (2), both conclusions are false- it means that both arguments are invalid. No non-identity is entailed.

Another challenging argument called Jackson's knowledge argument that is based on the introspectable qualities of our sensations is that a many may know everything about the physical structure and activity of brain and its usual system without being in any sensation of colours that means complete knowledge of physical facts of usual perception and its related brain activity still leaves something out. The argument exploits an unwitting equivocation as the term 'know'. Concerning that man's full knowledge of brain, 'knows' means something like mastered the relevant set of neuro-scientific proposition. Concerning the missing knowledge of what it is like to have a sensation of color 'knows' means something like has a pre-linguistic representation of redness in her mechanism for non-inferential discriminations. This means that the brain uses more modes and media of representations than the mere storage of sentences. The

entire identity theorists needed to claim that these other modes of representations would also yield a neuro-scientific explanation. So the argument fails to use identity as a hypothesis.

Similarly, the multiple realization argument poses a problem to identity and it is stated as follows:

Type identity identifies mental states with physical states. For example, pain is c-fibre excitation. This means that the presence of c-fibre of a brain of an appropriate biological structure is necessary for an organism to be in pain. But there are capable organisms having totally different brain structure. Thus the type-physicalist should have a description of brain state, which is applicable to all organisms. Also the possibility of these being intelligent extraterritorial creature, whose biology is not carbon-based, is to be taken into account. It is conceivable to build robots, which can be considered to be having mental states. All this shows that any given mental state is multiply realizable in a large variety of physical/ biological structures with the consequence that it is not possible to identify a mental state with a physical state.

1.3. CRITIQUE OF FUNCTIONALIST PARADIGM

Functionalism is the widely held theory of mind among philosophers, cognitive psychologists and artificial intelligence researchers. This theory emphasizes that it is impossible to identify types of mental states with behavioural dispositions. But it characterises mental states by referring to behaviour indirectly. The central thesis of functionalism is that the essential feature of any mental state is its causal role. Causal role of mental states consists of three different types of causal relationship. A thorough functionalist account of mind is a more scientific programme for the study of mind. Functionalist accounts reduce mental states to functional states of the brain. Mental states characterized by functionalism are like software of a computer.

There are three types of functionalism. One is called the analytical functionalism, which states the thesis that mental states are representational as well as computational states. According to this, human brain is a biological computer. Like Davidson, before him, Putnam also tries to reconcile philosophy of mind and philosophy of language.[29] Similar remarks can also be made about this relation by

thinkers like, Kripke[30] (agrees to admit necessary a posteriori), Dummett[31] (sceptical like Chomsky) and Devitt[32] (finds the unity philosophy of language and philosophy of mind in a representational theory of mind). Later, Fodor also brings a unification theory in his language of thought hypothesis.[33] Two key features are internal realism and defence of nativism. Analysis of language also enters into philosophy of mind. In his earlier works, Putnam compared the mental states with functional states of the computer. But in the later works, he argued that functionalism does not tell us what the nature of mental state is. His view is that functionalism is wrong is identifying mental states with computational states because of the multiple realizability problem. Fodor's account of representational and computational states requires the positing of a mental language. It is supported by what is called the language-of-thought hypothesis. According to this account, our mind is a code language called the mentalese. It comes close to assuming that there is an inner verbalisation of our thoughts, which in turn requires there is a homunculus in each one of us. Fodor is responsible for outlining what has come to be known as the modularity view of mind according to which mind is distinguished by a hierarchy

of modules. The central module is identifiable with consciousness and the peripheral modules are assigned different functions.

The second version is homunculus functionalism. It has three key features.

a. The essence of mental state is what it does and not what it is.

b. The view that mind is modular.

c. The element is to apply the first two ideas recursively.

Each homunculus is in turn seems to be an ensemble of more specialized and have simpler homunculi. Dennett and Lycan defend a variant of homuncular functionalism.[34] We can summarize their views as follows:

a. Minds can be decomposed into interacting systems of homunculi.

b. A successful homuncular decomposition of the mind is an explanation of a sentient being in mechanical terms. This is Dennett's main message about homuncular functionalism.

c. Psychological states are houmcular states. That is psychological processes are processes in homunculi psychological processes are homunculi.

d. Psychological states or processes and processors are different in grain.

Lycan's version emphasizes the last two points. Two problems pose threat to homoncular functionalism. One is the problem of inverted spectrum and the other is the problem of absent qualia. If one's spectrum is inverted relative to another person, both remain functionally isomorphic with one another. Such inversions are entirely conceivable. If functionalism entails that they are not conceivable, the functionalism is false. Another problem is the problem of absent qualia.

The third form is supervenient functionalism, which lays emphasis on the emergent character of the mental and holds that mental states supervene functional states. J. Kim is the chief exponent of this type of functionalism.[35] The idea of superveniance stated as follows. Two things, which are exactly alike in all physical properties, cannot differ in respect of mental properties. Physical indiscernibility entails psychological indiscernibility. No mental difference without

physical difference. Mind-body supervenience asserts that creatures could not be psychologically different and yet physically identical. Opposed to homuncular functionalism, Andy Clark defends a form of functionalism, which he calls microfunctionalism that is defined as follows: the inner rules (functional profiles) do not map neatly into rules determined by everyday, contentful, purposive characterisation of the mental.[36] Homuncular functionalism holds that the functional subsystems are identified by whatever they may be said to do for the agent. Opposed to this, microfunctionalism describes the internal functional profile of the system in terms far removed from such contentful purposive characterisations. The system will be capable of vast, flexible structural variability and will have the attendant emergent properties. Microfunctionalism specifies internal state transition at a very finegrained level. The central idea of microfunctionalism is the dynamic view, which holds that there is a continuum of mind, and body that lies at the core of embedded cognition. There is no boundary line between mind, body and the world.[37] Microfunctionalism states that rules applicable to semantically transparent states are not applicable to semantically opaque states.

The central thesis of all the many varieties of functionalism is that the essential feature of any mental state is its casual role. So according to functionalist the distinctive or essential characteristic of anger is its casual role. Anger has distinctive causes that typically involve the belief that wrong has been done, and distinctive mental, behavioural and physiological consequences. The same is said of other mental states as well. Their essential or constitutive feature is this casual role. The functionalist attempts to reconcile the common sense and scientific picture. A physical state realizes the functional state.

Carruthers has expressed the opinion that functionalism offers a neat explanation of why it is that mental state type should be multiply realizable.[38] This is achieved by a combination of functionalism and token identity thesis; according to which each token mental state or process is identical with some physical state or process. It has obvious advantages over behaviourism since it can account for ordinary intuitions about casual relations. It also encourages the idea that there is a conceptual possibility of dualism. The question about the adequacy of functional explanation continues to arise even today. The questions about scientific explanations of identical states are problematic. We can neither explain nor relegate them.

Functionalism faces many criticisms. One of the most important charges against functionalism is that it is incapable of capturing the felt nature of phenomenal account of conscious experience. Objectors have urged that one could everything about the functional role of mental state and yet still have no idea of what it is to be in that state. Another objection is that it ignores the inner or qualitative nature of our mental states. The qualitative nature is essential feature of many types of mental states. Functionalism is therefore false. A physical state is the realization of the functional states is multiply realizable. Functionalism is incapable of capturing the felt nature or phenomenal account of conscious experience.

1.4. CRITIQUE OF ELIMINATIVISM

Many cognitive scientists believe that folk psychology could be eliminated by sophisticated science. This trend is commonly known as eliminativism. It comes in two distinct forms. One form is developed by Churchland, which is known, as eliminativism of the present and other one is Stephen Stitch's view, eliminativism in prospects. They put forward various arguments so as to eliminate the commonsense psychology of belief, hope, desire and other attitude of intentionality.

Churchland dismisses the theoretical side of folk psychology by attacking its sentential kinematics of folk psychology by holding that they do not constitute the basic kinematics and dynamics of human and animal cognition. According to his view, the basic kinematics of cognitive activity does not consist of sentences but consist of vectors. There are high-dimensional activation vectors. Mind is not sentence-crunching but number-crunching. Churchland gathers evidence from neuroscience to prove them. He makes an ad hoc distinction between FP and CS:

(1) FP, as a theory, is radically false,

(2) If FP is not a theory, there is no danger that it might be false.

(3) FP is to be replaced with a completed neuroscience.

(4) The structural features of FP parallel perfectly those of mathematical physics.

(5) Our brain indeed contains innate structures, but those structures have their primary function in perceptual organization.

(6) The underlying structures of our cognitive activities outstrip that of natural language capacities.

(7) Computational states are language-like syntactical states.

(8) If our intra-brain communication between two hemispheres take place, why not interbrain communication between different cognitive systems take place naturally. This shows that FP does not constitute an unbearable barrier to the advancing tide of neuroscience.

Stitch also attacks its epistemological basis and provides a different set of arguments against the sub-personal belief psychology. Later he builds up his argument from the major premise, which critiques the concept of rationality, quoting experimental evidence from psychology. His earlier argument reads:

Folk concepts cannot be explainable with science.

Therefore, they must be excluded from science.

Our beliefs are not amenable for scientific explanations.

No true believers exist.

The consequence is that folk psychological phenomena have no place within scientific psychology. FP is not part of scientific theory. FP must be eliminated from mature science.

One argument against eliminativism is that this inquires whether proving that FP is a false theory proves that it is a theory. If it is not a theory, it cannot be falsified by empirical refutation. Stich's argues that:

(1) FP is committed to the claim that propositional attitudes like belief and desire are functionally discrete, semantically interpretable states that play a causal role in the production of other propositional attitudes.

(2) There are no such states in connectionist modelling of our cognitive system. It is only from these two premises, given the assumption that

(3) Connectionist models are correct in their modelling, then the conclusion,

(4) The propositional attitudes posited by FP do not exist.

The connectionist models could not be incompatible with FP. Stich closes the review by commenting that the way whether

connectionist models poses a threat to FP or not, is an empirical matter to decide, and it is not to be disposed in an *a priori* way.

There are equally powerful arguments against eliminativism also. According to Kim Sterenly, we can hybridize joining both into one stream:[39]

FP is compatible with scientific psychology.

There fore FP must not be eliminated.

Critics like Carruthers believe that FP can be integrated with scientific psychology. According to Carruthers, FP can be defended from realistic standpoint.[40] But in Churchland's theorising, FP is less sophisticated and therefore FP must not be considered as sophisticated as scientific psychology. Against this, there are thinkers who believe FP is part of scientific psychology (Bermudez).[41] For some thinkers, there is a complete break from FP. Some others maintain that FP is continuous with scientific psychology. Anyhow, the matter is controversial. We must go beyond eliminativism. The best way to explain consciousness is to find out how the neuronal processes

responsible for the consciousness. Recently, neurobiologists and neuro-physiologists claim that they can solve the mind-body problem.

1.5. THE NEUROBIOLOGICAL BASIS OF CONSCIOUSNESS

Neurobiological approach can tell us something about the brain process that is correlated with consciousness. Francis Crick and Christof Koch have hypothesized that 40 - hertz oscillation may be the fundamental neural feature responsible for conscious experience.[42] Mind according this reductionist account is pyramidal cell activity.

The nervous system of all mammals is built according to the same general plan and also in the proportion of the various parts. Brain is attached to the rest of the body and communicates with it. The nervous system receives information from the various transactions in the body. A transducer turns a chemical influence into an electro chemical signal. Some transducers respond to signals come from outside the body and some other respond to acting inside the body. The former monitor the external sphere and the latter the internal location. The brain can influence the internal release of various

chemicals. From a cognitive science point of view, the best way to see the neocortex is suggested by the following dictum:

"Neocortex is basically an organ of plasticity."[43]

The cerebral cortex consists of two separate sheets of nerve cells; the white matter and grey matter. The former covers the 40% of the brain. The human neo-cortex consists some ten of billions of neurons, which are connected with each other. Some of the connections are local and others travel some distance before entering another part of the sheet.

The neo-cortex is the most complex part of the cortex. The neocortex, the most important part of the brain is known as the gateway of cortex. This part is divided into two-dozen regions each of which is concerned with some particular subdivisions of the neo-cortex. The main input to cortex has to pass through the thalamus.

(a) Visual modality: LGN (Lateral Geneculate Nuclius) visual cortex.

(b) Auditory modality: MGN (Medial Geneculate Nuclius)

The flow of information between thalamus and cortex is not unidirectional but bi-directional. Most of the projections from lower regions into the cortex (i.e. the input stream) are matched by projections from the cortex back down (i.e. the output stream). They are collateral pathways. Cortex is not a passive registry of input from the environment; instead inputs are modulated actively and constantly via output fibres.

The nerve cells are the basic units of the brain. A typical neuron receives excitatory and inhibitory signals from other neuron by way of the synaptic connection they make onto the neuron's cell body and its extended tree of dendritic branches. It sums those various incoming signals and emits an appropriate signal down its own axon, to make contact with further neurons. A neuron responds to the many sources of electric impulses that intrude on its cell body and on it's branches-its dendrites in three ways. Some inputs excite the neuron, some inhibit and other modulates its behaviour. The main function of neuron is to receive signals and send them out. There are 25 different neuronal types within the cortex. Neurons are different from many other cells. They have a more spiky shape than most cells. The general style of

dendrite branching varies from one type of neuron to another. A neuron has several main branches, each of which branches into sub branches and so on. The most common type of neuron in our neocortex is called a pyramidal cell. It often has a somewhat pyramid-shaped cell body and the 80% of cells are pyramidal cells. The axon of a neuron can be very long and the dendrites are short. In a neuron, the electrical effect depends upon charged atoms move in or out of the axon through molecular gates made of protein. The far ends of the axon have to be supplied with molecules by the cell body because almost all the genes and most of the biochemical machinery needed for the synthesis of protein are in the cell body, not in the axon. There is a systematic flow of molecules along the axon in both directions, reaching dendrites.

The spike travels down the axon and reaches synapse, the special junction between one neuron and another. Each neuron has many synapses on its dendrites and some. An average number for neurons in the neo-cortex might be six thousand. Synapse is some form of electrical contact. The two neurons are not directly joined together. There is a well-defined gap between them, which is called the synaptic cleft. When the spike arrives at the synapse, it causes little packets of

chemical to be released into the gap. These small chemical molecules diffuse rapidly in the gap, many of them combining with one or more of the molecular gates. This causes those particular gates to open and allows changed ions to flow in or out of the membrane on the postsynaptic side of the synapse, so that the local potential across the membrane is changed. The over all process is:

Electrical → chemical → electrical

There are two types of synapse - Type 1 and type 2, the former excites and the latter usually inhibits the recipient neuron. Type 2 synapses are more symmetrical than type 1 and their synaptic cleft is usually a little smaller. There are mainly two neuro transmitters in the neo-cortex-glutamate for excitation and GABA for inhibition. There are also other transmitters. But they produce slower effects than the two main fast transmitters.

There are three kinds of neurons. They are motor neurons, sensory neurons and large variety of interneurons. Motor neurons are found almost exclusively in the spinal cord and are defined as those neurons whose axons synapse directly onto a muscle cell. The axons of

motor neurons are some of the longest in the nervous system. Sensory neurons come in greater variety and are conventionally defined as those whose input stimulus in some dimensions of the world outside the nervous system. The central interneurons also come in a great variety of shapes and sizes. They all had seen variation on the same theme, dendrite input and axonic output. Most have many dendrite branches emerging directly from the cell body, which are called multipolar cells. Others called bipolar cells. They have only one dendritic thread emerging, which branches at a point some distance from the cell.

Cortex is relatively equiponential and plastic early in life. Current evidence suggests that there are no intrinsic, pre-determined areal maps in either the cortex, or the thalamus. Instead, both develop their area of specialisation as a consequence of their inputs and the temporal. This is called the chronotopic dynamics of neural growth. This means that normal cortical development permits a considerable degree of cortical plasticity. The extent and limits of plasticity is explained as follows:

Crossmodel plasticity-for example, retina can be induced to auditory thalamic areas and thence to auditory cortex.

Two extreme views of plasticity are:

a. Equipotentiality: Completely plastic for higher order functions. This view fell into disrepute in 1970s.

b. Irreversible determinism: regional specification for higher cognitive function is already established at birth (some cannot be reversed).

The best example is "Brain is highly plastic for linguistic function".

There are two types of plasticity: (a) inter-hemispheric and (b) intra-hemispheric plasticity. Cortex is an organ of plasticity. Brain is a self-organizing and experience-sensitivity network of representations that emerge progressively across the course of development.

One major trend in cognitive science research, which claims to reduce mind into its biological correlates and thereby close the explanatory gap, is connectionism. Churchland and Smolensky[44] are the chief exponents of this theory. This modelling uses simulated

networks of simple neurons like processing unit. They are also called parallel distributed model or neural networks. The inspiration is from brain's unit that is neurons. Connectionists support a non-sentential theory of representation. Connectionism differs from a computational model, reliance is on explicit syntactically structured symbols to store and process information. But in connectionist networks, information is encoded throughout nodes and representation, which are distributed throughout the network. The early model of connectionism showed that there are only two layers of processing units. The later models show that one may have as many layers as desired, inserting hidden units between the input and output layers. Thus, we have multi-layered network. They are distinguished as feed-forward and feed-backward or recurrent or contextual models. It is based on the assumption that cognitive mechanisms are learning mechanisms.

The connectionist model or the neural network model has inspired many research programmes within cognitive science. Neural networks are collection of variously interconnected units. Each unit has the properties of much-simplified neurons. Neural networks are used to simulate what goes on in parts of the nervous system produce useful

commercial devices, and to test general theories of how brains work. There are two types of networks: linear and non-linear. A linear system is that the output is proportional to the input. In a non-linear form, the output is entirely new one. A non-linear system is difficult to understand than a linear system. There are three types of neural networks, simple; complex includes feed forward and back propagation and artificial network that can divide into symbolic and non-symbolic. A simple network program is insufficient. PDP research suggests a complex network. Our brain is massively parallel processor or network. As a result we can distinguish between feed forward and feed backward model that requires back propagation of error. The network is called trained work. This is because of the plasticity of the brain. Brains are learning mechanisms. Such an artificial network was seen to work in a symbolic mode (Connectionism). Accordingly, the understanding of representation and computational understanding of the in each is different. On the symbolic side, we have proposition, propositional attitude states, and their semantic and systematic structures of language bearing analogy to structures of the thought within a folk psychological framework. On the non-symbolic mode, the

representational and computational understanding of mind is non-systematic, noisy and hence non-linear within a neurobiological perspective. Computation and representations are two basic ideas of neuro-computational perspective.[45] They roughly correspond to (a) vector coding and (b) vector transformation. The path of the neuron is called a vector. The former represents the way cognition is represented its numerical value and the latter is represents the path through which they systematically get transformed or modified or modified in a state space. The state space is the space of possibilities through electrical charges activates the other connected neurons. Our brain contains ten to the power of eleven neurons and each fires at the rate of ten to the power of thirteen times. Such a paradigm has been characterized as the state space sandwich model. It is a layered network.

Computational neuroscience is an evolving approach that aims to discover the properties characterising and the principles governing neurons and network of neurons. It infuses neurobiological data with computational ideas. There are two ancestral traditions to this; one is artificial intelligence, which produces intelligence under controlled conditions. The second is the tradition of cybernetics, which produces

an engineering model. In comparison with these traditions, the neurobiological approach is not just a type of computer modelling nor is it an information-processing model.

Computation in nervous system is unlike digital computer that is general purpose and can be programmed to run any algorithm. But the brain is an interconnected collection of special purpose systems. They are interconnected in that they can take over the roles of others. Computation in nervous system enables us to understand them as production of evolution, and not engineering design. This requires a method of reverse engineering. We make a transition from neurophilosophy to neurocomputational perspective and thence forward to philosophy of neuroscience, neither of which can dispense with questions about plasticity.

It was Patricia Churchland introduces the term 'neurophilosophy'.[46] This stands for a unified science of mind-brain. It appears in three forms. First it is in the strong form, second in the rivisionary form and the third is a slightly modified form, after implanting the computational ideas. In the unification form, it is given as a contribution thesis, and in the stronger revisionary form, it is

asserted as a Sina qua non thesis, and in the modified form, it is given as inter-theoretic that requires the displacement of philosophical theories of mentality with a computational account of the mind.

According to the first thesis, the central philosophical areas like epistemology could well profit from a scientific understanding of those capacities. In the strong form, it takes the terms cognition and emotion as explananda and neurobiology as its explanans. Neurons provide the basis for neurobiological approach to mind. Churchland's model is called as the Neural Network theory of mind. The way of understanding mind from a philosophy of language point of view which takes mind as a sentence-crunching machine must be replaced with a view takes it as a number-crunching machine. Thus Churchland aims to reduce scientific psychology to cognitive neuroscience.

In a stronger revisionary form, the second thesis holds cognitive neuroscience as more fundamental science of mind-brain than the classical philosophies of mind. Neuroscience is regarded as the main contributor to the understanding of the mind. It is the foundational science of cognition. It carries strong implications for philosophy or

philosophically related theories of mind like Dualism, Behaviourism, Identity theory and Functionalism.

In a modified form, third thesis aims to replace the currently inadequate theories of mentality with a conceptual framework of matured neuroscience. It infuses neurosciences with computational ideas. The term Neuro-philosophy slowly comes to be transformed into the computational brain. It aims to reduce the macro level phenomena to the micro-scale constituents. It proposes to produce a neurobiological explanation of all psychological phenomena, including subjectivity. It produces a bottom up approach, which starts with the structure of neuron. It tries to understand the functional organization of the brain in an abstract form. Francis Crick calls this as the Astonishing Hypothesis. It counts as a form of reduction, but it is entirely different from the classical Nagelian.

Churchland's philosophy of cognitive technology attacks the traditional theories of mind. It attaches a priori formulation of philosophically relevant theories of mind including dualism, behaviourism, identity and functionalist theories of mind. Churchland also makes a strong critique of sentential epistemology. Churchland

gives an abundant supply of visual, auditory, olfactory, gustatory and tactile systems of cognition. Each one has a system of activation vectors and they function in a multi dimensional vector space. So our mind is a massively parallel data processing machine and not a serial data processing machine. In serial machine, the output is completely determined by the input that is, linear transformation. In parallel processing the transformation is non-linear, that is the output goes by leaps and bounds. Non-linear transformation has three features. (1) It is a trained network. (2) It degrades gracefully and (3) it is plastic.

To summarise the various features of Connectionism as follows:[47]

Connectionist models represent the neural architecture. Connectionist models are not linear models of serial processing but they are non-linear models of parallel processing. Connectionist models are not symbol-like sentence-crunching machines. Connectionist models are non-symbolic like number crunching machines. Connectionist models are not linear static model of processing. Connectionist models are non-linear dynamic model of processing. Connectionist models are not semantically transparent

(rule-governing) systems. Connectionist models are semantically opaque (rule-changing) systems at the implementation level. Connectionist models are not fundamentally associationist in the mode. Connectionist models are fundamentally interactionist. Connectionist models represent to statistical regularities in the environment. Connectionist models are not based on any tabula-rasa assumption. Connectionist models are compatible with nativism/innatism. Connectionist models are approximate to biological organisms. Connectionist models have mysterious hidden layers. Connectionist models are imagistic and opposed to linguistic. Connectionist models are based on structural view of scientific theories. Connectionism represents the gold rush of the human mind. (Andy Clark).

Having said all these, we must realize that the computational account is non-biological and hence we make a further transition to philosophy of neuroscience, which is more biological in its basic approach. It comes mainly from recent development of cellular or molecular neuroscience and philosophy of neuroscience. We shall briefly describe these developments below. Professor A. Kanthamani

distinguishes the following stages in the development of cognitive science:[48]

1. From Neurophilosophy to Neurocomputational Perspective
2. From Neurocomputational Perspective to Cellular/ Molecular CS
3. From Philosophy of Neuroscience to Philosophy and Neuroscience

The first was due to Patricia and Paul Churchland, which were offered as part of naturalized epistemology. The second was scouted by Patricia in her project of Mind-Brain Continuum.[49] The third is the more recent developments in neuroscience which culminated in ruthlessly reductionist approaches to mind (Bechtel).[50] Thus the whole programme takes us from mind that is defined in terms of neurons towards mind that is to be defined in terms of molecules. Thus reductionism has an edge. We go beyond naturalism.

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CHAPTER II

REDUCTIONISM HAS AN EDGE

2.1 THE 'NATURALISTIC' RESPONSES TO THE HARD PROBLEM

In the words of Thomas Nagel, "Without consciousness the mind-body problem would be less interesting; with consciousness it seems hopeless".[1] Francis Crick and Christof Koch called consciousness the most mysterious aspect of the mind-body problem.[2] Neurologists claim to close the gap by attending to reduce consciousness into biological categories. They argue that consciousness is what is happening in the fixing of correlated neuron in 40-70 Hertz range in cerebral cortex. David Papineau suggests that the basis of a materialist view of consciousness is the referent of the phenomenal qualia.[3] He holds that there is nothing mysterious about consciousness.

Likewise Michael Tye offers a strong defence of phenomenal consciousness from an empirico-analytic point of view, calling that it is creating most perplexity among philosophers. Phenomenal consciousness is related with experiences of what-it-is-to-be in that states. It does not require real reflective abilities. Tye develops his defence on the basis of a sort of representationalist theory of mind. He claims that all experiences and feelings represent things and their phenomenal character is itself to be understood in terms of their representational contents. He maps out the ten problems related with phenomenal consciousness as follows:[4]

1. The Problem of Ownership:- The problem is that of explaining how the mental objects of experience and feeling could be physical, given that they are necessarily owned and necessarily private to their owners.

2. The Problem of Perspectival Subjectivity:- Phenomenal conscious states are perspectival.

3. The Problem of Mechanism:- In the natural world the generation of higher-level states or processes is grounded in mechanism

that explains the generation of the higher-level items. Thus, if phenomenal consciousness is a natural phenomenon, there should be a mechanism that provides an explanatory link between the subjective and the objective. Fully objective mechanism could not close the gap between the objective and subjective. The question here is that how doing objective, physical changes in the brain generate subjective feelings and experiences.

4. The Problem of Phenomenal Causation:- Phenomenal consciousness has effects on our behaviour. The problem is that, how can the phenomenal character of the pain experiences make any difference to what we say or do.

5. The Problem of Super Blind Sight:- The problem here is, how is the case of super blinding to be treated by philosophical theories of phenomenal consciousness.

6. The Problem of Duplicates:- A philosophical Zombie is a molecule-by-molecule duplicate of a normal human being but differs from him who lacks phenomenal consciousness. There is

no internal phenomenology. Phenomenal consciousness is neither identical with nor metaphysically determined by functional organizations. This is the problem of functional duplicates. The question is that if functional duplicates without any phenomenal consciousness are possible, what does thus tell us about phenomenal consciousness.

7. The Problem of Inverted Spectrum:- Inverted Spectrum argument holds that one's usual experiences are systematically inverted with respect to those of his fellows. The person who possesses it or the other does not know this peculiarity. The person's experiences are phenomenally subjectively different from the experiences of others, but functionally same. The phenomenal quality of that person's experience is not a matter of its functional role. Any philosopher who wants problem of the inverted spectrum cannot accept this idea. This problem is a challenge to the physicalists.

8. The Problem of Transparency: - Visual experience is transparent. What is it about phenomenal consciousness that is responsible for its diaphanous character?

9. The Problem of Felt Location and Phenomenal Vocabulary:

10. The Problem of Alien Limb: - This problem arises out of reflection as a psychological disorder. The questions here are, how does one get to be involved in his own feelings? What is the relationship of the self to the phenomenology of feeling? etc.

Searle terms the mind-body problem, as not problematic. According to his Biological Naturalism's view, "Mental events and processes are as much part of our biological natural history as digestion, mitosis, meiosis or enzyme secretion. Intentional states stand in causal relation to the neuro-physiological states and intentional states are realized in the neuro-physiology of the brain".[5] He claims that mental states causally supervene on brain states. But he is uncomfortable about the claims that supervenience is originally a logical relation and he worries that this causal form may be conflated with the logical one. Theories of supervenience are typically reductionistic. Searle's reduction is one of various types. Theoretically it aims at some ontological reduction. But he defends a form of causal reduction by holding that consciousness is causally reducible to the brain processes. Searle tries to avoid both materialism and dualism. He

thinks that dualism and materialism share the assumption that give rise to the mind - body problem.

According to Searle, the nature and structure of consciousness is the serious issue in the philosophy of mind. Searle has a negative and a positive project concerning the nature of consciousness. The negative project is to show that current work as the nature of the mental is conceptually confused. His refutation centres on the Chinese room thought experiment. His positive project gives a non-reductionistic account of consciousness that is agreeing with network. He claims that subjectivity is ontologically essential to consciousness.

Searle enumerates seven features of human consciousness, as noted below:[6]

1. Consciousness manifests itself "in a strictly limited number of modalities". In addition to the traditional five, there is the sense of balance, bodily sensation, which includes 'proprioception', that is, the feeling of how one's body and parts of one's body is oriented, and the stream of thought.

2. Consciousness is unified with respect to both temporal continuity of impressions and the spatial unity of various impressions. Yesterday, today and tomorrow are all part of the same temporal system; here, there and the other place are part of the same spatial system; and the two form a spatio-temporal system.

3. Consciousness is a necessary condition for intentionality and typically intentional, that is directed at objects. All intentionality is aspectual. This is easiest to see in visual perception; things are always perceived from a point of view and as being things of a certain kind. A related aspect of intentionality is the fact that consciousness has focus and this is turn gives rise to the difference between figure and ground in Gestalt psychology. Also, attention is directed to some contents of consciousness more than to others. The driver of a car may be paying more attention to his vacation plans than to his driving, yet both are simultaneously conscious.

4. Consciousness has a "subjective feeling". There is a difference between human consciousness and what it is like to be a bat or a porpoise.

5. Although it is not a special feeling, there is an air of familiarity about the objects that a person is conscious of even the unfamiliar is familiar in the sense intended here. A person walks into an office building and expects it to have elevators, the elevators are found in a fairly predicable location; they are easy to operate; and the door opens to a floor, which though never seem before, has enough familiarity about it that the appropriate room is discovered. There is a sense in which people have knowledge of the world in a way that is more general than any particular bit of knowledge about it. The world is not strange and mysterious. Surrealist artists with their drooping watches and ever-ascending-and-descending staircases highlight this fact. There is another kind of familiarity with the world: people know generally where they are and what time it is, in relation to many other places and times. Searle calls this general spatial and temporal familiarity with the world "situatedness".

6. This is what Searle calls "overflow", the feature that has some specific perception or belief connect to other beliefs seemingly without and in some elaborate, not fully articulatable web: these east Texas trees are pines, like the pines of California, but not exactly; they flourish is wet areas not quite marsh, etc.

7. Clearly many states of consciousness are suffused with a mood even though a mood "never constitutes the whole content of conscious state". Construed broadly enough, every state of consciousness has some mood or other. For most people there is a permanent low level of pleasure connected with consciousness, and for some, there is a permanent low level of displeasure.

Searle's main thesis is that "every unconscious intentional state is at least potentially conscious". He claims that unconscious mental states are intrinsically intentional. All intrinsically intentional states are aspectual. Unconscious mental states exist only as neuro-physiological events. So the unconscious must be capable of being brought into consciousness by the underlying neuro-physiological events.

In sharp contrast to the above, Churchland cites the following as the main puzzles of consciousness from the neural-net theory point of view.[7] In his view, consciousness is a real and an important mental phenomenon:

1. Consciousness involves short-term memory. Consciousness typically displays a sense of how one's current experience and bodily position figure in time, in the unfolding sequence of events that make up the temporally-extended world. Such a sense requires at least some cognitive grasp of event that preceded the current moment, and that will require some memory - some short term memory, at a minimum.

2. Consciousness is independent of sensory inputs. One can close one's eyes, plug one's ears, and otherwise set about to minimize or shut down all of the many forms of sensory input, but one's consciousness will not thereby be extinguished. One can daydream about the future, search through one's memories, or address and pursue a complex problem in one's imagination, all without input from the senses. Prolonged sensory deprivation, no doubt, has deleterious effects on the quality and coherence of

one's consciousness, as experimental tests have shown. Yet the mere existence of consciousness, at least for short periods, does not seem to be dependent on one's having any sensory inputs.

3. Consciousness displays steerable attention. Consciousness is something that can be directed or focused on this topic instead of that, on these things rather than those, on one sensory pathway over another, even if one's external sensory perspective on the world is held constant.

4. Consciousness has the capacity for alternative interpretations of complex or ambiguous data. Once one's attention is fixed, on a particular usual scene, for example, a conscious person is still able to generate and explore competing interpretation of the contents or the nature of that scene, especially if the scene is in some way confusing or problematic.

5. Consciousness disappears in deep sleep. Falling into a deep sleep is the single most common way in which one loses consciousness. We would like to know why one ever loses it, and what happens when one does.

6. Consciousness re-appears in dreaming, at least in muted or disjointed form. The sort of consciousness one has during dream is decidedly non-standard, but it does appear to constitute another instance of the same phenomenon. We would like to know how it differs, and why it should exist at all.

7. Consciousness harbours the contents of the several basic sensory modalities in this single unified experience. A conscious individual appears to have not several distinct consciousnesses, one for each of the external senses, but rather a single consciousness to which each of the external senses contributes thoroughly integrated parts. How, and in what sense, those parts are assembled is something we would like to understand. The question is how to explain this from a neurobiological point of view.

Daniel Dennett's Multiple-Drafts view takes consciousness as the last surviving mystery and argues that mysteries about consciousness can be dissolved with the help of empirical and conceptual advances in cognitive science.[8] Dennett rejects the concept of phenomenal consciousness. For him, there is no such theory. He argues that the very idea of qualia is subtly confused and incoherent.

About phenomenal consciousness all derive from the availability of states to linguistic description. Thus conscious states are defined as those, which are available to higher-order description. Dennett supports the idea of HOT theorists to explaining consciousness in terms of a set of mental states, which are themselves non-conscious, whose nature is well understood. William Seager subjects Dennett's theory of consciousness to criticism calling it as a cognitive pandemonium. Dennett explains brain as a system composed of multiple relatively independent agents. A large number of relatively independent functionally specified agents reside within the brain. For Dennett, what makes a contentful state conscious is ' cerebral celebrity'. This is nothing more than the temporary control of the whole system, especially the vocal output, or speech, subsystem and the memory sub-system. In short, he tries to intentionalize consciousness and also to explain it by transforming phenomenal consciousness into an illusion. Dennett accepts that consciousness seems stream like or continues but thinks that it is a crashing mistake to think that is really so. His theory of consciousness is stated as follows:

There is no single, definitive "streams of consciousness" because there is a not central Head Quarter, no Cartesian Theatre where " it all comes together" for the personal or a central meaner. Instead of such a single stream (however wide) there are multiple channels in which specialist circuits try, in parallel pandemonium, to do their various things, creating multiple drafts as they go. Most of these fragmentary drafts of "narrative" play short-lived roles in the modulation current activity but some get promoted to further functional roles, in swift succession, by the activity of a virtual machine in the brain. The seriality of this machine (its "von Neumannesque" character) is not a "hard-wired" design feature, but rather the upshot of a succession of coalitions of these specialists.

According to Flanagan, consciousness is a natural phenomenon.[9] He presents a view of consciousness, which he calls constructive naturalism. In his view, consciousness is neither miraculous nor mysterious. By constructive naturalistic theory, Flanagan drew the picture of consciousness as a heterogeneous set of events and processes that share the property of being experienced.

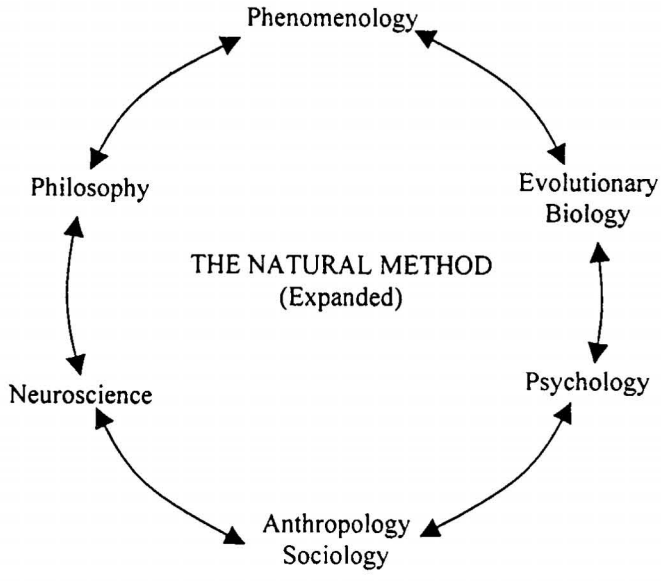

Figure 1:The Natural Method

The theory denies that consciousness is, as consciousness seems at the surface. Consciousness has a complex structure. Acquiring this complex structure needs coordination of phenomenological, psychological and neural analyses. The theory is neuro-philosophical because it tries to make a naturalistic metaphysics of mind in the understanding of how the brain works. The mind is brain, a massively well-connected system of parallel processes interacting with each other from above and below. The theory claims to provide an explanation of the gap between the first-person way and the way it can be described, from an objective point of view. For him, mind and brain is one and the same thing seen from two different perspectives.

2.2 FROM CLASSICAL REDUCTIONISM TO NEW WAVE REDUCTIONISM

The problem of consciousness has become prominent after the Tuscan conference, 1984. In the realm of the mind- body problem, there are two kinds of claims. Reductionits claims that mental states and properties can be explained in physical terms. They hold that we can reduce one physical theory to another physical theory. Reductionism is the lower-level explanation of the higher-level phenomena. On the other hand, non-reductionists hold the view that consciousness is something over and above bodily coordinates, which is something, cannot be reduced. That is, mind cannot be reduced into brain states.

Ernest Nagel (1950) is the first person that started the debate on reductionism.[10] For the past three decades, Nagel's positivistic model has dominated philosophical discussion of reduction and reductionism. His account of reduction is that it is a relation between two scientific theories. This is a deductive absorption of the target theory by a wider base theory supplemented with appropriate bridge laws. In his model, bridge laws are the reductive links between the target theory and the base theory. Nagel did not claim that the bridge

laws be bi-conditional in form. He insisted the derivability of the laws of the reduced theory from those of the base theory. He needed bridge laws in enough number and strength to enable the derivation. Bridge laws enable the derivation. Bridge laws enable the reduction of one theory to other. They are crucial reductive linkages and their form and availability are critical factors in the discussion of mind-body reduction. Almost all materialist views of mind are reductionist views. This type of classical reductionism holds that mental properties are reducible to physical properties. That is, there are no non-physical properties in this world. All properties are ultimately reducible to the properties in fundamental physics.

Nagel's idealistic reduction is primarily between two scientific theories: the target theory that is up for reduction and the theory that serves as its reduction base. The relation of reducibility is logical derivability. The symbolic representation is:

For T2 to be reducible to T1, the laws of T2 must be derivable from laws of T1.

This shows that T2 is implicitly contained in T1.

T2 laws:

1. For anything x, if x has property F, x has property G (F→G).

'F' and 'G' are expressions of T2 that are not part of T1 vocabulary. To derive (1) from T2, we need bridge principles correlating the two vocabularies. Bridge principles are:

2(a). For anything x, x has property F iff x has property F*(F↔F*).

2(b). Fro anything x, x has property G iff x has the property G*(G↔G*).

F* and G* are predicates of the base theory T1. T2-law can be easily derived from the T1 statement.

3. For anything x, if x has property F*, x has property G* (F*→G*)

This means that if (3) is a law of T1, our T2 law, (1) can be reduced to T1. Then, Nagel's reduction is stated as follows:

T2 is Nagel's reduction to T1, just in case all laws of T2 are logically derivable from laws of T1 augmented with appropriate bridge principles' connecting the expressions of T2 with expressions of T1.

Some of the bridge principles involved in reduction, may be definitions that are largely grounded in meaning and others may be empirical correlation laws. Mind-body reduction cannot be achieved by definitional or semantical reduction. Mind-body reduction needs psychophysical laws as bridge principle, laws correlating mental and physical properties. Reduction is therefore deduction.

Searle distinguishes five different kinds of reductionism, which are given below:[11]

1. Ontological reduction holds that objects of certain types can be shown to consist in nothing but objects of other types. For instance, genes can be shown to consist in nothing but DNA modules.

2. Property ontological reduction: is a form of ontological reduction but it concerns with properties. For example, heat is nothing but the mean kinetic energy of molecule movements.

3. Theoretical reduction: deals with theories. From the scientific viewpoint, theoretical reductions are mostly interesting if they enable us to carry out ontological reduction. This reduction is

primarily a reduction between theories. This claims that the reducing theory is nothing but a special case of the reducing theory. The best given example is that the reduction of the gas laws to the laws of statistical thermodynamics.

4. Logical or definitional reduction: is a relation between words and sentences, where words and sentences referring to one type of entity can be translated without any residue into those referring to another type of entity.

5. Causal reduction: is the reduction between two types of things that can have causal powers. The causal powers of the reduced entity are shown to be entirely explainable in terms of the causal powers of the reducing phenomena.

Searle has not taken theoretical reduction and logical reduction seriously. He supports causal reduction. His account of mind-brain relation is based on causal reduction. In his view, neurobiological processes cause mental features. There is no downward causation. He argues that causal reduction leads to ontological reduction. But we cannot reduce consciousness ontologically. Because the consciousness is still irreducible, the mind-body problem is remaining unsolvable.

Following Nagel, J. Kim attempts to locate mind in the physical world.[12] As against the classical Nagelian reductionism where it is primarily a relation between theories, Kim it is a relation between sets of properties. Such types of mental states are identified with types of brain states. Kim identifies three questions considering the bridge laws. The first one is the availability question, which has risen explicitly by the multiple realization argument. The main point is the observation that any higher-order property P has multiple realizers in lower-order properties Q1, Q2.... So that it is not possible to provide P with a single lower-order correlate Q to yield a biconditional bridge law of $P \leftrightarrow Q$. Thus, P is irreducible to some single lower-order property. This points out that the need of Biconditional Bridge laws cannot be satisfied. The second one is the explanatory question. Nagelian derivational reduction of psychology with bridge laws can be taken as unexplained auxiliary premises. It is like taking mind-body supervenience as an unexplained brute fact. Nagelian reduction does not give us reduction that explains. The third one is the ontological objection, which argues that through a derivational absorption of the laws of the reduced theory by the reducer. This Nagelian reduction, gives a simplified set

of laws. Simplicity may be largely illusory. Nagel does not give ontological simplification. It fails to give meaning to nothing over and above that rightly associates with the idea of reduction. The functional model of the reduction is:

To reduce a property M to a domain of base properties, we must first 'prime' M for reduction by construing it relationally or intrinsically. This turns M into a relational/extrinsic property. For functional reduction we construe M as second-order property defined by its causal role.

A functional construal of property to be reduced, M, serves as an explanation of why the M-P correlation holds and as a ground for the identity M=P, and it gives a satisfying responses to both the explanatory and the ontological question that arise for bare bridge laws unexplained by identities. The severe step in the process of the course is the fundamentalisation of the proportion to be reduced. The possibility of fundamentalisation is necessary condition of reduction.

The Emergentists would have denied the functionalizability of the properties they claimed to be emergent. In their view, these

properties are intrinsic properties with their own distinctive causal powers that are irreducible to those of the processes from which they emerge. The reason for the irreducibility is often in epistemic terms. That is, from a complete knowledge of the basal condition it is not possible to predict that properties will emerge at the higher level.

Kim argues that the functionalist conception of mental properties is required for mind-body reduction.[13] It is necessary and sufficient for reducibility. Mind-body reductionism and functionalist approach to mentality share the same metaphysical fate. If we argue with the functionalization of all mental properties, this will solve the problem of mental causation.

Current research work on Cellular and Modular Neuroscience amply demonstrates how to go beyond Kim's model of functional reduction making thrusts in two key areas. (1) Multiple realizability (2) physical causation. Bickle, for example, calls the first as a myth and makes an effort to reduce causality to a more a biological level.[14] The experimental studies in memory consolidation link amply demonstrate how the phenomenon of plasticity gets explained in sharp contrast to PDP approach, which is less biological. Extending this approach this

cellular and molecular approach claims to solve the hard problem of consciousness as well.

2.3 FROM CHURCHLAND'S INTERTHEORETIC REDUCTIONISM TO NEW WAVE REDUCTIONISM

Following Popper and Feyerabend, Paul M. Churchland proposes a second type of inter-theoretic reductionsim, which based on co-evolution of both theories. Popper contributed the thought that reduction must also explain why the reducing theory corrects the reducing theory (falsificationism).[15] Feyerabend denies that reduction involves deduction and insisted on 'incommensurability' of theories.[16] On the positive side, they lie in a continuum without any sharp separation. While the classical reductionism subscribes to the positivistic view of science, the inter-theoretic reductionism has the sanction of current post-positivistic philosophy of science inaugurated by Kuhn and Feyerabend. The most noteworthy feature of this approach is the pluralism or the proliferation of theories. This is secured as a kind of reduction of cognitive science to philosophy of science. Thus one theory need not eliminate the other, but it replaces it

as science advances. On the negative side, one theory 'replaces' or eliminates the other.

Following the above, and mixing it with Supple's structural view of theory (which denies sentential basis of theories replacing it with set-theoretical ingredients of a model) ascending to which intertheoretic reduction is not to be conceived as merely 'syntactic' but semantical in which one can derive the 'semantic analogue' of the given theory, now Churchland developed his account of reductionism in schematised below:

T_B (Boundary conditions/limiting assumption) logically entails

T_B (a set theorem of [restricted] $TB_)$

e.g. (x) (Ax $\supset$ Bx), (x)((Bx & Cx)$\rightarrow$Dx) which is relevantly isomorphic to (analogue to)

T_R

e.g. (x) (Jx$\rightarrow$Kx), (x) ((Kx & Lx)$\rightarrow$Mx)[17]

The third new wave reduction comes with Patricia's defence of reductionism.

Some thinkers are trying to explain some psychological phenomena in neurobiological terms. The scientific developments within the last three decades changed the status of mind brain questions. Three major developments are:

1. New scientific techniques have made possible very detailed structural and functional disposition of nervous systems at many levels of organisations. This helped to dislodge certain misconceptions about the brain. [18]

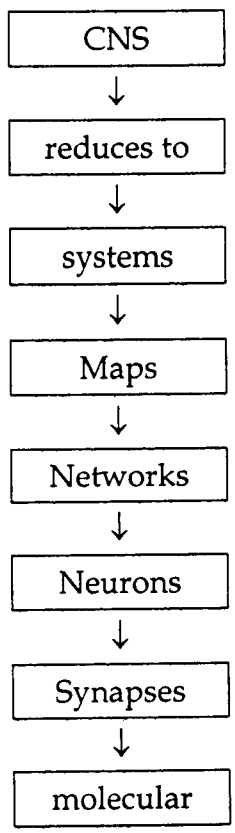

Figure 2: The schematic illustration of levels of organization in the nervous system

2. Subtle and sophisticated behavioural studies in experimental psychology and ethology have greatly deepened our understanding of what exactly are the psychological capacities, thereby classifying the molar phenomena for which neurobiology seeks mechanism.

3. Computer modelling approaches permit effective simulation of neural networks have led to computational discoveries concerning how networks of neuron like units, with synapse like connection and a parallel organisation can accomplish certain complex tasks such as associative memory and pattern recognition.

Scientific understanding of mental phenomenon in terms of underlying brain mechanisms is reductionist. Reductionist strategy means to explain macro-level phenomena in terms of micro-level phenomena. The rationale behind this research strategy is that if we want to understand how a thing works, we have to understand its basic components and how they are to be organised to constitute a system.

According to P.M. Churchland, as we have seen before, reductionist strategy is not a purely bottom-up strategy.[19] In neuroscience, we cannot understand everything about the basic molecular, neuron and synapse and then reach at the uppermost level psychological processes. Reductionist research strategy does not mean that there is something disreputable, unscientific. The scientific understanding of mental phenomena in terms of underlying brain mechanisms is reductionist approach. Understanding the neurobiological mechanism is a necessity to understand how we see, think, and make decisions.

Reductionism does not imply the vanity or unreality of macro-level phenomena that are successfully explained, and hence reduced by micro-level phenomena. For example, explanation of thermodynamics in terms of statistical mechanics, and the explanation of heritability of phenotypic traits in terms of DNA, RNA and protein synthesis. P.S. Churchland draws five classes of objections to reductionist research, in order to refute each one of the following objections.[20]

1. Reductionism is impossible because the goal is absurd (incoherent). It is absurd to talk of the brain seeing or feeling, just

as it is absurd to talk of the mind having neuro transmitters or conducting current. This categorical absurdity undercuts the very possibility that science could discover that feeling pain is activity in neurons in the brain. This is not correct.

2. It is impossible because of multiple realisability. If a macro phenomenon can be the outcome of more than one mechanism, then cannot be identified with any one mechanism, and hence reducing it to the underlying micro phenomenon is impossible. This is not again impossible.

3. Impossible if the brain causes consciousness. John Searle's strategy is that though the brain causes conscious status, any identification of conscious states with brain activities is unsound. Traditionally believed that the best the reductionist can hope for one correlation between subjective states and brain states. Although correlation can be evidence for causality, they are not evidence for identity. Searle supports the traditional objection by saying that whereas α-β identification elsewhere in science reveals the reality behind the appearance. In the case of awareness, the reality and appearance are inseparable. There is

no reality to awareness except what is present in awareness. Therefore, there is no reduction to be had. Churchland responds by saying that Searle fails to appreciate why scientists ever opt for identifications rather than always going with mere correlation.

4. Impossible because consciousness is a virtual machine. This is the view of Dennett. He thinks that as far as the nature of consciousness and cognition is considered, the study of brain itself is a waste of time. His claim is that human become conscious as they acquire language and learn to talk to themselves. In this transformation a parallel machine (the neural networks of the brain) simulates a serial machine (operation are performed one at a time, in a sequence, according to rules, which may be recursive). He says that by acquiring a language and then learning to speak silently to oneself, one creates a consciousness virtual machine in the brain. He claims that nonverbal subjects are not aware in the way a fully verbal human is aware. Patricia's view is that this response is tangential to the earlier criticisms. The issue is whether preverbal children

and animals can be conscious of colours, sounds, smells, motion, feeling pain and so on, in rather like the way a verbal subject in conscious of them. The second criticism is that Dennett wrongly assumes that performance is all that needs explaining reports of conscious experience in tantamount to explaining conscious experience itself. The third one is that we cannot assume that consciousness involves only one operation at a time. The fourth is that recurrent neural nets are powerful enough and complex enough to manage various self-monitoring subsystems in the nervous system.

5. Impossible because the brain is not smart enough. Patricia concludes that to understand mental phenomena in the context of computations cognitive neuroscience is potentially revolutionary. Our commonly accepted ideas about reasoning, free will, the self, consciousness and perception have been reconfigured. The new convergence of research in neuroscience, psychology and experimental modelling holds out the promise that at least some of the basic principles will be understood.

Patricia's views thus fall well within the ambit of fourth stage of reductionism, which is called new wave reductionism or New Wave Meta science. This view advocates that mind can be reduced to molecular structure of neurons. This is called 'reductionism in practice', and is ruthlessly reductionistic within cellular and molecular neuroscience. The prime example here is: Memory = molecular equivalent of LTP (long-term potentiation link that is correlated, but not identical).

The last one effectively meets all arguments against reductionism and is therefore called 'ruthlessly reductionistic'.

As against reductionism, the non-reductionists claim that consciousness is something over and above bodily coordinates, something that cannot be reduced. That is, we cannot reduce mental states to brain states. Physicalism supports the view that consciousness is reducible.

The most influential version of physicalism is non-reductive physicalism. It holds that mental properties along with other higher-level properties constitute an autonomous domain that resists

reduction to the physical domain. The kind of non-reductionist view has served as an influential philosophical foundation to cognitive science, which forms an autonomous and irreducible science with its own distinctive vocabulary and methodology and not answerable to the methodological or explanatory constraints of the more fundamental sciences, such as Physics and Biology. Hence, the most widely accepted form of physicalism today combines ontological physicalism with property dualism.

Davidson's anomalous monism is a version of non-reductive physicalism.[21] Any argument for this theory is an argument against the possibility of mind-body reductionism. Type physicalism is an argument based on multiple realizability of mental properties. The thesis is that any mental property can have diverse physical realization in a wide variety of biological organism.

M is a mental property and P_1, P_2... are its physical realizers. If P_1 is a realizer of M, conditional must be (PR_1) Pi→M.

Each physical realizer must be lawfully sufficient condition for the mental property it realizes. Each of P_1, P_2.... is sufficient for M,

cannot be necessary for it. None of these Ps is a nomic coextension of M. So we cannot arrive at our reductive goal, the identity (1) Pi=M.

Since (1) entails (PR_2), and therefore if (PR_2) does not hold, (1) cannot hold.

An immediate and natural response to this anti-reductionist argument is the disjunction strategy. Antireductionists reply to this to question the property of UP as a legitimate property. The ontological picture of contemporary debate on the mind-body problem presents the world as a multilayered hierarchy consists of levels of entities and their characteristic properties. The bottom level consist the most basic particles, out of which all matter is composed. Above this level, there are levels of atoms, molecules, cells and organisms. Only at the level of organisms, mental properties emerge. Physicalists assume that higher-level properties are dependent on or determined by their lower level properties. The asymmetric transitive part-whole relation produces a hierarchy of levels or tiers of entities. Some physicalists claim that higher-level properties of things are supervenient on its lower-level properties. Supervenience is a relationship that gives us determination, dependence without reduction. Supervenience seems consistent with

irreducibility. Supervenience suffices for the purposes of the non-reductive physicalist if it is consistent with both reducibility and irreducibility. The formulation of supervenient physicalism is:

(SP_1) mental properties supervene on physical properties is that for every mental property M, if something has M, it has a physical property P such that necessarily if anything has P it has M.

Another equivalent version is:

(SP_2) mental properties supervene on physical properties in that if any x (in any possible world), and y (in any possible world) have the same physical properties (in their respective worlds), then x and y have the same mental properties (in those worlds).

Functionalists believe in mind-body supervenience. They are supervenient physicalists too. For them, if two organisms are physically indistinguishable, they must be functionally equivalent and realize the same psychology. Supervenient physicalism is a form of non-reductive physicalism.

Emergentism is also a form of non-reductive physicalism. It consists of three doctrines. They are:

(1) Ontological physicalism : all that exists in the space-time world is the basic particles in physics and their aggregates.

(2) Property emergence: when aggregation of mental particles attains an appropriate level of structural complexity ("relatedness") genuinely novel properties emerge to characterize these structured systems.

(3) The irreducibility of the emergent: emergent properties are irreducible to, and unpredictable from, the lower-level phenomena from which they emerge.

Downward causation is the causal influence exerted by higher-level phenomena as the process going on at lower level. It is a fundamental commitment of emergentism. Non-reductive physicalists are realists. For them, mental properties are irreducible to their underlying physical or biological properties.

The main obstacle of mind-body reduction is qualia-the phenomenal, qualitative character of our experiences. Qualia seem to be intrinsic. In the process of reduction from mental to physical properties, we may lose the intrinsic subjective character of our

mentality. The problem of qualia and the problem of mental causation are the two profound and difficult issues in the philosophy of mind.

We shall examine most important types of irreducibility arguments in next section. There are four 'phenomenal types' and one 'phenomenality type'.

2.4. SOME IRREDUCIBILITY ARGUMENTS

Thinkers, such as Nagel, Jackson, Searle, Chalmers (phenomenal) and Ned Block (phenomenalist) claim that phenomenal experience can never be reduced. Their qualia-based arguments concern with the explanatory and descriptive poverty of any possible neuroscience.

For Thomas Nagel, the scientific view of the world is the view from nowhere.[22] But, there are some facts that are invisible to science. They are inexplicable by scientific means. There are perspectival and subjective facts. The subjective feel or the phenomenality of the experience lies beyond the scope of science. For Nagel, at present we have no conception of what an explanation of the physical nature that will be applicable to the explanation of the mental phenomena.

In his view, the phenomenological features of our experiences or qualia constitute a problem for the reductive apparatus of any materialistic neuroscience. For this, he has given three arguments:

1. It is impossible to exclude the phenomenological features of experience from a reduction, in the same way that one excludes the phenomenal features of an ordinary substance from a physical or chemical reduction of it-namely by explaining them as effects of the minds of human observers. Nagel claims that subjective qualia are unique in being immune from the sort of reductions found elsewhere in science.

2. The intrinsic character of experiences, are essentially accessible from only a single point of view, the subjective point of view of the experiencing subject. The proportion of physical brain states is accessible from a variety of entirely objective points of view: (a) I, directly know the qualia of my sensations by introspection, as elements of my conscious self. (b) the properties of my brain states are not directly known by me, by introspection, as elements of my conscious self. (c) the qualia of my sensation is not equal to the proportion of my brain states.

1. Fa

2. ~Fb

3. $a \neq b$

3. The third argument is the character of the experiences enjoyed by the bat. The claim is that, no matter how much one knew about bat's neuro-physiology and its interaction with the physical world one could not know what it is like to be a bat.

Nagel claims that an organism has conscious mental states if and only if there is something that it is like to be that organism. He calls this as the subjective character of experience. For him, it is not analyzable in terms of any explanatory system of functional states or intentional states. It is unanalyzable in terms of causal role also. His argument is that the existence of myness facts concerning my own experiences and perspectives on the world does not carry conviction. If the facts of experience are accessible only from one point of view, it is a mystery that how the true character of experiences could be revealed in the physical operation of that organism. Nagel argues that we must face with a general difficulty about psychophysical reduction. In other areas, process of reduction is a move in direction of greater objectivity

toward a more accurate view of the real nature of things. If the subjective character of experience is fully comprehensible only from one point of view, then any shift to greater objectivity does not reach to the real nature of the phenomenon. Without subjective experience, objective reality remains incomplete.

Nagel gives an example of a bat. The essence of the belief, that bats have experience, is that there is something that it is like to be a bat. Most bats perceive the external world primarily by sonar or echolocation, detecting the reflection from the objects within range of their own rapid subtly modulated high frequency shrieks. Its brain is designed to correlate the outgoing impulses with the subsequent echoes and the information thus acquired enables bats to make precise discrimination of distance, size, shape, motion and texture comparable to those we make by vision.

Nagel's view is that only someone who has echolocation experiences can know what it is like to be a bat. Therefore, there are some facts, which can only be known from a certain subjective perspective. We cannot know what it is like to be a bat since we lack the right kind of imagination to represent ourselves the bat's

experience. The physical facts do not give us the knowledge about what it is like to be in a state.

Frank Jackson presents a variation of the above argument.[23] It is designed to show that the subjective aspect of the experience is genuine fact about the experience, which cannot be captured by either physicalist or functionalist terms. Jackson imagines the case of Mary, who has lived all her life in a black-and-white room. She is a scientist and a famous physiologist too. She knows everything about colour that is, physics, physiology, functional organization and intentional properties involved in colour vision. But she does not know what an experience of red is like. Jackson argues that knowledge of physical, functional and intentional facts does not give Mary knowledge of all the facts. These facts cannot be reductively explained in terms of such facts.

The knowledge does not follow the physical knowledge alone. The physical facts do not tell us what their conscious experiences are like. The physical facts do not logically entail the facts about conscious experience.

Mary is a brilliant scientist who is forced to investigate the world from a black-and-white room via a black-and-white television monitor. She is an expert in the neurophysiology of vision and acquires all the physical information about what goes on when we see ripe tomatoes, or the sky, and use terms like red, blue and so on. She discovers just which wavelength combination from the sky stimulates the retina, and exactly how this produces via the central nervous system. The knowledge argument claims that the physical facts do not exhaust all the facts. It holds that there is some knowledge about experience, which is acquired only by undergoing the relevant experience itself. This argument is closely related with zombies or inverted spectra argument. Both argue that phenomenal facts cannot entail from physical facts.

Churchland proposes a strong criticism against Jackson, which are given in three statements.[24]

a. Firstly, that the knowledge argument contains a defect that it is simplicity itself. The argument that equivocates on the sense of 'knows about'.

b. Second objection is that there must be something wrong with the argument, for it proves too much. In other words, if Mary received a special series of lectures over her black and white television from full-blown dualists, explaining the "laws" governing the behaviour of "ectoplasm" and telling her about qualia. This would not affect the plausibility of the claim that on her release she learns something. Therefore, if the argument works against physicalism, it works against dualism too.

c. Thirdly, Mary could not even imagine, what the relevant experience would be like, despite her exhaustive neuro-scientific knowledge, and hence must still be missing certain crucial information.

The materialists argue that even though there is indeed a genuine before-after difference in Mary, it is only a matter that she is thinking in new ways. The deflationist claims that there is no reason to credit Mary with anything, but material concepts. Dennett defends the first deflationist strategy. In his view, Mary would not learn anything new when she comes out of the room. Because she has exactly complete information, she has nothing to learn. David Papineau holds

that Mary's new experience will enable her to re-create the experience in imagination, and in addition to classify new experiences introspectively. Mary is changed through getting two new powers of imagination and introspection.

Searle considers the consciousness as irreducible.[25] Consciousness fails to be reducible, not because of some mysterious feature, but simply because by definition it falls outside the pattern of reduction that we have chosen to use for pragmatic reasons. Like solidity, consciousness is a surface feature of certain physical systems, pretheoretically. However, unlike solidity, consciousness cannot be redefined in terms of an underlying microstructure. And the surface features then treated as mere effects of real consciousness, without losing the point of having the concept of consciousness in the first place.

He argues that there is a standard argument to show that consciousness is not irreducible in the way that heat, etc., are. For him, views of Nagel, Kripke, and Frank Jackson are decisive, though it is frequently misunderstood in ways that treat it as merely as epistemic and not ontological. The irreducibility argument is sometime treated as

an epistemic argument to the effect that, for example, the sort of third person, objective knowledge we might possibly have of a bat's neurophysiology would still not include the first person, subjective experience of what it feels like to be a bat. However, here the point of argument is ontological. It is a point about what real features exist in the world and not, except derivatively, about how we know about those features. He gives the following example.

"Suppose what facts in the world make it the case that you are now in a certain conscious states such as pain. What facts in the world correspond to your true statement "I am now in pain?" There seem to be at least two sorts of facts. Fist and most important there is the fact that, you are now having certain unpleasant conscious sensations, you are experiencing theses sensations from your subjective, first person point of view. It is these sensations that are constitutive of your present pain. But, the pain is also caused by certain underlying neuro physiological processes consisting in the large part of patterns of neuron firing in your thalamus and other regions of your brain. Now suppose that we tried to reduce the subjective, conscious, first person sensation of pain to the objective, third person patterns of neuron

firings. Suppose we tried an ontological reduction that the pain is really 'nothing but' the patterns of neuron firings, then the essential features of the pain would be left out..."[26]

For Searle, reducing consciousness is different from reducing perceivable properties such as heat, sound, colour, solidity, liquidity etc. In the case of consciousness, we have the distinction between the physical processes and the subjective mental experiences. Here, the phenomena that interest us are the subjective experiences themselves; there is no way to carve anything off. In the case of heat, there is a distinction between the subjective appearance on the one hand and the underlying physical reality on the other. However, we cannot make that sort of appearance-reality distinction for consciousness, because consciousness consists in the appearance of themselves. Where appearance is concerned, we cannot make the appearance-reality distinction because the appearance is the reality.

In other words, consciousness is not reducible in the way that other phenomena are reducible, not because the pattern of facts in the real world involve anything special, but because the reduction of other phenomena depended in part on distinguishing between 'objective

physical reality, and mere 'subjective appearance' and eliminating the appearance from the phenomena that have been reduced. But, in the case of consciousness its reality is the appearance. Hence the point of reduction would be lost if we tried to carve off the appearance and simply defined consciousness in terms of underlying physical reality. The pattern of our reduction depends on rejecting the subjective epistemic basis for the presence of a property. Consciousness is exception; the reason is that the reductions that leave out the epistemic bases, the appearances cannot work for the epistemic bases themselves. In such cases, the appearance is the reality. It also means that evolutionary processes produced nervous systems capable of causing and sustaining subjective conscious states.

David Chalmers defends naturalistic dualism, epiphenomenalism, functionalism and antireductionism.[27] He extends Nagel's basic idea that consciousness is not tractable neuro-scientifically. He defends a double aspect theory, which stipulates that information have both physical and experimental aspects. For him, mental state is a phenomenal state, a psychological state or a hybrid of the two. The facts about consciousness are not physical facts. Chalmers believes that

consciousness supervenes only naturally on the physical world. Chalmers argues that almost all states and properties of the natural world supervene logically on the microphysical states of the world. In contrast, he holds that phenomenal consciousness does not supervene logically on the physical world. Chalmers considers phenomenal consciousness as a hard problem, which cannot explain from within a physicalist or functionalist viewpoint. He insists that materialism is false. He offers two thought experiments.

First is the example of the alleged logical possibility of a zombie world. It means a world physically identical to ours, but in which there are no conscious experiences at all. In such a world, everybody is a zombie. The states of these creatures lack phenomenal properties or qualia. His twin is physically identical to him and will be certainly identical to him functionally. In the real world, it is likely that any replica of him would be conscious. For this reason, it is most natural to imagine unconscious creatures as physically different from conscious ones. Chalmers presents this experiment as a case of logical supervenience in which conscious experience arises from fine-grained functional organization.

The second experiment is the inverted spectrum argument. One can imagine a physically identical world in which conscious experiences are inverted. From this, if one has red experience, its inverted twin has a blue experience and vice versa. The rest of twin's colour experiences are systematically inverted with respect to the former, in order that they cohere with the red-blue inversion. To achieve such an inversion in the actual world, we would need to rewire neural processes in an appropriate way, but as a logical possibility, it seems entirely coherent that experiences could be inverted while physical structure is duplicated exactly. This view has been criticized on the ground that human colour space is asymmetrical in a way that disallows such an inversion.

Chalmers replies that there does not seem to be anything incoherent about the notion of such dissociation, though it is admittedly an odd idea. Furthermore, instead of mapping red precisely onto blue and vice versa, one can imagine that these are mapped onto slightly different colours. One more reply is that even if our own colour space is asymmetrical, there certainly could be creatures whose color space is symmetrical. Both possibility of inverted spectra and

possibility of zombies establish that consciousness fails to supervene logically.

Thus, Chalmers argues that no reductive explanation of consciousness can be succeeded. Any account of physical processes purported to underlie consciousness arises the question, 'Why are these processes accompanied by conscious experience? This is due to the hard problem of consciousness. Physical explanation is well suited to the explanation of structure and of function.

In order to show the irreducibility of phenomenal consciousness Block makes a distinction between access (A) and phenomenal (P) consciousness.[28] Block defines an access conscious mental state as one, which is available to processes of belief information, practical reasoning and rational reflection and to expression in speech. According to Block, P-consciousness is experience. P-conscious properties are experiential properties and P-conscious states are P-conscious states. This means, a state is P-conscious if it has experiential properties. Block takes P-conscious properties to be distinct from any cognitive, intentional or functional properties. In his view, if P-conscious is confused with something else, there will be confusions.

Block makes a distinction between P-consciousness and A-consciousness and demands their interaction.

A state is A-conscious if it is poised for direct control of thought and action. For example a representation is A-conscious if it is poised free use in reasoning and for direct rational control of action and speech. The interest in above distinction arises from the conflict between two different conceptions of the mind, the biological and the computational. The computational approach supposes that all of the mind can be captured with notions of information processing, computation and function in a system.

According to Block, now we know so little about the scientific nature of phenomenal consciousness and its function. We cannot judge whether an ersatz phenomenal consciousness module could perform the same function. In other words, an ersatz phenomenal consciousness module could inject it representations with ersatz conscious content, which would affect information processing the same way as real conscious content. And the P=consciousness is often representational. In addition to this he argues that the explanatory gap in the case of P-consciousness contrast with our relatively good

understanding of cognition. Because of confusing P-consciousness with something else, a great deal of confusion arises. Block offers the most powerful argument to date that is roughly formulated as follows:[29]

1. M = B (substance)
2. Cm=Cn (properties)

The first one is the dualism of substances and the second is the dualism of properties (of concepts), i.e. dualism of concepts. Taking 1 and 2 are explanans, now we can hold that

3. Water = H_2O (liquid)
4. Water = ice (solid)

In 3 and 4 something is correlated.

5. Water = H_2O V ice V... (multiply realizable clause).
6. Water is H_2O

Here, disjunctivism is metainaccessible. As we have no explanation, physicalism is false. Physicalism is inaccessible because no science provides explanatory power to identity. It is also metainaccessible since we have no idea of what kind of science would

fill the bill. So we change the problem into its epistemic dimension of shared phenomenality, which requires the induction of the problem of other minds. The hard problem will be dissolved when there is an explanation of identity. Since there is no such explanation, we generate the harder problem.

Churchland refutes all forms of irreducibility arguments.[30] Against Nagel's claim that one would not know what are the experiences of a bat, from its first-person perspective and there appears a gap between the physical reality of the biological brain and the psychological reality of first-person conscious experience, and so, conscious phenomena cannot be given a purely physical explanation, Churchland argues that this does not mean that something about the bat's sensory states transcends understanding by the physical science. The difference lies not in character of thing known. It lies in the distinct manner of the knowing. He agrees that mental states do have non-physical features and one's auto connected epistemic pathways are precisely what detect them. But the existence of auto connected epistemic pathways should no longer show the existence of non-physical features. Those pathways are themselves physical. The

problem is that how could the physical pathways interact with non-physical goings on. Churchland insists that non-physical properties are not a solution to anything. Cognitive functions are intelligible on purely physicalist assumption.

Against Jackson's Mary argument that there must be limits to what physical science can tell us about the contents of conscious experience and so, there is some non-physical dimension to one's conscious experience, Churchland observes that there is the conflation in between different ways of knowing and different things known.

Unlike these two thinkers, Searle presents his anti-reductionist view in a different manner. He insists that all mental activities are the states or features of the brain. He also claims that those mental states are not themselves physical states of the brain. They are not identical with, and are not reducible to the intricate physical states of the brain that neuroscience deals with. For him, the relation between physical states and mental states is causal relation. In Churchland's view, what Searle rediscovers is not the mind itself. But it is only our commonsense, pre-scientific, folk psychological conception of mind.

On the contrary the aim of science is to discover a new and deeper conception.

2.5 CONCLUSION

In the light of the above, it is seen that the non-reductionist arguments cannot stand against the reductionist variants, especially the new wave metascientific reductionism in practice. This includes the so-called mysterianist wave abetted by quantum approaches made by McGinn, Chalmers, Penrose and others. Thus it is shown that reductionism has a fair chance of solving the hard problem of consciousness. Now, in the light of the foregoing, we shall examine and rerformulate the different theories of consciousness, we shall start with the first pair of classification.

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CHAPTER III

CLASSIFICATION OF THEORIES OF CONSCIOUSNESS

3.1 CARRUTHERS' CLASSIFICATION

Consciousness can be characterized into two kinds. They are the phenomenal consciousness and the representational consciousness. Most of the classifications of consciousness have been based on these two kinds. Among them, the taxonomy made by Peter Carruthers and William Seager has been considered as the most important. Carruthers' forms a Tree Diagram of consciousness based on the former kind and Seager makes an alternative categorization based on the latter kind.

Carruthers defends a naturalistic explanation of phenomenal consciousness, which is known as 'dispositional higher-order thought theory.'[1] Before classifying the various theories, he distinguishes different notions of consciousness. It is given as follows:

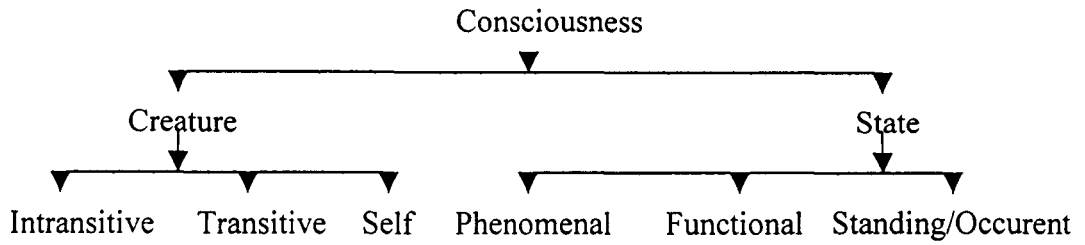

Figure 3: Classification of Consciousness

The *state* consciousness is concerned with the question of what it is for a mental state to be conscious. We also ascribe consciousness to creatures. Thus, the *creature* consciousness is that of what it is for a person or other creature to be conscious, that is, how conscious creature differs from those, which are not conscious.

In *intransitive* state, the subject of consciousness is the person and consciousness is treated as a simple property of that person. Consciousness is equivalent to being awake. It means an organism is conscious is equivalent to it is awake as opposed to asleep. On the other hand, *transitive* consciousness is that an organism is conscious of such - and such or aware of such - and - such. It means the organism perceives such - and - such and the perceptual contents can be non-conceptual. Self-consciousness is a disposition property of the agent. The *weaker* variety of this means is that, a creature is capable of awareness of itself, as an object distinct from others. In this sense, to be

self-conscious means to be capable of perceiving and thinking of oneself. The *stronger* version involves higher-order awareness of oneself as a self, as a being with mental states and a subjective inner life. It is not a mere capacity for higher order thoughts about one's current mental states, but a conception of oneself as an on-going entity with a past and future mental state.

In the other distinction, the most noticeable form of state conscious is phenomenal consciousness. In Nagel's view, it is the property, which mental states possess when it is like something to have them.[2] These states have distinctive subjective feels. It is subjective experience. For example, hearing music or enjoying the hues of a sunset or sniffing the sweet smell of a rose, there is something distinctive, which it is like to undergo the experience in question.

Block says that *phenomenal* consciousness is experience, which is distinguished from *access* consciousness. Phenomenal conscious events are those, which can recognize in itself non-inferentially.[3] They present themselves to us subjectively. Phenomenally conscious properties need not imply any form of higher-order thought account of phenomenal consciousness. Our phenomenally conscious states possess properties

for which we can have recognitional concepts. It is considered as problematic. Some think that phenomenal consciousness provides a decisive refutation of physicalism. Some others hold that we shall never be able to understand how phenomenally conscious states can be physical. It raises insurmountable difficulties for functionalist and theory-theory account.

The other is the *functional* consciousness, which can also be called *access* consciousness. A state can be access conscious in the sense that it is inferentially promiscuous, occurring in such a way that its content can figure with subjects' practical and theoretical reasoning and planning, and for expressing in speech. A functional position of mental states can interact with any other similarly occurring states. This activity can be characterized in purely first order forms.

The third is the standing or dormant mental states consists beliefs, long-term goals, personal memories and so on. The occurent or active state includes acts of judgment, felt desires, pains and current perceptions. The standing state is conscious means that it is apt to emerge in some appropriate occurent event in the same content, which is conscious.

According to Carruthers, phenomenal consciousness consists in a certain sort of intentional content held in a special- purpose short-term memory store in such a way as to be available to higher-order thoughts about the occurrence and nature of those contents, acquiring dimensions of seeming or subjectivity.[4] Carruthers has classified various approaches to phenomenal consciousness in a branching- tree structure. In this, the left hand branch includes some no-explanation theories, which cover different positions and the right hand branch contains different reductive approaches. It is given below:[5]

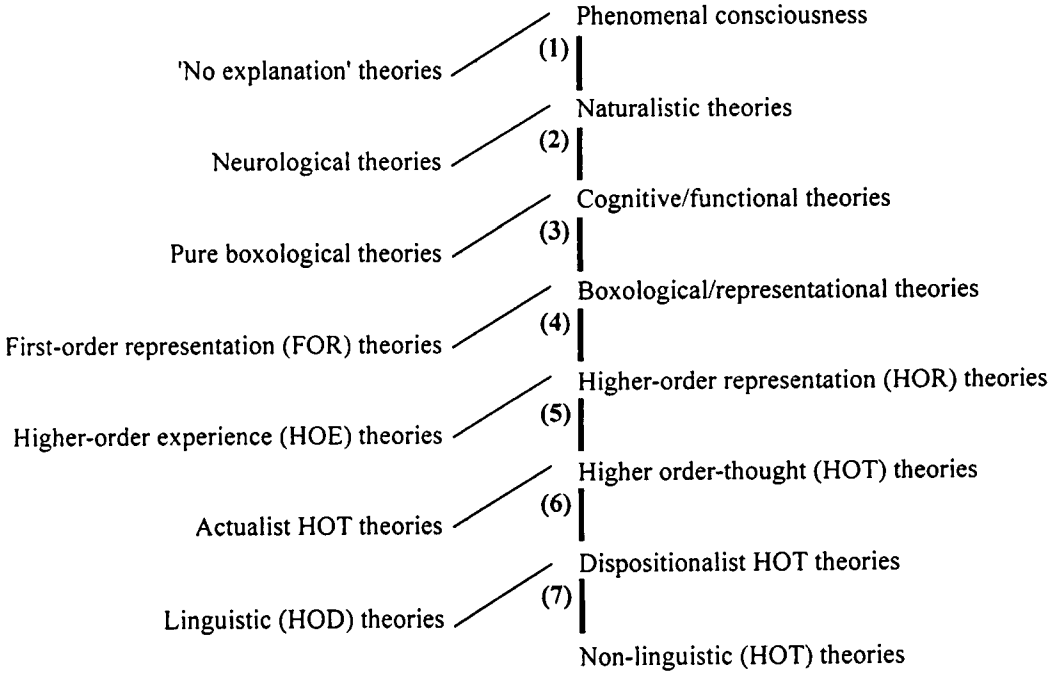

Figure 4: Tree Diagram of Theories of Consciousness

The *first* division is done between no-explanation theories and naturalistic theories. No-explanation theories contain various types of approaches such as mysterians' views. Mysterianists claim that though consciousness has a physical basis, humans never be able to understand. Their views are metaphysical in nature. For example, McGinn, who presents an overtly mysterians view, holds that the problem of phenomenal consciousness lies in an explanatory gap between the subjective qualities of experience and the undergoing neural events in our brain.[6] He suggests two ways to close this gap. We can use introspection to dig deeper into the phenomenal properties of our experiences, perhaps seeking a more sophisticated set of phenomenal concepts with which to categorize and describe the subjective qualities of those experiences. We can also work from the other end, investigating the physical events in our brains, hoping to achieve from there an understanding of phenomenal consciousness.

The other position is naturalism, which holds that consciousness can be given a natural explanation. From a naturalistic viewpoint, functionally definable notion of mental state consciousness are not so problematic. It is because mental function and mental representations

are the fundamental cost of naturalistic account of the mind. Carruthers includes Chalmers in this category and argues that it is also mysterians from the perspective of our current scientific worldview, for it denies any reductive explanation. Mainly, Nagel has pointed out the mystical nature of consciousness. In his famous article, 'What it is like to be a bat?' he argues that there must be something, which is experiencing the world by the bat with its distinctive way and we cannot know what it is. We never understand what the bat's experience, when it perceives the world. It means that there are some facts, which can be only known from a subjective perspective.

We can understand what it is like to undergo a certain sort of experience by construing an imagistic representation of the experience and then we can recognize the experience. Knowing *what it is like* should be a matter of actually possessing the relevant recognitional capacities. There are some facts, which can only be known by those who have a particular kind of subjective constitutes or who occupy a certain sort of subjective perspective in the world.

Nagel claims that the scientific view of the worldview is a view from nowhere. For him, when we try to describe the world in objective

terms, the ways of description do not depend upon the particular structure of our sense organs, or as our limited perspectives. Our relationship to the world is also described in the objective perspectiveless terms. He argues that there are some facts, which are invisible to science. Since they are invisible to science, they must inevitably be inexplicable by science. Science can provide a complete objective description of what takes place in ones brain when he/she perceives a particular thing. However, it cannot explain what it is like when he/she perceives the thing. Science describes the process of perception, but leaves out the processes for the subject, from inside.

Similar viewpoint has been further developed by Chalmers. He considers the problem of phenomenal consciousness as a hard problem, which he distinguishes from the easy problem.[7] Phenomenal consciousness cannot be reduced or explained in natural terms. He thinks that there could not be a universe exactly like ours in respect of its total microphysical descriptions, and sharing our basic physical laws, but differing in its chemical, geological, meteorological, biological, psycho-functional, economic properties. Chalmers holds

that we can construct a world, which is micro-physically similar to ours, but there must not be qualitative feels. This is the *zombie* world.

This conceivability of zombie world makes the problem of phenomenal consciousness so hard and makes it insoluble from within a physicalist and functionalist framework. His naturalistic dualism says that subjective feels are not physically constituted, but are linked with physical events in the brain by basic causal laws. In his view, there is an ineliminable explanatory gap between the facts of phenomenal consciousness and the rest of the natural world.

Jackson has further exemplified this fact in his knowledge argument.[8] According to him, the subjective aspect of experience is a genuine fact about experience is a genuine fact about experience, which cannot be captured in either physicalist or functionalist terms. He gives an example of Mary, a scientist who has been brought up in a black and white environment. She knows everything about colours and colour vision. But, she does not know what an experience of red is like. Through this experiment he points out that there are some facts, which are not physical, functional or intentional facts and cannot be reductively explained in terms of such facts.

Carruthers argues that none of the mysterianists arguments has been successful. He tries to examine these from an epistemic point of view. For him, the problem of phenomenal consciousness is generally characterized as the problem of understanding how phenomenal consciousness can be constituted by physical events in the brain. He finds out two major faults in McGinn's argument. One is that he does not consider that there may be many different levels of scientific enquiry and description between neuroscience and commonsense psychology. The second is that he denies the possibility that we might succeed in closing the explanatory gap between consciousness and the brain. Chalmers also insists an explanatory gap between phenomenal consciousness and the rest of the natural world. Carruthers argues that every mysterianists arguments commit the fallacy of equivocation. The argument seems convincing by trading on the ambiguity between thin and thick notions of fact and property. He argues that these arguments have failed to give a satisfactory account of phenomenal consciousness. It is also that the arguments against the possibility of a reductive explanation of phenomenal consciousness are not obviously successful.

The *second* division is between neural and cognitive theories. The former tries to explain phenomenal consciousness by reducing it into physical terms or in terms of neurobiological correlates. The latter gives an explanation in cognitive or functional terms. These theories are a conjunction of causal role and intentional content, that is they are functional-boxological and representational in character. Neuroscientists hold that phenomenal consciousness is the production of some kinds of neural activities in the brain.

Crick and Koch (1998) propose that phenomenally conscious experiences may be identified with synchronized 35-hertz to75 hertz neural oscillations in the sensory areas of the cortex. They claim that these synchronizes oscillations are crucial in solving the so-called binding problem in perception. According to Carruthers explaining phenomenal consciousness in terms of biological or pure-biological terms are impossible. He suggests a solution of explaining it in terms of some combinations of causal role and intentional content.

Baars (1997) identifies phenomenal consciousness with activity; in primary sensory areas of the cortex[9] His theoretical model called Global Workspace suggests a modern theater of consciousness based

on a large set of psychological and neuro biological contrasts. Conceptually, GW theory emerged from the long series of Unified theories of Cognition developed by Allan Newell, Herbert Simon, John Anderson, and their coworkers. In these models, 'working memory' corresponds metaphorically to the stage of a theater in a distributed collection of expert systems. This theory applies the theater architecture to the issue of conscious experience. People report phenomenally conscious experiences when those regions of the brain are differently active. The data cannot show a neural correlate of phenomenal consciousness, only we can argue for an identity. We can say that some kinds of brain activity are necessary condition for phenomenal experience and that activity is sufficient in normal surroundings for phenomenal consciousness.

However, to form a neural explanation we want more information about the functional connection between phenomenal consciousness and other aspects of cognition. Without clear view of the functional place of phenomenal consciousness in cognition, we do not know how to generate the right kind of subtraction task when

conducting brain scans. In addition, a postulated neural identity by itself is no explanation.

The *third* classification is pure and representational boxology. Carruthers argues that most cognitive theories can be put in a boxological form. In this view, phenomenal consciousness occurs at a certain distinctive stage in the cognitive processing of perceptual information, distinguished by its causal and informational relation to other cognitive functions. Almost all cognitive theories explain phenomenal consciousness in terms of its positions in the functional organization of cognition, boxlogically. Some claim that for a state to be conscious in the relevant sense is for it to be poised to have an impact on the organisms' first order decision-making processes. Opposing to theses, others argue that the relevant requirement is that the state should be suitably related to higher-order representations of that very state. Carruthers presents *five* desiderata for a successful theory:[10]

1. Phenomenally conscious states have a subjective dimension they have feel; there is something, which it is like to undergo them.

the consciousness box. The box is defined purely by its relations with first-order cognition. The phenomenally conscious differences between different states in the consciousness box are put down to differences in the specific intentional contents possessed. Higher-order theories agree that the contents of the box form a crucial part of an explanation, but claim that the box is also defined by its relations with higher order representations of the same kind that higher order experiences (HOEs), higher order thoughts (HOTs) or higher order linguistic description (HODs).

Dretske and Tye are the main upholders of FOR theory.[11] Both of them have tried to characterize the phenomenal properties of experience in terms of the representational contents of experience. Accordingly, the difference between an experience of red and an experience of green will be explained as a difference in the properties represented. The difference between pain and tickle is similarly explained in representational terms. The difference is located in the different properties represented in particular regions of the subjects own body.

They claim that a phenomenally conscious experience is one, which is poised to have an impact on the subjects' beliefs and practical reasoning processes in such a way as to guide behaviour. Such experience must be output of the various perceptual systems, which is presented as input to the various cognitive systems charged with fixing beliefs, generating plans and controlling movements. The representations are as follows:

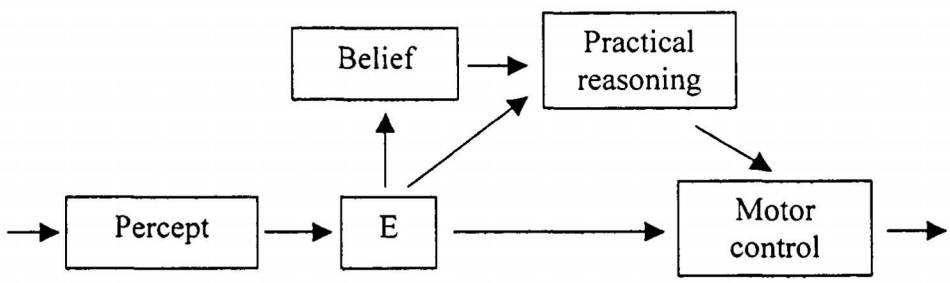

Figure 5: First Order Representation by Tye and Dretske

In explaining FOR theory, Tye is more distinct than Dretske. He defines phenomenal consciousness as the occurrence of a distinctive sort of intentional content figuring in a distinctive position within the functional architecture of cognition. He calls his theory PANIC.[12] PANIC stands for Poised, Abstract, Non-conceptual, Intentional Content. Poised is the aspect of the theory, which individuates phenomenal consciousness in terms of its functional or causal role. The

state in question is perceptual state, defined by their availability to first order belief forming processes and behaviour-guiding systems. Abstract is a feature of content in question. The different individual things, represented, do not differentiate it. Non-conceptual is also related with content. It is not structured into concepts and cannot be adequately expressed in the form of sentential that-clause. Intentional content insists that the account is representationalist one. Phenomenally conscious states are only distinct from one another, where what is represented is different. Both Tye and Dretske are different in their representationalist accounts. But, their accounts are externalist and both offer reductive or quasi-reductive theories of intentional content.

Carruthers presents four features to support the FOR theories. The *first* one is that the transparency of perceptual experience. Harman and Tye claim that perceptual states are transparent. A perception of red is a state, which represents a surface as having a certain distinctive quality, i.e., redness. Paying close attention to one perceptual state comes down to paying close attention to the quality of the world represented.

The *second* one is that from a FOR point of view many animals, besides human beings, are capable of phenomenal consciousness. FOR theorists hold that, in order to be capable of phenomenally conscious, experiences have some beliefs, desires, and representational states, with the right sort of content poised in the right sort of way to be available to conceptual thoughts for the control of action.

The *third* is the feature of evolution. It holds that FOR theory can provide a particularly possible evolutionary explanation of the existence of phenomenal consciousness. The *fourth* feature is that FOR theory can explain at least some of the puzzling feature of phenomenal consciousness. FOR theories explain the intuition that, the phenomenally conscious state possesses properties, which are intrinsic, and non-relationally individuated.

According to Carruthers, we can draw a conceptual distinction between what the world is like for an organism and what the organisms' experience of the world is like for the organism. What the world is like for an organism will depend upon the kinds of analog representation of the world, which are generated by its perceptual mechanisms. FOR theorists deny the reality of the conceptual

distinction between worldly-subjectivity and mental sate subjectivity. They deny that there is any real distinction between the analog properties, which our experiences represent as figuring in the world and phenomenal properties of the organism's experience of the world. FOR theory may be adequate for the former only. But, it cannot explain the latter. It is needed some sort of higher order representation theory.

There are many varieties of FOR theories. One comes from the different ways of drawing the contrast between belief and perception. FOR theory can be explained in terms of the digital-analog distinction, as opposed to the conceptual-non-conceptual or the acquired-systematic distinction. One more choice concerns whether the intentional contents appealed to by a FOR theory should be individuated widely or narrowly. Tye and Dretske support forms of wide conception about content. The third variety examines that a FOR theory should adopt a reductive or non-reductive account of intentional content. The other is whether intentional content of perception is best explicated in terms of informational relations to the environment.

For Carruthers, the FOR theories are best pursued, in *narrow content consumer semantic* form. The distinction between belief-contents and perceptual contents is best seen in terms of the digital-analog contrast. Even though, these theories can overcome many potential problems, they are not very much promising. The main difficulty for FOR theory is that it cannot provide an account of conscious-non-conscious distinction. According to him, most of the FOR theorists do not take the idea that cognition may be multilayered with systems of non-conscious belief, thought, experience as well as systems of conscious belief, thought and experience. There are three options for FOR theories. One is that they can deny the data (Dretske). The second is they can accept that sensory motor experiences are not phenomenally conscious, and try to characterize what additionally is required to render an experience phenomenally conscious in functional terms (Kirk). Thirdly, they can insist that sensory motor experiences are phenomenally conscious, but in a way, which makes them inaccessible to their subjects (Tye). For Carruthers neither of these data is acceptable.

Carruthers provides three options with relate to the above positions. The first option, which is related with Dretske claims that cognition is unitary, single layered phenomena. He discusses the case of blind sight, but denies its reality as a case of non-conscious experience. He claims that, the blind sighted person is one who acquires beliefs about environment without having any sensory awareness of the environment. The blind sighted person has digital representation of the environment, but not analog ones. He has belief, but no experiences. Dretske holds that the function of the experience is to get us information about what there is, as opposed to where it is.

Carruthers claim is that there are two analog representation-generating perceptual systems. One of which tracks the movement and positions of objects in such a way as to guide action. The second underpins conceptual recognition, which gives a form of multilayered perceptual cognition. The states of the conceptual system should be phenomenally conscious while the states of the sensory motor systems are not in difficult to explain in purely first order terms.

The second approach, which is exemplified by Kirk (1994),[13] recognizes the reality of conscious-non-conscious distinction. But, he

claims that for a perceptual state with given content to be phenomenally conscious, it must be present to the right sorts of decision-making process. It is entirely mysterious how experiences with contents, which are otherwise identical could be sometimes phenomenally conscious and sometimes not, depending first upon the over all role in the organisms' cognition of decision-making processes. FOR theorists insist that phenomenal consciousness is a form of transitive creature consciousness. A subject's visual experience of something is phenomenally conscious just in cease that things look a certain way to the subject. The schematic representation is as follows:

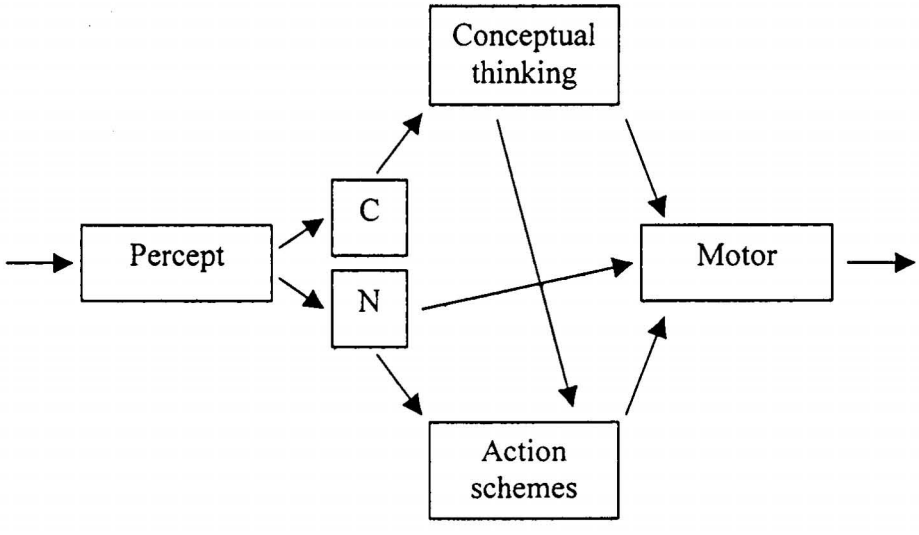

Figure 6: Kirk's Approach to First Order Representation

Here there are two distinct routes for perceptual information through cognition. *C* stands for conscious and *N* stands for non-

conscious. Only the C states are phenomenally conscious, because only they are available to conceptual thought. Carruthers points out two problems here. One is that there is good reason to think that the action schema route must involve at least some degree of conceptualization. Another problem is to explain why conceptualization should give rise to phenomenality in any case.

Finally, Tye accepts the distinction between perceptual states, which are access conscious and those that are not.[14] He claims that states of both kinds are phenomenally conscious. Tye does not endorse multilayered conception of cognition in explaining aware-unaware distinction. Tye adopts an *actualist* form of HOT theory. For him, we are aware of an experience and its phenomenal properties only when we are actually applying phenomenal concepts to it. The dilemma facing Tye is either that he cannot account for the immense richness of experience, which we can be aware of, or that he has to postulate an immensely rich set of HOTs involving phenomenal concepts accompanied each set of experiences of which we aware.

HOR theories argue that the perceptual states must stand in some relations to forms of higher order representation, such as thoughts and

experience-like states, which are targeted on the first order experiences themselves. The schematic diagram of the emended version of HOR theories is given below:

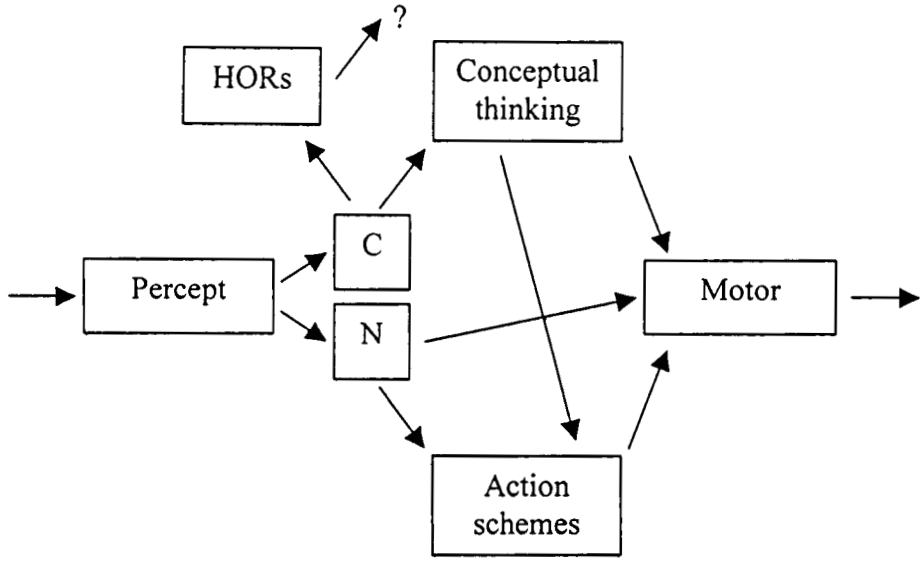

Figure 7: Higher Order Representation

Within higher order, representation approaches there are further discussions. They are HOEs, HOTs, dispositionalist HOT theory and higher order linguistic description (HOD) theory.

HOE theorists defend an inner sense model of phenomenal consciousness. According to them, we have the capacity to sense experience our own perceptual states and thereby forming higher order representations of the occurrences and contents of those states.

HOT theorists hold the view that higher order representations are thoughts rather than experiences. Rosenthal, Dennett and Carruthers himself defend this view. Within the HOT theory, there are *two* positions-*actualist* and *dispositionalist* positions. The former holds that in order to be phenomenally conscious, a mental state has to be actually causing a HOT, which takes that state as its target. The latter supports the view that, the state in question should be available to or *disposed to* cause a HOT about itself.

Dennett defends a form of HOT theory, which states that the HOTs are all higher order descriptions framed in natural language.[15] He claims that conscious states are those, which are available for reporting in speech, and it is a determinate matter, what is or is not conscious at any one time. He argues that, there is a special purpose *short-term memory store*, whose function is to make its contents available to verbal report, and whose contents are thereby conscious.

Carruthers defends a form of *dispositionalist HOT theory*.[16] For him, HOE theories are functionally and evolutionarily implausible in comparison to the HOT theories. HOE theories are inner sense models of phenomenal consciousness. They postulate a set of inner scanners,

directed at our first-order mental states, which construct analog representations of the occurrence and properties of those states. They hold that we have systems charged with scanning and constructing representations of our own states of mind, just like that of we have systems charged with scanning and constructing representations of the world. Opposed to this, HOT theories maintain that phenomenally conscious states are a subset of those on which a higher-order thought can be targeted. Rosenthal's objection to HOE theory starts from the claim that not all phenomenally conscious states are introspected states. We do not pay attention to our experiences, but have to pay attention only to the objects of our experiences. In Rosenthal's view, introspection occurs only when the HOTs in question are themselves targeted by further HOTs. In this case, we know that we are thinking about our experience.

Another objection to HOE theory is that they seriously underestimate the computational complexity required for the internal monitors necessary to generate the requisite HOEs.

In Carruthers' view, inner sense accounts of phenomenal consciousness are impossible on evolutionary grounds. Unless we

already had HOTs, we could never have involved higher-order experience. Moreover, if we had HOTs, we do not need HOEs. Carruthers prefers higher-order dispositionalist theory and rejects the possibilities of HOE theories.

Then he examines the actualist HOT theory. It holds:[17]

Any mental state M, of mine, is conscious = M is actually causing an activated belief (generally a non-conscious one) that I have M, and causing it non-inferentially.

That is, an account of phenomenal consciousness can be generated by stipulating that the mental state M should have an analog content in order to count as an experience, and that when M is an experience, it will be phenomenally conscious when suitably targeted. The conscious states are those which cause a belief that there is such an experience taking place, that conscious belief are those which cause a belief that one has that belief. Such accounts are higher order. The actual conscious thoughts relate to the object perceived, not to the states of experiences.

The major problem with the actualist HOT theory is the *problem of cognitive overload.*[18] It relates with the huge number of beliefs, which would have to be caused by any given phenomenally conscious experience. Actualist HOT theory requires an implausible amount of cognitive space to be taken up with higher order beliefs in order for any given experience to be phenomenally conscious. The very great cost attaching to increased brain size makes this implausible. An unbelievable amount of cognitive space is to be taken up with every conscious experience. Carruthers defends this theory because of its capacity to explain the subjective feel of experience. This theory can accommodate the intuition that conscious states are those of which the subject is conscious perfectly well. He argues that this theory is much more evolutionary and functionally plausible than its rival theories, that is actualist HOT theory and HOE theory.

In counterposition to the above, in his explanation of consciousness, Seager tries to point out the significance of representational kind of consciousness. For him, all consciousness is consciousness of something and of that something as something or other. In his classification, the underlying common problem, which

they face is to account for the nature and genesis of consciousness within the natural world, as described in our burgeoning scientific picture.

3.2 SEAGER'S ALTERNATIVE CLASSIFICATION

The reason why call it a counter classification is that it opposes HOT version espoused by the first classificationist, and thereby denies also transitive nature of consciousness. Thus Seager's classification starts with a critique of HOT as well as a critique of transitive consciousness. On the positive side, Seager is convinced that a developed or rather a modified form of quantum approach to consciousness (consciousness in microtubules) which posits consciousness as the ultimate metaphysical principle of physical reality. Thus Seager turns to a variant of Panpsychism for solving the hard problem of consciousness.[19] However, Seager is far away from any religious interpretation such as the one Subhash Kak advances.[20] In view of the strong criticism against Kak, one wonders whether the quantum approach is to be preferred. Like Kak, Seager has no reason to accept any other solutions such neurobiological reduction of consciousness. In the face of criticisms from Churchland and others,

Seager cannot support any form of intransitive consciousness.[21] Nor is it clear whether one could subscribe to higher-order theories so as to sustain the first classification unless it is granted they meet dynamic theories at some point or other.

The application of the notion of representation to the problem of consciousness begins from Descartes. And it is this vision that provides the foundation of what is really the only viable scientific picture of how cognition works. However, the philosophical theories could all be described as anti-Cartesian, the application of the notion of representation to the problem of mind and the fundamental problem of genesis of consciousness both stem from Descartes. Descartes emphasizes *two* questions of the nature and generation of consciousness.[22] The *generation problem* is that which deals with how the physical workings of the brain generate or underlie conscious experience. His generation theory, which Seager calls is molecular-compositional theory, which posits, at the simplest level, a brute causal power of the brain to produce elementary 'units' of conscious experience. The second one is *Identity theory.*

Seager interprets that by arguing that every state of consciousness involves an idea and ideas are representational, Descartes suggests that consciousness is in some fundamental way is representational. Descartes argues that, even though the mind and brain are two different things, the latter can store a variety of representations. The nervous system, which serves to lay down representation of the world in the brain stands between the mind and the world. But, the brain cannot accomplish the more intellectually demanding task characteristics of human cognition. This signifies a two-layer view of representation.

Firstly, the bottom layer being the representations of combinations of sensory qualities and secondly is the higher layer being the representations of cognitively rich content, the prime examples of which are simply the ideas constituting the states of consciousness involved in our normal inter course with the world. The brain can attain the bottom layer of representation, but the mind cannot preserve these representations except by the continual consciousness of them and these are to be stored up in some more

durable medium. At the same time, only the mind can support the high level of cognitive processes characteristics of human thought.

Yet, here remains the *generation* problem, i.e. what is it about matter that accounts for its ability to become conscious? According to Seager, two strategies are available to solve this problem. Two ways to undercut the generation problem are the identity strategy and the dissolution strategy. One can try either to identify conscious with certain physical states or to dissolve the problem.

An interesting identity theory has been presented by Churchland, which is called connectionism.[23] His identity theory is that, there are sub-networks of the brain, operating in an essentially connectionist fashion, which correspond to in fact can be identified with states of sensory conscious such as colours, sounds, smells etc. Thus, the abstract space associated with this sub-network is also a space of qualitative consciousness, and the vectors within the space correspond to particular sorts of sensory experiences.

In order to refute this theory, Seager explains three paradigms of connectionism. First is that the brain is composed of hundred billion

neurons and each neuron is connected to ten thousand of its fellows. Connectionism is a simplification and idealization of the probable functional structure of the brain. A connectionist system is a set of neural 'units' inter connected in various ways. Each unit receives multiple inputs from several others, but produces a single output. The output is determined by the unit's 'activation function'. But, not all the connections to a particular unit are equally important: the value of an input is adjusted by the connection weight between the units in question. A network can learn by modifying these inter-unit connection weights, and various methods for doing this have been proposed and developed.[24]

The second is that a connectionist network is normally divided into a set of input unites, which receive signals from the 'outside world', an optional set of hidden units connected to both the input units and the final layer of output units, which transmit their signals back to the outside world. The whole network can be regarded as a machine that takes a set of input values, performs a certain mathematical functions on them and finally returns a set of output values. It is also that the state of the entire network can be regarded as

a 'list' of the activation states of all the units. Such a list is a vector in an abstract space. The operation of the network will involve it sequentially changing its overall states. That is, under the impact of the input to the system and the internal changes in activation induced by the propagation of the input through the network, the network will move from vector to vector. These changes will form a trajectory in the abstract space defined by the whole network. It is possible to find mathematical descriptions of these trajectories and of the dynamic connectionist systems.

Thirdly, two interesting features of neural networks are their ability to store information in 'non-local' or *distributed* representations and their ability to process information in 'parallel'.[25] A neural network computes some function, which transforms input vectors into output vectors. Such computations can be interpreted as cognitive or proto-cognitive tasks, such as categorization, object or form recognition and the like. But, the information, which the neural network embodies and draws upon to complete its tasks is not stored discretely anywhere in the network. This information is rather jumbled together in the full set of connection weights that govern the unit-to-unit inter-actions that, all

together, determine what output the network would finally produce. This provides a concrete model for the heretofore rather vague ideas of non-local, non-symbolic and holistic representations. The way that information is scattered throughout the network also means that all of the information can be processed at once, greatly speeding up whatever computational task the network is assigned. However, while neural networks might be faster than traditional serial computers because of their parallel processing abilities, it is perhaps, philosophically significant that they are theoretically equivalent to traditional computers in their computational powers.

Seager points out that this theory confuses the sources of conscious experience with conscious experience itself. That is, while we might agree that activation of the appropriate neural 'vectors' is required for conscious experience; this would not show that such activation was identical to experience. In fact, it is also possible that this activation can occur in the complete absence of consciousness. Besides, the brain is awash with neural networks handing every conceivable sort of operation upon sensory input. The vector coding identity theory provides no principled reasons for its hypothetical

identifications; the condition that the abstract vector space of the proposed network is isomorphic to the relevant phenomenal sensory space is far from sufficient to ground the identity claim.

Another option, which has been available to the identical theorists, is a mentalistic reduction of consciousness. Seager suggests that, the explanation of consciousness in terms of mentality would avoid the direct explanatory leap from consciousness to the physical, a leap that has always seemed somewhat to exceed philosophy's strength. The higher order thought (HOT) theory of consciousness asserts that, a mental state is conscious if it is the object of a thought about it. Given that, we have some naturalistically acceptable understanding of thoughts independent of the problem of consciousness. HOT theory promises a mentalistic reduction of consciousness. Then the naturalistic account of non-conscious-mind, which is presumably relatively easy to attain, solves the whole mind-body problem.

David Rosenthal, Carruthers, Kirk and Lycan have proposed such a reductive theory. According to Rosenthal, there are two mental states.[26] They are intentional mental states, such as beliefs, hopes,

expectations, etc and phenomenal or sensory mental sates, such as pains, visual sensations etc. Some mental states may have both intentional and phenomenal properties. He supports HOT theory. The essential of HOT theory can be explained as follows:

For α to be a conscious mental state, the subject must have a higher order thought about α. But, not just any sort of thought, brought about in any sort of way, will do. Roughly speaking, we can say that for α to be conscious one must have the 'properly acquired belief that one is in α. So HOT theory defines consciousness as follows:

α is a conscious state of S if and only if

1. S is in the mental state α
2. S has an 'appropriate' thought about α (we will call having this thought 'being in the state T[α]': the content of T[α] is something like 'I am in state α'),
3. S's being in a α causes S's being in T [α]
4. S's being in α does not causes S's being in T[α] via inference or sensory information

Each clause is necessary to avoid potential objections. It follows from HOT theory that to be conscious of anything is to be conscious of it as something or other. Every state of consciousness is 'aspectual'. This follows from the fact that every thought must be structured from concepts. But, it does not follow from HOT theory that anything has an essential conceptual aspect under which one must be conscious of it. It also follows from the HOT theory that one cannot be conscious without having beliefs. Seager argues that, however, from HOT theory, it does not follow that when one is conscious of a mental state that one is conscious of a belief. To be conscious of such beliefs requires yet higher order thoughts about them.

Seager suggests that it is possible to maintain that if we tend to think of certain sort of mental states or essentially involving consciousness this can be explained as the mistaking of a purely nomological link for a metaphysical one. For example, it might be that pains are normally such as to cause the second order thought that one is in pain and that abnormal cases are exceptionally rare. The belief that one is in pain, which constitutes one's consciousness of the pain, does not itself have to be and generally will not be a conscious state.

One would be conscious of this belief only via a third order state, namely a belief that one believed that one was in pain. Thus, to refute the HOT theory by claiming that it is possible for one consciously to experience pain without consciously believing that one is in pain, that is, without being conscious of a belief that one is in pain, is difficult.

For Seager, Dretske's refutation of HOT theories is also not supportable. Dretske claims that since HOT theory makes every conscious state the object of a thought about it, every conscious state has an associated conceptualization of it, as given in the thought that makes it conscious. He objects that it is possible for there to be conscious experience without any of what he calls fact awareness. Fact awareness is consciousness of facts, which are conceptual entities. An example is that an awareness that snow is white. One can be aware of white snow without being aware that snow is white. But Seager argues that, HOT theory does not need any consciousness of fact for there to be conscious experience; it only demands that there be some conceptual categorization of some experience which is itself is generally not conscious. Dretske's basic objection can thus be countered. Dretske can, however, further deny that every conscious

experience requires some conceptualization of it. However, while one can plausibly argue that no conscious experience has a mandatory conceptualization, it is very difficult to show that some conscious experience has no conceptualization. HOT theory asserts rather that every consciousness is a consciousness as of. Contrary to Dretske, this seems entirely plausible. Dretske needs to show that states can be conscious in the absence of any conceptually articulated characterizations of them

With relation to each clause of the HOT theory definition of consciousness there is a possible corresponding pathology of consciousness. The pathologies are generated by denying one clause of the definition while maintaining the truth of as many of the rest as possible. These are test cases with which to explore the plausibility of HOT theories plausibility. Deny clause (1) and we get a 'hallucination' of consciousness, e.g. one thinks one is in pain when one is in fact not. Deny clause (2), and we get a mental state that is not 'noticed', the denial of either (3) or (4) leads to interesting and problematic cases, which get to the heart of the HOT theory. In both cases we have to ask whether it is in any more than at most a merely legalistic sense in

which there is no conscious awareness of the lower order mental state... If the subject gets into T [α], how can the subject or 'the world' tell how T [α] was brought about? If T [α] is the sort of state that 'generates' consciousness, will not an at least as if consciousness result whenever the subject gets into T [α]?

If (1) is false, then of course (3) and (4) must be false, but there is no reason for denying (2). This is a case of hallucination of consciousness, the description of which is somewhat problematic. Its possibility is a fundamental characteristic of HOT theory.

Suppose, (2) is false, then, again it follows that (3) and (4) are false. This is the case of an unnoticed mental state, indubitably somewhat odd if the state is a pain or other highly distinct sensation.

If (3) is false, then (4) must be false, (1) and (2) can remain true.

Finally, let (4) be false. All the other clauses can nonetheless be true.

The *causal link* between α and T [α] is of a much closer and more intimate sort than the causal links in perception that mediate between literally distant objects and the brain. The mechanisms of HOT theory

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are presumably all within the brain and in fact, they will generally form a part of the more complex and extended causal sequences involved in perception. This alone suggests one reason why we feel that the link between consciousness and the mental state of which we are conscious is so peculiarly intimate. According to HOT theory, it is an intimate link, but one that is at bottom causally 'ordinary', not metaphysically unique.

Dennett has proposed a closely related view of HOT theory.[27] Like other HOT theorists, he explains consciousness in terms of a set of mental states that are themselves non-conscious, whose nature is already pretty well understood, and which can take a place in the natural, physical world with little or no discomfort. Dennett also agrees with the HOT theory that the members of the explanatory set should be intentional mental states, that is, mental states that in some way carry informational content without necessarily carrying any of what might be called phenomenal content. But, for Dennett, instead of aiming to spell out precisely in what the occurrence of the phenomenal consists the idea is, roughly speaking and somewhat paradoxically, to explain the appearance phenomenal content in terms of informational

content. Dennett also disagrees with HOT theories about whether such an account can be simply given in terms of the apparently rather ordinary thoughts about one's own mental states claimed by the HOT theory to generate conscious experience. According to Dennett, the correct story involves much more complex interactions among a variety of content bearing states as well as a more circumspect analysis of just what the contents of the appropriate explanatory states might be. For example, the contents crucial to this explanatory project are likely to be entirely distinct from the contents of our 'highest level' intentional states, our own beliefs, desires, etc., and perhaps the requisite content cannot be specified in propositional terms at all.

Dennett's explanation will be charged entirely in the language of content, representation and intentionality. But, we need not draw any direct explanation of phenomenal consciousness from these resources because there is no such thing as phenomenal consciousness.

Seager points out that Dennett's theory must charge three crucial hurdles. The *first* concerns the nature of intentional states: the required account of them must not covertly involve or presuppose consciousness, must possess independent plausibility and should meet

the naturalistic condition that the account avoids appealing to anything, which cannot be reasonably viewed as smoothly fitting into the physical order. The *second* hurdle is to show that, despite intuition and appearances, the phenomenal aspects of consciousness are not intrinsic features of consciousness whose basic properties must be accommodated within any account of consciousness, which would naturally be thought to require a causal explanation and for which a positive explanation is necessary part of any theory of consciousness. This is crucial for an assault on the generation problem. The *final* hurdle is to show how the proper deployment of the appropriate set of intentional states can account for the reconceived domain of the phenomenal.

Dennett characterizes qualitative consciousness/qualia as ineffable, intrinsic, private and immediately accessible. Qualia are ineffable in the sense that one cannot know what it is like to have a certain sort of experience except by having such an experience, but we can be quite liberal in 'typing' experiences. In particular, the required experience could be induced in many different ways. Although the usual model is perceptual experience, one can have the relevant

experience by use of memory, imagination or even presumably, direct neural stimulation.

Qualia are intrinsic features of experience. It is that states of qualitative consciousness are properties of the subjects who have them, depending only upon the nature of the subject. It is immediate in the sense that subjects are non-inferentially aware of the way things seem to them. Finally, it is private in the sense that, only one can in one's own state of consciousness.

Dennett introduces verificationist arguments to undermine the notion of our direct access to qualia and in particular, to deny that intra-subjective qualia inversion is possible. With that purpose in mind, he deploys a series of Verificationist Thought Experiments. His major aim is to show that putative facts about qualia dissolve into unverifiable pseudo-facts under pressure of philosophical investigation. These though experiments all depend upon a very special doctrine about facts in general verificationism. They are as follows:

First, one is Colour Inversion (VTE1). Suppose that some mad neurosurgeon performs an operation on one man that systematically inverts his perception of colours. Tomatoes now look green to him; the sky appears to be yellow, etc. It looks like his qualia have been switched and so there must be some qualia to be switched. Contrast the above description with this: the surgeon has done nothing to your colour vision but has inverted his memory-based dispositions to classify colour experiences. After the operation, he just thinks the colours of the things are wonky, because his memory now falsely and due to the operation, tells him that experiences of red should be called green. It seems a thorough switch of memories and behavioural dispositions would leave him unable to decide between these two scenarios. Verificationism suggests that then there is no fact of the matter, thus undermining the very existence of qualia.

Secondly, is the Inverted Taste (VTE2) that is similar to VTE1. We imagine that it is taste, which has been systematically inverted or shifted. A different lesson is drawn from this thought experiment however. The unverifiable difference is now between unchanged

qualia plus changed memory versus the possibility that the memory change has produced changed qualia.

The *third* one is the taste of Beer (VTE3), which is that, most people do not like beer when they first taste it. But, equally most people do eventually come to like beer. If the taste of beer somehow depends upon one's reactions to it, then the claim that qualia are intrinsic properties might be threatened.

The *last* one is the Upside-Down World (VTE4). It is possible to devise spectacles that invert vision so that everything appears to be 'upside-down'. Experiments with such inverting glasses show that after some time, people can adapt to them, so that they once again interact smoothly with the world. The question now is, whether it makes sense to suppose that there is a genuine, substantive opposition between the claim that, one merely adapts to an upside-down world and the claim that adaptation manages to de-invert one's vision so that things look upside-up again.

What Dennett wants to deny is that there is any feature of the brain that marks out by itself the determinate order of conscious

experience, the real content of conscious experience or the genuine intentional states of a subject. For Seager, Dennett's background model of the brain is a cognitive pandemonium. It means the primary job of the brain is to intercede between sensory output and motor output to inject some intelligence into the gap between seeing and acting. This rightly called a cognitive process because the gap is filled with information and operations upon information. What makes a contentful state conscious is cerebral celebrity. This is nothing more than the temporary control of the whole system, especially the vocal output, or speech, subsystem and the memory sub-system.

Seager refutes this pandemonium model because of three reasons.[28] *Firstly,* Dennett believes that conceiving of consciousness in this way is to postulate unverifiable differences -putative differences that make no difference to the operation of the system. Dennett's verificationist tendencies refuse to permit such nonsense, in fact the unverifiability of certain hypotheses regarding conscious experience is not only a reason to refute them but is also, in a fine economy of thought, that very refutation. *Secondly,* if there were actual phenomenology it would be a bizarre sort of thing, as bizarre as to

court incoherence. Since no genuine phenomenon in nature can be incoherent, any phenomenon whose putative properties are incoherent cannot be real. *Thirdly*, and by far the most important, if the cognitive pandemonium somehow generates actual phenomenology, then there is nothing in his book, *Consciousness Explained*, which even begins to attack the problem of just how certain parts or aspects of a pandemonic system could manage to produce conscious experience. Then, Dennett would be guilty of *mysterianism by default*.

Dennett uses his verificationism to discredit certain apparent features of experience. Apparently, it is a basic feature of our perceptual mechanisms to search for object continuity across changes in the visual scene. A striking example is the phi phenomenon. If a subject watches blank screen, sees a dot of light at one location blink on and off, but then sees a second dot of light blink on somewhat to the right, say then the subject will quite literally see the dot *move* from one location to the other. The more interesting is the *colour* phenomenon. In this variant, the first dot of light is green, the second red. It is reported that subjects see the moving dot change colour halfway across the gap between their true locations. If you think about it, this means that

either we have a verifiable case for precognition or else there is some kind of temporal back-reference within our conscious experience. Actually, the ordinary phi phenomenon displays these characteristics, since it matters not where the second dot occurs–continuous movement will still be seen. Since, the experiment can be set up so that the subject cannot know where the second dot will appear we have a strict analogue to the peculiar features of the colour phi phenomenon. Seager holds that Dennett's ideas point toward the representational theory of consciousness.

The representational theory dispenses with the wide spread philosophical conviction that the mind's contents divide into two natural categories-the intentional states, or the states that are explicitly representational and supposedly more purely mental, non-intentional feelings', which term is encompass perceptual experience, pains and other bodily sensations, moods, emotional tone etc. According to this theory, everything in the latter category is to be somehow included within the first. In addition to these, the claims of representational theory of consciousness are in fact phenomenologically verified. Seager gives the example of Spectrum Inversion Experiments, to show that

these are adequate to repulse qualia defenders attack, which is given as follows:

Imagine that your friends see colours systematically different than you do. If you could see the world the world they do, it would look like a colour negative. But, it is not so easy to spot the victims of spectral inversion for they have been trained to call tomatoes 'red' and grass 'green' no matter how such things might look like to them. Worse, their mental state of 'phenomenal red' does the same job within their negative system as your system of 'phenomenal green' does within your system. So, functionalism seems to be false. It can also seem that their state of 'phenomenal red' and your state of phenomenal green both represent the colour green and so on, on a purely representational account of consciousness, you and they are in the same state of consciousness. The Inverted Earth thought experiment highlights this problem. Inverted Earth has a double switch: everything has, compared to Earth, the inverted colour of its Earth counterpart but every one speaks a language in is yellow on Inverted Earth; everyone calls it 'blue'. Now imagine a normal Earthling secretly taken to Inverted Earth, but wearing special colour implants that invert all

colours. Such an Earthling will see the yellow sky as blue, call it blue, and so fall into line with the inhabitants of Inverted Earth. But peculiar problems arise for the representational theory of consciousness as our Earthling 'semantically' adapts to his new home.

Representationalist suggests that consciousness of a colour is an awareness of how the world is represented by our visual system. This is plausible. Sometimes the way things look is the way things *are*, so the way things look involves the properties things have. It is natural to interpret this as involving a representation of the way things are. So seeing a red flag requires no 'redness' in the brain, or any ersatz, mysterious *phenomenal* redness. Seager suggests that representation does not have to be veridical; it is possible to represent what is not the case. Moreover, for any target, there are many ways to represent it. Knowing what it is like to be some kind of conscious creature does involve knowing what it is representing and how it is representing.

Seager raises some objections.[29] Representational theory requires a theory of representation. Some of the important issues are: 'what is the relation between representation and function?', 'how does evolutionary history affect the content of representations and hence

affect particular states of consciousness?' 'what is the relation between the acquisition of new representational functions and states of consciousness?', finally is the question of how the representational theory can deal with the problem of 'rogue consciousness', that is creatures who lack the requisite features to count as representing, but who seem nonetheless to be capable of conscious experience.

For Seager, physicalist explanation does not give a satisfactory explanation to the problem of phenomenal consciousness. Further, the problems of providing physicalist explanations of the nature and generation of states of consciousness seem so perplexing that some radical speculation might be in order. The views of Chalmers provide a springboard into deep and dark speculative currents. Chalmers presents a kind of dualism,[30] in which consciousness figures as a fundamental features of the world, essentially linked to information as well as to the functional architecture of the brain. Accordingly, Seager supports panpsychism; which means everything has a mental aspect. He examines some objections against panpsychism.[31]

The Combination Problem: even if we grant that all elements of reality have some kind of mental, conscious aspect to them, how is it

that so me groups of such elements from higher level and unified states of consciousness?

The Unconscious Problem: it would be easier to believe in an all-pervasive mentality if we did not have to swallow the extra implausibility of this being conscious mentality. Then the generation problem is back with full force. What is the secret ingredient that turns certain combinations of unconscious mental elements into complex states of consciousness? There seems to be no escape from the requirement that panpsychism posit some kind of 'micro-consciousness'.

The Completeness Problem: The physical worldview as presented by and in fundamental physics seems to be causally complete. But a truly irreducible, basic feature of the world ought to make a causal difference to the world. Thus, panpsychism would seem to threaten a plausible doctrine of causal closure.

The No Sign Problem: There appears to be no direct evidence whatsoever that every element of reality has an associated mentalistic and in fact conscious aspect.

The Not-Mental Problem: Even supposing there was some evidence for a fundamental, non-physical property that provided the world and had some kind of causal influence upon events, why would we call it a mental property?

On the positive side, Seager's viewpoint is that these objections can be resolved through a coherent view of panpsychism. If one takes consciousness to be a truly fundamental feature of the world, then it should not seem odd that it might manifest itself in regions remote from our normal encounters with it and in ways difficult to recognize. There is no apparent sign of any gravitation between sub-atomic particles but since we take gravitation to be fundamental we are willing to accept that the gravitation force between to electrons really does exist. But we must always remember that those philosophers who deny that there is any generation problem for consciousness will be likely to regard the ascription of consciousness to anything that gives no behavioural sign of consciousness as more than implausible but utterly unintelligible. Seager argues that generation problem is real in the sense that one can postulate with at lest bare intelligibility that consciousness is a fundamental feature of the universe.

3.3 SEAGER'S CRITIQUE OF CARRUTHERS

Seager argues that HOT theory makes substantial assumptions. It assumes that the mind's contents divide into the intentional qualia sensations. It also assumes that consciousness requires conceptual thought, and requires apparently sophisticated concepts about mental states as such. It assumes that no mental state is essentially a conscious state. This leads to the assumption that consciousness is always and only of mental states. For him, these assumptions are not plausible and they lead to many objections.

Some objections can be deflected, but problems remain that engage the generation problem and prevent the mentalistic reduction from going through successfully. It is also that HOT cannot place the phenomenal properties of mental states in the proper location. The point is that one cannot reduce consciousness to a kind of thinking or explain consciousness in terms of HOTs. Nonetheless, it might be that consciousness is, as a matter of brute fact, precisely the kind of cognitive operation to which HOT appeals. So too, the neural vector coding theory could, as a matter of brute fact, be what consciousness is.

It is also that HOT theory cannot distinguish those higher-order thoughts, which can confer consciousness upon a mental state from the myriad of possible higher-order thoughts, which do not. In the end, the only characterization of the 'suitable' higher-order thoughts is simply that they are the ones that confer consciousness. Unfortunately, this obviously leaves the generation problem untouched and, worse, makes the HOT theory explanation of consciousness covertly circular and hence no explanation at all.

But, Seager is mistaken. For, HOT theory can be divided into two- actualist HOT theory and dispositionalist HOT theory. His criticism may be applicable to only for the former one, but not for the latter. Carruthers supports a dispositionalist form of HOT theory, according to which the conscious status of an experience consists in its availability to HOT. He argues this on a variety of broadly functional and evolutionary grounds. The following figure shows this theory:

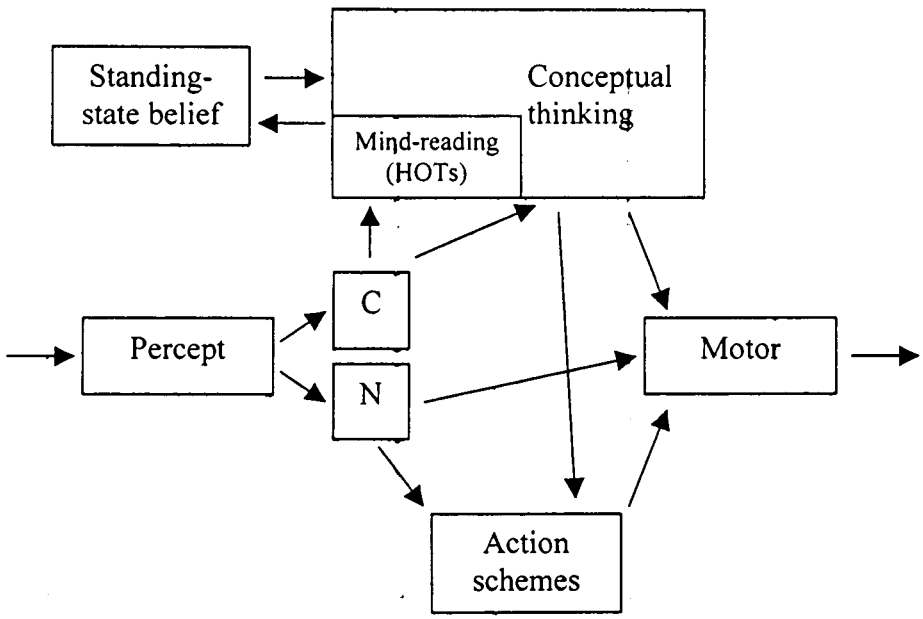

Figure 8: Dispositionalist HOT Theory

He argues that we can propose that conscious experience occurs when perceptual contents are fed into special short-term buffer memory store, whose function is to make those contents available to cause HOTs about themselves, where the causation in question will be direct, not mediated by any form of inference. In the above figure, perceptual contents are regularly passed to two or more short-term memory stores, C (conscious) and N (non-conscious), to be integrated with the subject's goals in the control of action. But, C itself is now defined, *inter alia*, by its relation to HOTs–any of the contents of C being apt to give rise to a HOT about itself, should circumstances demand. The account imposes no particular limit on the amount of

information held in C at any one time. The perceptual states in C are available to two kinds of thinking- first order thinking, generating beliefs and memories and plans relating to the perceived environment: and second-order thinking, drawing on the resources of the mind-reading or 'theory of mind' faculty relating to the nature and occurrence of those perceptual states themselves.

The account of the evolution of phenomenal consciousness, generated by dispositionalist HOT theory, proceeds in two main stages. First, there occurred the evolution of systems, which generate integrated first-order sensory representations, available to conceptualized thought and reasoning. Second is that, there was the evolution of mind reading faculty, whose concepts could be brought to bear on that, very same set of first order representations.

For Carruthers, this dispositionalist HOT theory provides us with a successful reductive explanation of the subjective 'what it-is-likeness' of phenomenally conscious experience.[32] The account relies crucially on a form of consumer semantics to explain how the attachment of a HOT system to our perceptual contents can radically transform those contents, giving them a higher-order dimension of

seeming or *subjectivity*. HOE theory, in contrast, has trouble explaining the 'transparency' of experience. And while actualist HOT theory could in principle advance essentially the same sort of consumer-semantics-based explanation, its insistence on the actual presence of HOTs would then be quite unwarranted, since consumer- semantics theories are themselves dispositionalist in nature. He calls his earlier theory as 'reflexive thinking theory'. According to this theory, consciousness is constituted by an accessibility-relation to occurent higher-order thinkings, where those thinkings are conscious in turn. Conscious experiences are those, which are available to acts of higher-order thinking, which are reflexively available to further higher order thinkings. Conscious occurent thinkings–conscious acts of wondering-whether, judging that, supposing that, and the like–are those, which are made available to further, indefinitely reflexive thinking. And conscious beliefs and desires are those, which are apt to emerge as such reflexively available thinkings.

Later, Carruthers upholds that there is no good reason to think that the higher-order representations, which figure in our account of phenomenal consciousness, are higher-order linguistics descriptions

(HODs). It is possible to think that our capacity for structured HOTs is independent of and/or prior to our capacity for natural language. Thus, he prefers dispositionalist HOT theory than dispositionalist HOD theory and his own reflexive theory.

However, Rosenthal supports an actualist HOT theory, by which the conscious status of any type of occurent mental state, which becomes an account of phenomenal consciousness when the states in question are experiences, such as images or emotions etc, with analog content.[33] Thus, any occurent mental state M, of mine, is conscious= M is disposed to cause an activated belief that I have M, and to cause it non-inferentially. Contrary to this, dispositionalist HOT theory suggests that M conscious are not necessarily actual, but potential. Therefore, the objection that unbelievable amount of cognitive space would have to be taken up with every conscious experience, does not work here. On this account, there need not *actually* be any HOT occurring, in order for a given perceptual state to count as phenomenally conscious.

It may be that actualist HOT theory faces an awkward problem in relation to Higher-Order memory judgments. From the actualist

HOT theory it might seem that the HOT theory results in circularity, i.e., defining consciousness in terms of HOTs. It might also seem that an infinite regress results because a conscious mental state must be accompanied by a HOT, which in turn, must be accompanied by another HOT *ad infinitum*. Nevertheless, the reply from HOT theorists is to remind the objector that when a conscious mental state is a first order world-directed state the higher order thought (HOT) is not itself conscious: otherwise, circularity and an infinite regress would follow. Besides, when the HOT is itself conscious, there is a yet higher-order (or third-order) thought directed at the second order state. In this case, we have introspection, which involves a conscious HOT directed at an inner mental state. When one introspects, one's conscious focus is directed back into one's mind.

Furthermore, Seager treats HOT theory and Dennett's pandemonium model as similar. But, theses theories differ in some aspect. The latter define state-consciousness in general and phenomenal consciousness in particular, in terms of the availability of a state to higher-order linguistic description. Later Dennett argues that consciousness is like fame. Just as there is often no fact of the matter

concerning when, precisely, a person first become famous: and just as in the case of many people there is no fact of the matter concerning whether they are famous. Therefore, there are no facts concerning when, and whether, many perceptual contents become phenomenally conscious. Consciousness consists in multiple effects on many different consumer systems, which can build up incrementally, with no sharp dividing line between its presence and absence. Amongst these, further effects would be, not just higher order thoughts, or descriptions (HOTs, or HODs), but also effects on practical reasoning, and various other first order inferential systems.[34]

Moreover, Carruthers himself considers dispositionalist HOT theory as superior to its main rivals, namely higher-order experience (HOE) theory and actualist HOT theory-in one respect. It can account for the richness of phenomenally conscious experience without having to postulate an implausible extent of on-line higher order cognitive activity, from moment to moment in our phenomenally conscious waking lives. Yet in one respect dispositionalist HOT theory can actually be seen as a variety of HOE theory, since it too, equates phenomenal consciousness with higher-order analog intentional

contents. But, these contents are not realized separately from the first order experiences, which are their targets: and nor is any sort of inner scanning mechanism required to generate them. Rather these higher order contents are created by the availability of first order percepts to a faculty of higher order thoughts, given the truth of some sort of consumer semantics. Carruthers claims that there is no good reason to think that the properties of phenomenal consciousness have any intrinsic connection with natural language, or with conscious thought. Instead, there are convincing reasons to think that HOTs can be entertained independently of and prior to language. In which case, dispositionalist HOT theory is superior to Dennett's higher order description (HOD) theory.

But, on the whole, Seager thinks that the whole defence can be undertaken only as diffidence. Accordingly, what all these reflections give is a 'faintly sickening odour of something put together in the metaphysical laboratory'. Hence his proof for panpsychism needs a closer examination.

3.4 A GENERAL EVALUATION OF CARRUTHERS' STAND

Carruthers' classification of consciousness is based on the view that our common sense conception of the mind can be incorporated easily into science. Accordingly, he attacks the mysterianists argument that phenomenal consciousness, which is involved when one undergoes states with a distinctive subjective phenomenology, or 'feel', is mysterious. He defends a particular kind of naturalistic theory of phenomenal consciousness, known as dispositionalist higher-order thought theory.[35] This theory holds that, phenomenal consciousness consists in a certain sort of intentional content, held in a special-purpose short-term memory store in such a way as to be available to higher order thoughts about the occurrence and nature of those contents. And that in virtue of such availability all of those contents are at the same time higher-order ones, acquiring a dimension of seeming or subjectivity.

In his earlier views, Carruthers supports a reflexive thinking theory, maintaining that a conscious state is one, which is made available to higher order thinking, which is in turn made available reflexively to such thinking. This had the effect of requiring that a

perceptual state had to be available to conscious higher order thought in order to be phenomenally conscious. Then, he holds that phenomenally conscious states consists of analog representations, held in a memory store, which makes them available to higher order thought simpliciter, there is now no requirement that these thoughts, should they occur, must themselves be conscious ones. He also considers phenomenal consciousness as independent from language. He makes a distinction between conscious and non-conscious experience. He proposes a reduction of phenomenal consciousness to some combination of intentional content and causal role.

Seager points out some difficulties with relates to these types of arguments. For him, these are troublesome, in the sense that those make representations depend upon a representational system standing in certain relation to things entirely external to the system itself. These are by far the most popular and most well developed theories of representation currently on offer. However, these theories highlight the peculiar property of consciousness that it can reveal the contents of representations without any reliance upon awareness of the nature of the representational vehicles that manage to carry those contents.

Carruthers makes a classification in order to compare and contrast other theories of phenomenal consciousness with his dispositionalist theory. His claim that his dispositionalist theory is different from all the other theories may be supported. For, those explain the phenomenally conscious status of a mental state in terms of the subject's consciousness, or awareness, *of* that state. They construe consciousness in terms of the kind of transitive consciousness or awareness, which is distinctive perception or of intentional thought, only targeted, in each case, on another mental state, which is thereby rendered conscious. It is true that we can defend his claim that his theory has been constructed by reflection on a variety of data, including not only common sense-intuitions, but also recent discoveries in psychology and cognitive neuro science. And its goal is substantive truth, not analysis of our folk-psychological concepts, nor mere preservation of our common-sense intuitions.

In his taxonomy, the methods, which he used, have rather in common with theoretical science than with much of philosophy. In this theory, he aims to construe an idea, which can explain a range of different forms of data, and which can obtain successfully with

surrounding scientific beliefs. He rejects neuroscientific solution to the problem of phenomenal consciousness. For him, it is possible to stand within the limit of common sense psychological notions of thought, perception and so on. However, he agrees that cognitive neuroscience is relevant to the explanation of phenomenal consciousness, because it will be important for understanding the nature and detailed profile of our first order perceptual contents. But, since such contents can and do occur in the absence of phenomenal consciousness, we may need to move beyond cognitive neuroscience in giving an account of the subjective feel of experience.

Even though there are criticisms, Rosenthal continues to defend his version of HOT theory in face of criticism made by dynamic theories.[36]

3.5 CONCLUSION

The major classifications, which are given by Carruthers and Seager, points out two aspects of consciousness. They are the phenomenal and representational aspect. Even though these categorizations are not mutually exclusive, both have separate

viewpoints. In his classification, Carruthers supports Dispositionalist higher order theory of consciousness. Seager defends a kind of panpsychism. Both cannot be supported unless they are shown to have a certain poise to solve the group of problems we see in the next chapter. This is especially true in the face of mutual criticism each one trades against each other. However, both integrate methodologies and perspectives from psychology, philosophy, neuroscience, cognitive science and other disciplines in a critical manner. But still they have to a long way to say the final word on the problem of consciousness.

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CHAPTER IV

PROBLEMS AND ISSUES IN THE CONCEPT OF CONSCIOUSNESS

4.1 ARGUMENTS FROM SUPERVENIENCE

Recently thinkers are trying to find out a place for the mind in the physical world. In 50s and 60s Smart and Feigl proposed their views in the form of identity theory.[1] They argued that mental events are identical with brain states. Though short lived this theory can set the basic parameters for the mind-body debates. The destruction of mind-brain identity theory is caused by the two major objections by Hilary Putnam[2] and Donald Davidson[3] through their multiple realizability argument and anomalous monism respectively. The monistic component of the anomalous monism insisted that all individual events are physical events subject to laws of physics. His anamolous monism does not tell much more about mind-body relation.

In his 'Mental Events',[4] he argues that "Although the position I describe denies there are psychophysical laws, it is consistent with the view that the mental characteristics are in some sense dependent or supervenient on physical characteristics. Such supervenience might be taken to mean that there cannot be two events alike in all physical respects but differing in some mental respects, or that an object cannot alter in some mental respect without altering in some physical respect.

During the past two decades the concept of supervenience has been increasing service in the philosophy of mind. Its core idea is that the mental is supervenient on the physical. That is the mental character of a thing is wholly determined by its physical nature. Mind-body supervenience has also been invoked in arguments for or against certain specific claims about the mental and has been used to device a solution to some central problems about the mind. The idea of supervenience is usually thought to have originated in moral theory.

Supervenience has been a buzzword in the philosophy of mind since the early seventies. John Heil argues that supervenience argument is supported by naturalism[5]. A commitment to naturalism is a commitment to supervenience, or something like it. He introduces a

supervenience argument not as a solution to the mind body problem, but as affording a framework within which it may be possible to sharpen an appreciation of what that problem encompasses. His supervenience hypothesis holds that the internal characteristics of agents supervene on their non-intentional, physical characteristics. He also suggests that externalism and the supervenience hypothesis are perfectly, compatible, if we allow the supervenience 'base' of intentional characteristics to the 'broad'.

He advocates that supervenience relations are by no means confined to the mental domain. For example, liquidity might be brought to supervene on molecular structure. In other words, some thing is being liquid apparently 'depends on' and is determined by its possessing a certain sort of molecular structure. It follows that substances possessing intentional molecular structures will be identical with respect to liquidity. It also follows that, should a substance change its state, cease to be liquid, and become solid, then its 'underlying' molecular structure must change as well. It means its change in state is due to some change at the molecular level.

The concept of supervenience is required if the world is considered as layered or sediment as consisting of hierarchies of characteristics in which the upper tiers of the hierarchy are fixed by those in the lower tiers. There are alternative to this layered picture of world. We might regard every characteristic as standing on its own. Something is being liquid might be a characteristic it possessed along side the characteristic of possessing a certain molecular structure. And it's possessing that molecular structure would be a feature it possessed along side the characteristics of possessing certain anomic features. Alternatively, we might imagine that liquidity is nothing but molecular structure, what appears to us to be distinct characteristics is in fact one and the same. Non-hierarchical conception encourages us to abandon efforts to explain or understand higher - level characteristics in terms of those at a lower level. In Heil's view, supervenience hypothesis provides a powerful and natural way of fitting together elements of our overall picture of intelligent agency. An agent's state of mind depend on and are determined by the agent's biological condition, that states of mind are possessed in virtue of agent's possession of certain biological characteristics. He insists that experimental work on brains

does not provide direct evidences for the supervenience hypothesis. Whether state of mind supervene on agent's physical characteristics is an empirical question, but the supervenience relation itself is metaphysically saturated. In this respect supervenience resembles causality. In the case of causality we advance casual laws that are both explanatory of and confirmed by their instances. According to Kim, who made much use of the concept in the physicalist theory of mind, supervenience is a relation between two *sets* of properties, the *supervenient* properties and their *base* properties.

"Mental properties supervene on physical properties in that necessarily for any mental property M, if anything has M at time t, there exists a physical base (or subvenient) property P such that it has p at t, and necessarily anything that has P at a time M at that time."[6]

E.g. If a person experiences pain, it must be the case that person instantiated some physical property, she must experience pain. Every mental problem has a physical base that guarantees its instantiations. Without a physical base, a mental property cannot be instantiated.

"Mental Properties supervene on physical properties, is that necessarily any two things (in the same of different possible worlds) indiscernible in all physical properties are indiscernible in mental respects."[7]

Under mind-body supervenience a physical base property, P, for mental property M guarantees, as a matter of necessity, the occurrence of M, that is necessarily if something instantiates P, it instantiates M. One mental property has multiple physical bases. An example of pain in human may be based on one neural property and another instance of pain that is in a reptile may be grounded in another. The idea of supervenience is a form of covaritiion between the two families of properties. Such convariances can occur in the absence of a metaphysical dependence or determination relation. The idea of supervenience introduced into discussion of mind-body problem by D. Davidson in 1970.[8] He argues that supervenience is consistent with the irreducibility of the supervenient to their subvenient properties.

There are three ideas, which are clearly related with supervenience. One is property covariation. If two things are indiscernible in base properties, they must be indiscernible in

supervenient properties. The second one is dependence. Supervenient properties are dependent as, or determined by their subvenient bases. The last and third idea is non-reducibility. Emergentists firstly use the idea of supervenience in connection with mind-body problem.[9] They used supervenient as a stylistic variant of emergent. There is similarity between emergence and supervenience. Emergentism holds that higher-level properties notably consciousness and other mental properties emerge when and only when an appropriate set of lower level basal conditions are present. The occurrence of the higher properties is determined by and dependent on the instantiation of appropriate lower-level properties and relation. In spite of this, emergent properties were held to be 'genuinely novel' characteristics irreducible to the lower-level processes from which they emerge. The concept of emergence also contains the three components of supervenience, property covariance, dependence and non-reducibility. And both emergence and supervenience can be regarded as the first systematic formulation of non-reductive physicalism.

The core idea of mind-body supervenience is that indiscernibly with respect to physical properties entails and sensibility with respect

to mental properties. There are two sets of properties one is M, consisting mental properties and the other is P, physical properties. The supervenience of events and states can be explained in terms of property supervenience.

The thesis that properties of whole are fixed by the properties and relations that characterize their parts is known as mereological supervenience. This macro-no micro theory holds that world is the way it is because the micro world is the way it is. It is the same in the case of mental properties. If M is a mental property had by something X, then any Y that is micro indiscernible from X will also have M. Thus, mental properties are macro properties supervening on micro properties.

Physical realizationism entails the supervenience thesis Mental properties must be physically realized. They cannot have non-physical realization. Suppose that P realizes M in systems of kinds S. From the viewpoint of realization, P is nomologically sufficient for M. Therefore, if <Pi ... Pn> is a realizer of Mi, it follows that the Ms are supervenient on the Ps. According to physical realizationism, the mental supervenes on the physical because mental properties are second -order functional

properties with physical realizers. And there is an explanation of mental physical correlations.

Local and Global Supervenience

David Chalmers' notion of suprvenience holds that one set of facts can fully determined by another set of facts.[10] The physical facts about the world seem to determine the biological facts. Supervenience is a relation between two sets of properties. B-properties are intuitively, the high-level properties and A-properties, which are the more basic low-level properties. B-Properties supervene on A-properties if no two possible situations are identical with respect to their A-properties while differing in their B-properties.

If A-properties of an individual determine the B-properties of that individual, B-properties supervene locally on A-properties. e.g. Shape supervene locally on physical properties. That is any two objects in the same physical proporties will necessarily have the same shape. Global supervenience claims that B-properties supervene globally on A-properties, if the A-facts about the entire world determine the B-facts. Local supervenience implies global supervenience, but not vice

versa. For instance, it is possible that biological properties supervene globally on physical properties in that any world physically identical to ours would also be biologically identical. But they do not supervene locally.

Logical and Natural Supervenience

Another significant distinction is between logical and natural supervenience. Logical supervenience is conceptual supervenience and natural supervenience empirical supervenience. B-properties supervene logically on A-properties if no two logically possible situation are identical with respect to their A-properties but distinct with respect to their possible worlds. This logical possible world is independent of formal considerations.

Naturally possible situations are one that is occurring in nature, without violating any natural laws. Natural supervenience holds that B-properties supervene naturally on A-properties if any two naturally possible situations with the same A-properties have the same B-properties. Some logically possible situation cannot be naturally

possible. But any situation that is naturally possible can be logically possible.

Logical supervenience implies natural supervenience. If any two logically possible situations with the same A-properties have the same B-properties, then any two naturally possible situations also. It is difficult to find cases of natural supervenience on the set of physical properties without logical supervenience. But consciousness is a useful example. Consciousness is naturally supervene on physical properties in the natural world. Any two physically identical creatures will have qualitatively identical experiences. It is not clear that consciousness is logically supervene on physical properties. It is logically possible that a creature physically identical to a conscious creature might have no conscious experiences. If this is so, then consciousness supervenes naturally but not logically on the physical. Only the laws of nature assure the necessary link between physical structure and experience. Any logical or conceptual force cannot do it. The distinction between natural supervenience and logical supervenience is:

If B-properties supervene logically on A-properties, then once God (hypothetically) creates a world with certain A-acts, the B-facts

come along for free as an automatic consequence. If B-properties merely supervene naturally on A-properties, however, then after making sure of the A-facts, God has to do more work in order to make sure of the B-facts. He has to make sure there is a law relating the A-facts and the B-facts (Kripke 1972).[11]

J. Kim explains mind-body supervenience as the thesis that any two things, or events, that, are exactly alike in all physical respects cannot differ in mental respects.[12] There can be no mental difference unless there is physical difference. The idea that each mental-event or state kind has a neural correlate is a form of mind-body supervenience. It assumes that if two organisms are in identical neural states, they cannot be in different mental states.

(1) If N is a neural state on which mental property M supervenes, then N is a sufficient condition for the occurrence of M; (2) M can have multiple superveniance bases N1...N2... each of which is sufficient to give rise to M; (3) M is distinct from each of its many bases, N1,N2...[13]

The sudden pain that felt in ones elbow caused the person to wince. Mind-body supervenience says that the pain has a

supervenience base, a certain neural state N. We can schematize this as follows:

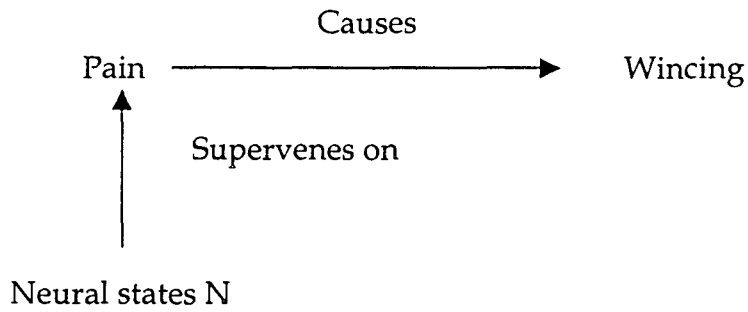

Figure 9: Mind - body supervenience

If neuraal state N is a supervenience base for pain, it is lawfully sufficient for pain. If pain is a sufficient cause of wincing N is casually sufficient for wincing, as schematised below:

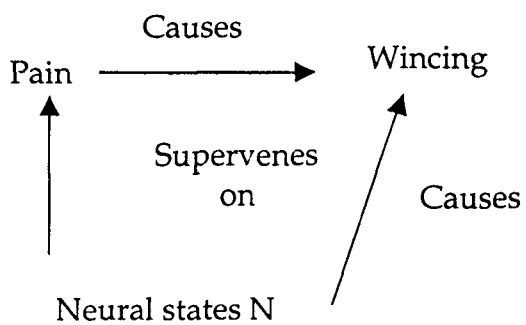

Figure 10: Causal Supervenience

This picture shows that there are two distinct causes for wincing, the pain and the neural state N. It means that wincing is causally overdetermined. It follows that all cases of mental causation are cases

of overdetermination. The diagram presents an unstable picture that is, the causal relation it depicts are not coherent. To get a coherent picture we have to redraw this picture.

This *first* model is the epiphenomenalist model. This treats pain as an epiphenomenon of neural state N, denying it a causal role in the production of the wincing. N taken by itself is a full cause of it as shown below:

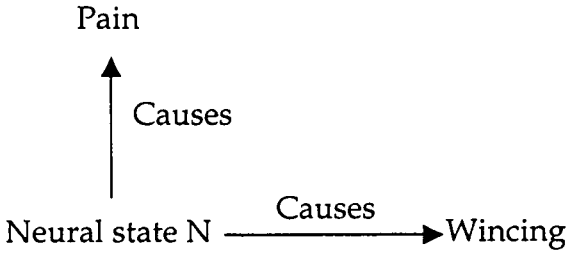

Figure 11: Epiphenomenalist Model of Supervenience

The *second* one is supervenient causation model. This approach views that pain's cause of the wincing as consisting in its supervenience on neural state N, which causes a certain physiological event on which the wincing supervenes. It takes causal processes at the micro level as fundamental and considers casual processes at the macro level. The following diagram represents this approach:

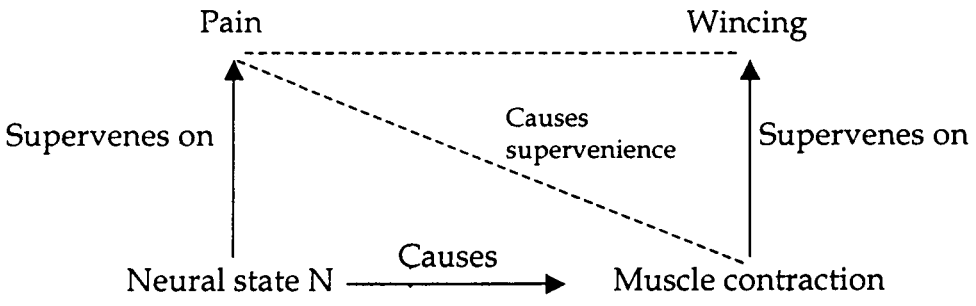

Figure 12: Supervenient Causation Model

The pain supervenes on N and the wincing supervenes on the contraction of a certain group of muscles; the pain's causation of wincing consists of its supervenience base of the wincing. Generally, an instantiation of a property is a supervenience cause of an event in virtue of the fact that its supervenience base causes the event.

The *third* one is the reductionist model. The most elegant and simplest solution is reductionism. This approach identifies pain is the neural state N. Since pain=N, there is here only one cause of wincing, and all the puzzles with our original triangular diagram vanish.

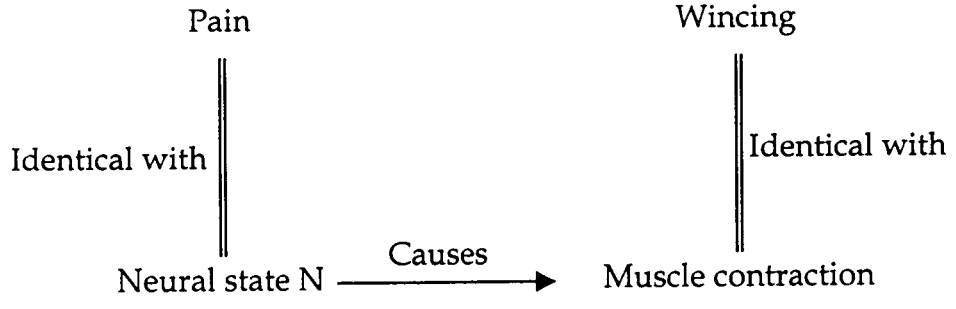

Figure 13: Micro Macro Supervenience

But most of philosophers of mind reject reductionism. So this is not a sufficient argument. It was Kim who reviewed reductionism through its many operative stages for the last four decades. His own brand of reductionism has a clear objective to locate mind in the physical world. The reigning idea here is mental causation. Kim argued that:[14]

1. If physics is causally closed, then all causal properties are causal properties (causal closure).
2. If mind is not causally closed, then mind is causally excluded (causal exclusion).
3. Mental properties supervene on physical properties (supervenience).
4. Mental properties are multiply realized (multiple realisability).

If (1) - (4) is true then either

5. There are prior mental properties that are causally efficacious. (Causal chain)

(Against *ex nihilo ex fit*)

6. Mental and physical causes are discoverable for every event.

(Over determination)

The fifth violates causal closure and it is to be rejected. Given the casual closure of physics, mental properties can only the casual properties *via* physical properties that *realize* them. So overdetermination (6) must be rejected. So,

(7) Physical casual explanation of behaviour 'screen off' or 'exclude' mental casual explanation.

Kim is under attack for excluding mental causalities, but if mental causation is neurobiological (what happens at the cellular and molecular level), then the above argument cannot be valid. This is what is recommended by the new wave reductionism. That is, all over psychological explanations become *otiose*, if neurobiological explanations become available, as real explanations. So, *contra* Kim, we need not exclude but at the same time they become *otiose* when improved upon by neurobiological (cellular and molecular) explanation. That is to say, neurobiological explanation can be shown to explain what is left unexplained by psychological explanation. No

eliminativism is intended because such explanations are only in the *formative stage*. But psychological explanations also play *heuristic role*. Thus Kim needs improvement.

So the prevailing climate, the notion of supervenience not much to contribute towards anything like the neurobiological basis. There is the transition to the second major area of dispute in the next session.

4.2. ARGUMENTS FROM OVERDETERMINATION

According to Kim (1998), there are three *prima facie* difficulties for mental causation.[15] They are the mental anomalism, computationalism and content externalism, and causal exclusion. The first problem holds that there are no causal laws about psychological phenomena. There is no such laws connecting mental events with physical events and no such laws connecting mental events with other mental events. Mental causation requires mental events to instantiate laws, but mental anomalism claims there are no laws about mental events. A recent approach by Davidson invokes supervenience of mental as the physical to explain the causal relevance of the mental.

The second problem is of extrinsic mental properties. Syntacticalism holds that only syntactic properties of mental states can be usually relevant to behaviour causation. This leads to the assumption that the intentional properties of mental states are causally irrelevant. This arises in the context of computationalism, which claims mental processes as computational processes as internal representation, on the model of information processing in digital computers. Computational processes are sensitive to the syntax of the representations that are being manipulated. If mental activities are computational processes on beliefs, desires and such, the syntactic shapes of these states are causally relevant. A given intentional state of an organism instantiates a certain semantic property is a relational fact, a fact that essentially involves the organism's relationship to various external environmental and historical factors. This makes the semantic properties relational, or extrinsic. The question here is: How can extrinsic, relational properties be causally efficacious in behaviour production.

The third problem about mental causation is the problem of causal exclusion. Suppose that mental event m, occurring at time t,

causes physical event p, and suppose that this causal relation holds in virtue of the fact that m is an event of mental kind M and p an event of physical kind P. The problem here is that, does p also have a physical cause at t, an event of some physical kind N.

Mental event m is a cause of physical event p but deny that p has a physical cause at t would be a clear violation of the causal closure of the physical domain. The physical cause threatens to exclude the mental cause. This problem raises the question: Given that every physical event that has a cause has a physical cause, how is a mental cause also possible?

Mind-body supervenience posits mental phenomena within physical domain. The physical determines the mental. Then, the mental does not constitute an ontologically independent domain. Mind-body supervenience, in Kim's view is entailed by minimal physicalism and physical realisation. In his view, mental causation is unintelligible. Mind-body supervenience puts each mental phenomenon in the physical domain by providing for it a set of physical conditions that are nomologically sufficient for it and on which its occurrence depends. This theme holds that unless an appropriate physical base condition is

present, mental property cannot be instantiated. If such a basis were absent it would not occur. Mind-body supervenience assumes that mental-to-mental causation implies mental-to-physical causation.

The over determination argument states that:

1. Every physical effect has causally determined by physical events alone.
2. Mental events cause physical events.
3. The physical effects of mental events are not generally over determined. Therefore
4. Mental events are physical events.

There are three distinct problems of mental causation.[16] Among them, the exclusion problem arises from the supervenient argument and this is the principal problem of mental causation. The other two problems are mental anomaly problem and the extrinsicness problem. These problems are independent of physicalist commitments and can arise outside the physicalist framework. The exclusion problem arises from the physicalist outlook. Some thinkers argue that mental causation is real. The possibility of human agency evidently requires

that our mental states have causal effects in the physical world. In voluntary actions our beliefs and desires, or intentions and decisions must cause our limbs to move in appropriate ways and causing the objects around us to be rearranged.

Secondly, the possibility of human knowledge presupposes the reality of mental causation. Perception requires the causation of perceptional experience and beliefs by physical objects and events around us. The possibility of psychology as a theoretical science capable of generating law-based explanation of human behaviour depends on the reality of mental causation. Three prima facie difficulties for mental causation are mental anomalism, computationalism and content externalism and causal exclusion. The first one claims that there are no causal laws about psychological phenomena.

(a) The problem of anomalous mental properties

Davidson's version of this doctrine holds that there are no causal laws about psychological phenomena. This means no such laws connecting mental events with physical events. And also such laws do

not connect mental events with other mental events. Mental causation requires mental events to instantiate laws, but mental anomalism says that there are no laws about mental events. Davidson says that true mental events in causal relation must instantiate laws. Since there are no psychological laws they instantiate physical laws. This shows that mental events fall under physical kinds. This means that for any event to enter into a causal relation, it must be covered by a physical law and hence be part of the physical domain. Causal relations can obtain only between physical events covered by physical laws and some of these events are also mental events. The causal structure of world is entirely due to the prevailing physical laws. Mental events are causally efficacious therefore only because they are identical with causally efficacious physical events.

(b) The problem of extrinsic mental properties

In particular to behaviour causation, the syntactic properties of mental states are causally relevant. This is the view hold by syntacticalism. It argues that the intentional properties of mental states are causally irrelevant. Syntacticalism arises in the context of computationalism, which claims that mental processes are

computational processes. The shapes of symbols have determined the course of computation. Likewise if mental activities are computational processes as beliefs, desires and such, the syntactic shapes of these states are causally relevant, not their representational content. If two organisms are identical in internal state at a given time, they will emit identical motor output. Two organisms, which are identical in intrinsic properties, can differ in semantical properties. On this earth we have the belief that water is wet and our exact physical duplication on Twin Earth believe that XYZ is wet. Frogs on the earth have the belief that a fly is flitting across its visual field, but frogs on another planet without flies, believe that an schmy is flitting across its visual field. Therefore a given intentional state of an organism instantiates a certain semantic property is a relational fact. This fact involves the organism's relation to external environmental and historical factors, which makes semantic properties relational or extrinsic. The problem is that mental properties particularly content properties are relational properties extrinsic to the organisms instantiating them.

(c) The problem of causal exclusion

The third one is that we have somehow put together an account of how mental events can be causes of physical events. That mental event m, occurring at t, causes physical event p, and this causal relation holds in virtue of the fact that m is an event of mental kind m and p an event of physical kind p. To recognize mental event m as a cause of physical event p but deny that p has a physical cause at t would be a clear violation of the causal closure of the physical domain. But to admit that p has also a physical cause p*, at t arises the question that given that p has a physical cause p, what causal work is left for m to contributed.

The physical cause therefore threatens to exclude the mental cause. This is the problem of causal exclusion. Mind-body supervenience and physical realisations are the two prima facie difficulties for mental causation. Physical realisation is the thesis that mental properties are instantiated in virtue of being realised by physical properties in physical systems.

If mind-body supervenience fails, there is no visible way of understanding the possibility of mental causation. Mind-body supervenience brings mental phenomena within the range of the physical and the physical determines the mental. In this case, the mental does not constitute an ontologically independent domain, which injects causal influences into the physical domain from the outside.

In the case of mental-to-mental causation a mental property causes an instance of another mental property. An instance of mental property m causes another mental property m* to be instantiated. m* has a physical supervenience base p*. m* occurs because its p* occurs. m caused m* by causing p*. To cause a supervenient property to be instantiated is its base property also to be instantiated. If causation is grounded in nomological sufficiency, p qualifies as a cause of p*. Since p is sufficient for m and m is sufficient for p*, p is sufficient for p*. Both m and p seem eligible as a sufficient cause of p*. Here is a threat of causal over determination, which involves a causal chain from p to m and then to p*. Hence m is an intermediate causal link. As with the causal chain proposal it involves a violation of the physical closure.

The instance of p* is causally over determined by two sufficient causes, p and m. The over determination approach holds that the mental cause causes a physical events. Then the principle of causal closure of the physical domain no longer hold p caused p*, and m supervenes on p and m* supervenes on p*. There are regularities between m-instances and m*-instances. These regularities are low-based and able to support appropriate counterfactuals. The m-to-m* and m-to-p* causal relations are only apparent, arising out of a given causal process from p to p*. We are reluctant to accept over determination because it is wrong to postulate coincidences.

Kim accepts the principle of causal over determination. He is not in favour of basic properties and emergent properties, but reduction to aggregate and aggregates of properties. There is only contingent relation, no necessary relation. Both Kim and Lowe accept that functionalism is required for mind-body relation. Kim wants to change the bi-conditionals of the bridge laws into one about identity and proceeds to develop an identity explanation. Lowe does not seek identity explanation. Lowe's formulation is:[17]

1. At every time at which a physical state has a cause, it has a fully sufficient physical cause. This is the principle of the causal closure of the physical.

2. Some physical states have mental states, amongst their causes. This is the principle of psychophysical causation.

3. When a physical state has a mental state amongst its causes, it is rarely if ever causally over determined by that mental state and some other physical states. This is the principle of causal non-over determination.

The first one means that if p is a physical state which has a cause existing at a certain time t, then there is a non-empty set of physical states, all of them existing at t, such that each of these states is a cause of p and collectively these states are causally sufficient for p. Second premise is self-explanatory. The third premise arises out the causal over determination. The conclusion states that at least some mental states are identical with certain physical states.

The second premise holds that m is a mental state, existing at time t, and that m is a cause of a certain physical state, p. And in

accordance with first premise there does non-empty set of physical states; all of them exist at t, which are collectively causally sufficient for p. These physical states are p_1, p_2 ... p_n. In accordance with the third premise p is not causally over determined by m and any one of these physical states. We have assumed that m is a cause of p but we have also assumed that the physical states p_1, p_2... p_n are collectively causally sufficient for p. Thus it is apparent that even if m had not existed but all of p_1, p_2... p_n had still existed. M is not identical with any of p_1, p_2... p_n. P is causally over determined by m. It is true that some mental states are identical with certain physical states. Causation is a transitive relation. Of a state S, is a cause of state S_2, and S_2 is a cause state S_3, then it follows that S_1 is a cause of S_3. If S_1 is fully sufficient cause of S_2, and S_2 is a fully sufficient cause of S_3, then S_1 is a fully sufficient cause of S_3. If S_1 and S_2 are then both fully sufficient causes of S_2 and S_2 is a fully sufficient cause of S_3, this does not imply that S_3 is causally over determined by S_1 and S_2. Lowe says that the mental states stand in causal relation to some physical states and the systematic causal overdetermination is not a feature of psychophysical causation.

We can reject causal over determination without falling into Lowe's position, which uses it to develop a non-Cartesian 'casual loop'. We can reject also multiple realizability as well as supervenience, but hold on to some variant of inter-theoretic reduction that is accepted as inter-theoretic reductionism as practiced by neurobiologists, that is fully empirically supported. Lowe firstly argues for and against. His second position is taken to use it for a different rather contrary conclusion. So we can conclude that overdetermination is a hot bag of fucks.

4.3. ARGUMENTS FROM QUALIA

The problem of consciousness still remains irreducible and the mind-body problem also remains unsolvable. We cannot reduce the subjective, first person sensation of pain into the objective, third-personal physiological facts. The first-person features are entirely different from third-person features. Consciousness cannot reduce like other phenomena. Other phenomena are depended on the distinction between the objective physical reality and subjective physical reality and eliminating the appearance from the phenomena that have been reduced.

On the other hand, in the case of consciousness reality is the appearance. Generally, the pattern of reduction depends on rejecting the subjective epistemic basis for the presence of a property. Consciousness is an exception. Consciousness is a surface feature of certain physical system. But it cannot redefine in terms of an underlying microstructure. The irreducibility of consciousness is due to the trivial consequences of definitional practices. In Searle's view, consciousness is not strange and wonderful phenomenon.[18]

Mental states are totally dependent on corresponding neurophysiological states in the sense that a difference in mental states would necessarily involve a corresponding difference in neurophysiological states. In Searle's view, there are two notions of consciousness. One is constitutive notion and the other is causal notion. He claims that causal notions only are relevant for the discussion of the mind-body problem.

In current debates of cognitive science information processing models are popular, but they do not constitute the sole dominant paradigms any more. The functional diagrammatic depictions of consciousness seem to leave out something important, the subjective

experiential aspect of consciousness. Qualia were the single most recalcitrant notion that resisted the rising wave of materialists in their program of giving an account of the mental means of identity theory. The problem of qualia was the main constraint of functionalism that the only aspect of mentality that escaped from the net of functional explanation. The critics of functionalist framework can provide an account of all components of mental life but cannot capture its qualia.

Qualia include the warp it feels to see, hear and smell, the way it feels to have a pain. It means, what it is to have mental states. Qualia are experiential proportion of sensations, feelings, perceptions and thoughts and desires as well. The existence of qualia is controversial. Controversality is that whether qualia can be characterised in intentional, functional or purely cognitive terms. Opponents of qualia think that the content of experience is intentional content or that are functionally definable or that to have a qualitative state is to have a state that is monitored in a certain way or accompanied by a thought to the effect that I have that state.

The most powerful arguments in favour of qualia actually presuppose a physicalist doctrine, the supervenience of qualia on the

brain. But the most puzzling thing about qualia is how they relate to the physical world. Sometimes this is put in terms of the explanatory gap, the idea that nothing we know or can conceive of knowing about the brain can explain why qualia feel the way they do. The explanatory gap is closely related to the thought experiments that dominate the literature on qualia.

One of the though experiments is Jackson's (1986) Mary argument.[19] Mary is a well-known physicalist and neuroscientist, who were lived in black-and-white room. She knows everything about the colour vision. But when she came out of the room she learns a new fact that is, what it is like to see red. Jackson claims that what it is like to see red cannot be a functional or physical fact.

There is objection to Jackson's (Horgan, 1984b; Peacocke, 1989; Loar, 1990; Papineau, 1993; Van Gulick, 1993) argument. What Mary acquires when she sees red is a new phenomenal concept, a recognitional disposition that allows her to pick out a certain type of phenomenal feel. This new phenomenal concept is a constituent of genuinely new knowledge - knowledge of what it is like to see red. But new phenomenal concept picks out old properties, properties picked

out by physical or functional concepts that she already had. So the new knowledge is just a new way of knowing old facts. Before leaving the room, she knew what it is like to see red in a third-person way. After leaving the room, she acquires a new way of knowing the same fact. The recognition disposition account indicates how qualia could turn out to be relational.

David Chalmers tries to answer the question that what sort of physical system can give rise to conscious experience. Most of the thinkers believe that brain properties are responsible; but what are the relevant properties remain unclear. Some have suggested biochemical properties; some others suggested quantum-mechanical properties and for many others they are uncertain. A natural suggestion is that system's functional organisation is responsible for experiences. The chemical and quantum substrates of the brain are relevant indirectly to the existence of consciousness. Brain's abstract causal organisation that might be realised in many different physical substrates is central. In Chalmers' view, experience is invariant across systems with the same fine-grained functional organisation.[20] A functional organisation is specifying (1) a number of abstract components, (2) for each

component, a number of different possible states, and (3) a system of dependency relations, specifying how the states of each component depends on the previous states of all components and on inputs to the system, and how outputs from the system depend on previous component states.

Some have thought that for a system to be conscious it must have the right sort of biochemical make up. Then a metallic robot or a silicon-based computer could never have experiences. Some others have recognized that a robot or a computer might be conscious if it were organised properly, but nevertheless have experiences. These two sorts of objections know as the absent qualia and inverted qualia objections to functionalist theories of consciousness. As assumed by the research program of cognitive science, human beings can be described computationally. Description of a system that realises whatever functional organisation might be specified, but suppose that it lacks conscious experience.

Thomas Nagel characterises the problem of absent qualia as follows: "The subjective character of experience ... is not captured by any of the familiar, recently devised reductive analyses of the mental,

for all of them are logically compatible with its absence. (E.g.) It is not analysable in terms of any explanatory system of functional states, since these could be ascribed to robots of automatic that behaved like people though they experienced nothing."[21] The possibility of absent qualia is closely related to the doctrine of epi-phenomenalism and thus to the possibility o 'zombies'. Phenomenal properties of an experience exist only as they belong to someone's experience.

Block (1980) points out that the functional organisation of the brain might be instantiated by the population of China, if they were organised appropriately, and argues that it is bizarre to suppose that this world somehow give rise to a group mind.[22] According to Searle (1980), a given organisation might be realised by a sequence of water pipes, or a set of wind-machines, but argues that these systems would not be conscious.[23]

The possibility of inverted spectrum requires an inversion of a particular set of phenomenal qualities in some sensory domain, such as the hues in one's colour space. Argument for inverted qualia is illustrated by consideration about experiences of colour. It is possible that a system might make precisely the same colour discriminations

that one does, but that when confronted by red objects it has the kind of experience that one has when confronted by blue objects. Things we both call 'red' look to you the way things we both call 'green' look to me, even though we both are functionally identical. The possibility that the brain states that I have when I see red things is the same that you have when you see green things, and conversely. That is our experiences are inverted. Here what is assumed that a supervenience doctrine that the qualitative content of a state supervenes on physiological properties of the brain. This might happen when the systems are functionally isomorphic. Even if the appropriate functional organisation suffices for the existence of conscious experiences, it does not determine their specific nature. The specific nature of experiences must be dependent on non-organisational properties, such as specific neurophysiological properties. Chalmers claims that absent qualia and inverted qualia are empirically impossible.

These arguments involve thought experiments about gradual neural replacement, and take the form a reduction. The first thought-experiment demonstrates that if absent qualia are possible, then a phenomenon called fading qualia is possible. But there are good

reasons to believe that fading qualia are impossible. The second argument demonstrates that if absent qualia or inverted qualia are possible, then the phenomenon called dancing qualia is possible. In the first thought experiment, we assume that absent qualia are empirically possible. There can be a system with the same functional organisation as a conscious system, but lacks conscious experience entirely due to some difference in non-organisational properties. This is because the system is made of silicon chips rather than neurons. This is a functional isomorph robot. The causal patterns of the robots' processing system are similar to a conscious system. But there is nothing it is like to be a robot. Chalmer claims that fading qualia may be logically plausible. He presents fading qualia argument as an objection to absent qualia argument. Another argument, which presents to show the natural possibility of absent qualia is the phenomenon of blind sight. Blind sight patient are functionally similar to us in relevant ways but they lack visual experience. So, the functional organisation of visual processing does not determine the presence or absence of experience. The fading qualia argument suggests that one's functional isomorphs will have conscious experience, but it does not establish that isomorphs

will have the same sort of conscious experience. Functional organisation determines-the existence or absence of conscious experience, but it might not determine the nature of experience.

There are also thinkers who reject the qualia. In "Quining Qualia", Dennett tries to establish that "conscious experience has no properties that are special in any of the ways qualia have been supposed to be special."[24] He tries to deny the existence of qualia and attempts to identify qualia with the "properties of a subject's mental states that are: (1) ineffable, (2) intrinsic, (3) private and (4) directly or immediately apprehensible in consciousness". He argues that the concept of qualia is inherently confused. There are no qualia at all.

Paul and Patricia Churchland promote a realist attitude toward qualia.[25] They claim that qualia will turn out to be properties intrinsic to the nervous system, such as spiking frequencies in the brain. They argue that "the functionalist need not, and perhaps should not, attempt to deny the existence of qualia. Rather, he should be realist about qualia... But at the end, the nature of specific qualia will be revealed by neurophysiology, neurochemistry and neurophysics."

Owen Flanagan (1992) believes that an effort of triangulation involving phenomenology, psychology, and neuroscience, which are a natural method, can penetrate the mystery of qualia and help dispel it.[26] In his world "those who would quine qualia are bothered by the fact that they seem mysterious - essentially private, ineffable and not subject to third-person evaluation. Qualia are none of these things." Qualia pick out the types of qualitative experience. Not all qualia are sensational. Conscious moods, emotions, beliefs, desires, possibly even what it is like to be one have distinct qualitative character. In his view, a theory of subjective consciousness gains its motivation from the need to explain the heterogeneous qualitative character of our mental life.

According to Fred Dretske's (1995) representational naturalism, "all mental facts are representational facts and hence all facts about qualia are also representational."[27] He identifies qualia as properties that one's experience represents objects as having. Qualia do not have to be given a functional characterisation or identified with neurophysiological properties. He locates qualia outside the mind, according to his externalist theory of mind. This view gives qualia a realist stance from a naturalist framework.

Block brings the qualia issue to the problem of explanatory gap.[28] Block does not agree with Churchlandian conception that the nature of qualia will explain with the help of neuroscience. He doesn't accept Flanagian interdisciplinary method and Dretskean representational framework. On the other hand, he raires more general doubts about the explanatory power of any mechanistic, functionalist, or physicalistic schomes to account for the presence or emergence of qualia. He argues that "no physical mechanisms seems very intuitively plausible as a sect of qualia, least of all brain... Since we know that we are brain-headed systems, and that we have qualia, we know that brain-head systems can have qualia. So eventhough we have no theory of qualia which explains how this is possible, we have overwhelming reason to disregard whatever prime facie doubt there is about qualia of brain-headed systems".

Supporters of qualia claim that there is obviously something in their mental life that can be theorized about under the name phenomenal consciousness. And the opponents state that there is no such thing to point at in their own experience. All these arguments point to one thing. That is qualia is what goes on in our brain. Qualia

states are brain-states rather than phenomenal states. They are neural states. Is Qualia a fantasy? The new wave reductionism suggests so. The empirical support for this suggestion is that we have neurobiologically analogous cases of inverted earth or absent qualia. So the need for thought-experiment on Inverted Earth and Absent Qualia may come in for strong check. At the most, it may point towards what is known as the problem of illusion to which we now turn.

4.4. ARGUMENT FROM ILLUSION

The argument, only sense-date are directly perceived is based upon the argument from illusion. This argument is that objects appear differently to different observers, or differently to the same observer under different conditions and the way in which they appear is causally dependent upon extraneous factors such as the presence of light, the position of the observer or the state of his nervous system. The fact that appearances vary means that people sometimes do not perceive things as they really are. For example, a coin looks at the same time round to one person and, from a different angle, elliptical to another. It means that one of them presenting a deceptive appearance. Both of them understand that each of them perceives the coin as it

really is. But the coin may be neither round nor elliptical. So, at least one of them will be undergoing an illusion. Physical objects are definitely perceived, but indirectly. What is directly perceived is dependent on the state of observer's nervous system.

When one perceives a physical object, he must perceive a seeming-object. These seeming objects are sense data. Sense-date is directly perceived. The properties, which are ascribed to the surface of physical objects, are inconsistent with those that are ascribed to sense data. The surface of a physical object can exist without being perceived, but this cannot be said of a sense datum.

Some of our conscious mental states have distinctive qualitative features. For instance, when one looks at a red surface in normal lighting condition, then he/she has a visual experience of a certain distinctive kind, which differs qualitatively from the type of experience he/she has when looks at a green surface in the same lighting conditions. Some thinkers state that the visual experience of red and green surfaces involve different colour qualia.

The argument from illusion is the argument for sense data. It tries to prove whenever we perceive an external object, what we are directly aware of is some inner object, which possesses the properties, which the external object appears to possess. Argument from illusion proceeds in four stages. Firstly, it is noted in certain circumstances an object can appear other than the way it really is. A round coin appears elliptical when it is seen at an oblique angle. Secondly, in these circumstances we are aware of something that really does have the property which the object in question of something that really is elliptical. Thirdly, it is pointed out that this something cannot be identical with the object, which merely appears to have the property in question, because these things have different properties. The elliptical object of awareness cannot be the coin. Finally, even in circumstances in which an external object appears no different from the way it really is, there is still an inner object of awareness, distinct from the external object, which possess the property, in question. These supposed inner objects are commonly called as sense data.

According to Clark's Assumption of Experience-Based Control (EBC), the content of conscious visual experience are active in the

control and guidance of our fine-tuned, real-time engagements with the surrounding three-dimensional world. The assumption is as follows:[29]

Conscious visual experience presents the world to the subject in a richly textured way, a way that presents fine detail and this is virtue of this richness, especially pat for, and typically utilised in, the control and guidance of fine-tuned, real-world activity. Certain components of our conscious visual experiences may be said to be non-conceptual in the sense that they may occur in the absence of the concepts - that a theorist might typically use in attempting to describe them. Those contents may figure in the conscious perceptual experiences of beings lacking such concepts as well as in the experiences of linguistically skilled humans. The contents of our perceptual experiences may be much finer-grained than the concepts we use to describe them.

In Jose Levis Bermudez' words: "the central impetus for legitimating a notion of non-conceptual content has come from the study of perceptual experience... Theorists have been attracted to non-conceptual content by the thought that the richness and grain of

perceptual experience is not constrained by the concepts that a believer might or might not possess."[30]

Peacock develops the notion of scenario content which states that a type of representational content fixed by specifying how the physical space around the subject can be filled if the content is to be correct.[31] He is motivated by the need to accommodate; the remarkable range of detail in the perceptual content and the range of different, and philosophically interesting types of content that can be possessed by a particular experience. He tells about a connection between the non-conceptual content of perception and bodily action. "Perception supplies that non-conceptual information in a form immediately usable if the subject wants to move his body towards what he perceives.

Gareth Evans argues that the non-conceptual content of a sensation is in part a function of the organism's sensorimotor skills. A function of the way the perceptual experience could be used to guide various kinds of skilled activity. According to him: "The complete property of authority input, which codes the direction of the sound, acquires a special content for an organism by being linked with behavioural output."[32]

Grush suggests that this is not to claim that the experience must actually lead to skilled sensory motor response, nor even that the organism be currently capable of such response.[33]

Andy Clark claims that, a notion of the non-conceptual content of conscious perceptual experience is being required to play a dual role.[34] One is to reflect the nature and grain of our conscious experience. And the other is to make intimate contact with the ongoing control of motor activity. The assumption of experience-based control holds these two strands together.

Clark argues that there are tight links between memory and conscious visual awareness. And also there is a dissociation between these two and online object-engaged performance. Memory-driven responses seem to be tied to the contents of conscious visual experience. According to Millner and Goodale (1995), memory and conscious visual experience depend on a type of mechanism and coding that is different from the mechanisms and coding used to guide visuo-motor action in real time.[35] The former depend on 'ventral stream', leading from primary visual cortex to temporal areas and the latter depend on the 'dorsal stream' leading to parietal cortex.

Both ventral and dorsal visual streams can be termed as 'what' and 'how' pathways. The ventral stream specialised for object identification, categorisation, off-line reason and recall and conscious perception. The dorsal stream specialised for fluent motor interaction with the target physically present.

Another example of these dual visual systems in action is 'Tichener Circles' illusion. In this we misjudge the sizes of the central discs. Both are perceptually different but physically same.

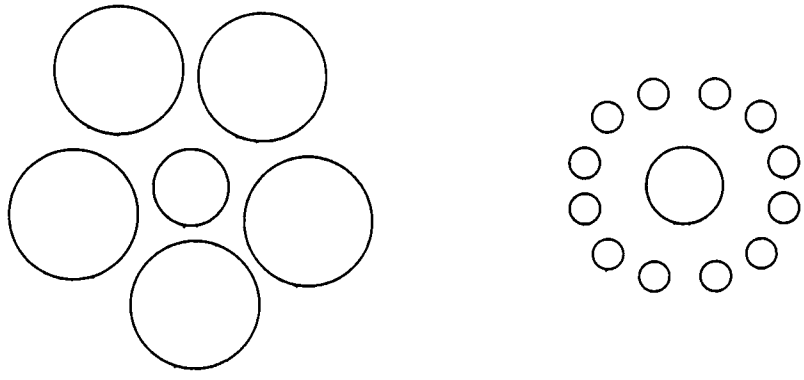

Figure 14: Tichener Circles' Illusion

In the above picture, the two central discs in the topmost drawing are equal in size, whereas in the lower drawing they are different in size. The effect of the surrounding rings of large and small circles, in each case, leads us to perceptually misrepresent the actual

size of the central discs, seeing them as different when they are the same and the same when they are different.

Another example is a modified version of the Muller-Lyer illusion presented by Smeets and Brenner.[36]

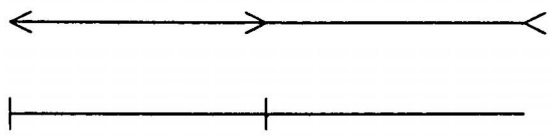

Figure 15: Muller-Lyer Illusion

In this, the vertical lines and the points of the arrows appear to be exactly aligned. The central vertical line appears to divide the horizontal line in two equal parts. Nevertheless the central arrow seems to bisect the upper horizontal line in two unequal parts.

It is an example of the inconsistent perception of physically related spatial attributes such as extent and positions. The alignment of the points of the arrows in (a) with the vertical lines in (b) is based on the perceived position of the line intersection, whereas the bisection of the horizontal lines is based on the perceived extent of the line segments. (2001)

Our conscious visual experience may comprehend multiple components. These components implicated in some specific response that may well vary with the task, the context, and the expertise of the agent.

The strongest hypotheses for dual visual systems are:

1. The possibility that conscious visual experience involves multiple, potentially inconsistent contents and

2. The idea of task-specific recruitment of resources, and hence of a task-variable relationship between the contributions of the dorsal and ventral streams.

Prinz holds that the key to connecting consciousness with action might involve memory systems rather than motor systems.[37] His idea is that conscious awareness is intimately bound up with the use of attentional systems to put sensory systems into contact with working and episodic memory. Such contact developed so as to allow stored memories of specific incidents to guide planning and action-selection. The functional role of conscious visual perception is to support reason, recall and reflection. It is only indirectly to guide actions in the here-

and-how. Such indirect modes of influence would include the selection of action types and targets.

Clark argues that the EBC should be replaced with the hypothesis of Experience-Based Selection (EBS). Thus, conscious visual experience presents the world to a subject in a form appropriate for the reason-and-memory-based selection of action. In Peacock's view the link between content and action is routed via the distinct intermediary stage of spatial reasoning. Such reasoning involves the presence of specific demonstrative beliefs and desires. Clark's EBS account also supports Peacock's account.

Martin Davies states that these types of accounts, which mediate the perception - action linkage, are less threatened by the apparent empirical dissociation between conscious visual experience and the online control of fine-grained visuomotor action.[38]

EBS account simply reject the notion of non-conceptual component in visual experience altogether. That is the deep joint in our cognitive nature is between non-conscious, action-supporting system and the conscious system that perceives, experiences, categorises and

issues verbal, propositional judgements. Conscious visual experience is intrinsically poised to figure in processes of off-line reflection, recall, and cascading abstraction. EBS tries to align conscious visual experience and conceptual reason and keep these distinct from visuomotor action. Conscious visual experience is formatted, packaged, and poised for use in conceptual thought and reason. The contents of conscious visual experience are entirely and profoundly concept-ready. EBS classifies the functional role of conscious visual experience and offers a clear account of the relation between conscious seeing and the fine detail of online, object-engaging action. It depicts conscious seeing as tightly geared to presenting the world in ways appropriate for planning, reason, and high-level action selection. It helps make sense of the apparently deep links between certain memory systems and conscious visual experience. The link between visual experience and fine-grained visuomotor action emerges as much less direct and intimate than other ways. Clark concludes that conscious visual perception is part and parcel of a cognitive system dedicated to recall, reason and imagination, and only indirectly associated with the systems controlling the detailed execution of selected action. Then,

consciousness, memory and reason emerge as a functionally unified grouping.

4.5. CONCLUSION

The question boils down to whether we can explain

- Qualia = something what goes on in the brain (not necessarily phenomenal something).
- Illusion = is that which is accountable in terms of micro events in the brain.

This does not of course invalidate illusion as it is occurs, but it only aims to unloosen the aura that surrounds the philosophers' jargon. Likewise one may hold that dreams. Flanagan teaches us that dreams are spandrels with no evolutionary significance (spandrels indicate the space between arches).[39] But dreams are neural events after all. Likewise we can take qualia to be a philosopher's jargon just like phenomenal qualia and hence they may be rejected in favour of a complete neurobiological approach. Now let us move to Indian classification to add strength to the above views.

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CHAPTER V

CLASSIFICATION OF INDIAN THEORIES OF CONSCIOUSNESS

5.1 CLASSIFICATION OF INDIAN THEORIES OF CONSCIOUSNESS: A SCHEMA

If, 'ruthlessly reductionistic' neurobiological account is *the* paradigm in *all* current science in the West, the ruthlessly ontological account is the benchmark of all Indian philosophies up to the present. One interesting way in which we can evaluate the Indian theories of consciousness is to obtain a classification of all the theories. This is just to facilitate a viewing of this classification in the light of both the official classification (Carruthers) and the counter classification (Seager) that have been examined in the previous chapters. An important difference should of course be kept in mind. That is, while the general tenor of the neurobiological investigations suggests that any reference to ontology is to be done away with (return to

positivist!), Indian classification is ontological up to its neck. Thus if the basic norms of classification in the West are physicalism, materialism, phenomenalism, naturalism, eliminativism, etc., which subserve the Indian classification has only two, that too, they are metaphysically opposed to each other, without subserving any reductionism or the other. Realism holds that consciousness states are real states while idealism holds that consciousness states are *inter alia* mental states. The expression *inter alia* is coarse-grained, but *cit* is not since within *all* other mental states, it is distinguished. That *cit* is to be differentiated from other mental states is substained by the famous *neti neti* ('not this, not this') argument. To what extent such rationale that is drawn above will advance certain points of query looks enigmatic at present.

As we have seen, while the Western classification of theories of consciousness lead to two opposing taxonomies, the Indian theories of consciousness broadly lead to two opposing taxonomies of realism and idealism. Many Indian philosophers uphold an idealistic theory without demur, the roots of which go to Advaitic theory of Consciousness, and still back to Upanishads. The celebrated 'dream-argument' is schematised as below:[1]

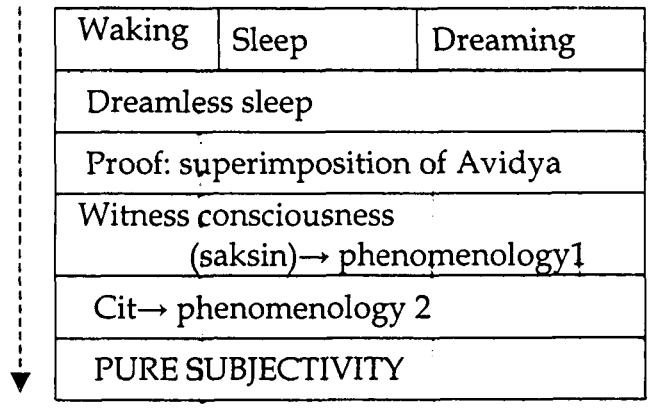


Figure 16: Dream Argument

There are at least two crucial stages by which Indian approaches to phenomenology can be legitimated.

Stage 1: Witness consciousness provides a basic infrastructure for phenomenology,[2]

Stage 2: Cit Consciousness provides a counterfoil to it by developing a complete phenomenology.[3]

The interface between phenomenology and Indian philosophical tradition provides a rallying point for much of the theory of *Cit* consciousness. Mohanty, who has explored this for the last many decades of research, fine lines his phenomenology account of consciousness, first by taking the cue from Heidegger (Da-sein) and Husserl ("Consciousness and Existence") and second by encouraging a

systematising a tradition with inputs from a dynamic theory and almost come the possibility of rejecting 'pure contentless consciousness in his latest contribution. Bina Gupta on the other hand, prefers to treat Mohanty's theory as an offshoot of Advaitic theory along the lines of Aurobindo and K.C.Bhattacarya and offers to complete a defence of idealistic theory by subjecting the above to certain emendations from her point of view.

For this purpose, she finds it convenient to develop a new classification of the Indian theories of consciousness into idealistic and realistic types. Almost the entire group of Indian theories can now be classified according to this dichotomy. Basically the conflict between atman view of consciousness (Vedantic) and the denial of this in the anatman view of conciousness (Buddhism) is the impetus for all the major theories of consciousness in the Indian tradition. Thus one can counter pose realism against Idealism

Recently Kapstein does exactly this after mentioning the four of the theories as proudly a search for the soul as the background of well-reasoning argument for the discovery of self or consciousness.[4] They are:

1. Samkhya, which conceived self as an immaterial spiritual substance (Purusa) standing in absolute opposition to the dynamic realm of nature, the latter thought of as the transformation of a single prime matter (Prakrti).

2. Mimamsa whose main focus was the elaboration of a Meta theory of the Vedic cult, in which the self's role as agent was of special importance.

3. Vaisesika, which sought to establish a fundamental categorical scheme (padarthas) through which to analyse reality in all its aspects.

4. Nyaya whose focus was the study of Pramanasastras, including both the means of knowledge and the means by which it is transmitted to others through reasoned argument.

The above classification between atman and anatman thus settles into Buddhism with its alliance to Nyaya and Vaisesika Schools, whose respective logical-epistemological and ontological concerns were in most respects complementary to the Vedic, vedantic running up to Samkara's Advaita. Bina Gupta evolves a more interesting

classification counter posing idealism to realism.[5] In the end we will have to decide whether we accept the realist or the idealist. If neither wins, then so much is worse for the tradition.

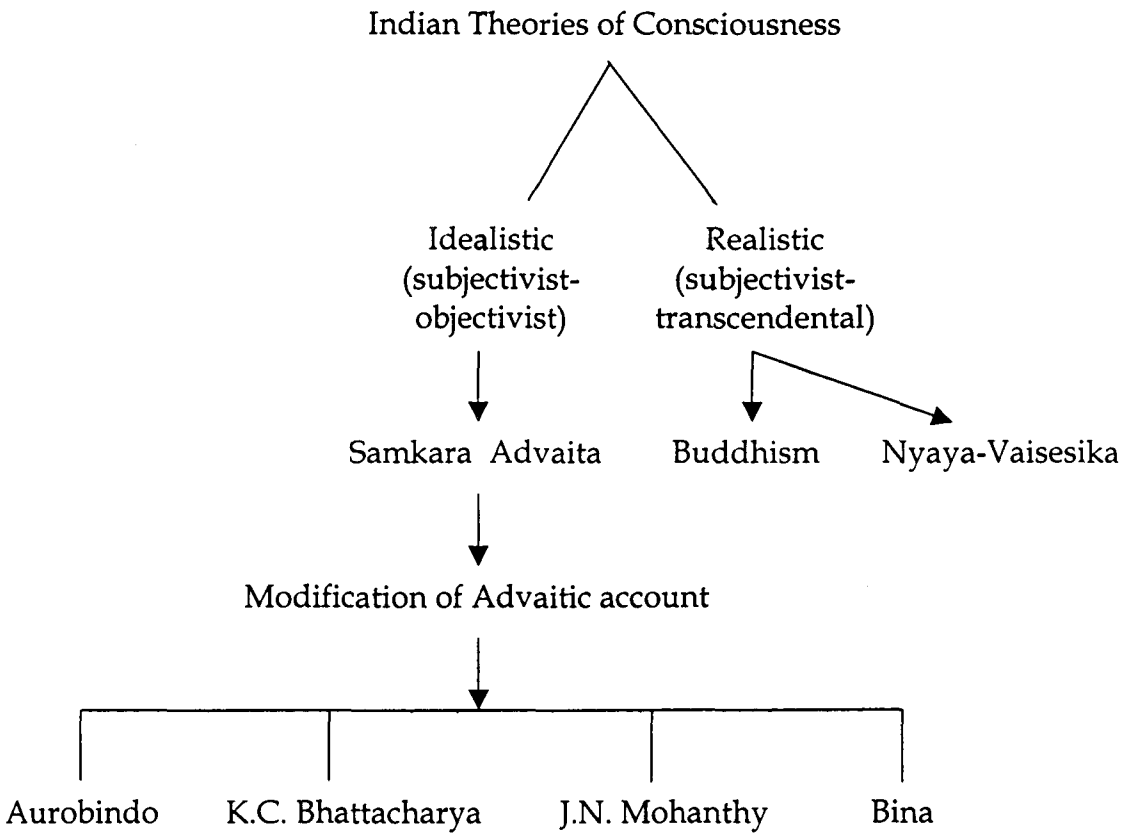


Figure 17: Classification of Indian Theories of Consciousness

The subjectivist-objectivist and subjectivist-transcendental account, requires further distinction between empirical (embodied) and transcendental (disembodied), and subjectivist (self-manifesting (svayamprakasa)) and objectivist (metaphysical as well as

epistemological along with transcendental (condition) and transcendent (all possible limits). The Carvaka, Nyaya-vaisesika and Mimamsa hold the objectivist view. Advaita Vedanta and Samkhya-yoga is subjectivist transcendental; and Yogacara Buddhism is partly objectivist and partly subjectivist.

5.2 REALIST THEORIES

Among the various Indian theories of conciousness, the Nyaya-Vaisesika theory is considered as subjectivist-objectivist theory. This theory considers consciousness as an object as any other objects. It has its own casual condition, its own coming in to being and it is manifested by another conciousness. As a special kind of object, consciousness is definable by its intentionality that is, its intrinsic reference to an object. There is no more awareness, no objectless conciousness, and no conciousness that does not belong to someone, or does not inhere in someone. The main features of the Nyaya theory of conciousness are:

1. Conciousness is a quality (property) of the self.

2. Conciousness alone has the irreducible quality of being of an object. It is intentional. In this way, it is different from other qualities like certain and pain.
3. It arises when certain appropriate conditions are present.
4. It is not eternal- it is produced and destroyed.
5. It is formless, that is, nirakara.
6. It is paraprakasa, not svayamprakasa. It is manifested by another consciousness it is not self-manifesting.

1, 2 and 3 can be brought under recent development in science. 6 stand for the objectivist clause.

For Nyaya, Atman is identified as self. The self is too subtle and cannot be perceived by any of the senses. The six qualities of the self are pleasure, pain, desire, hatred, effort and conciousness. They only belong to the self. Nyaya-Vaisesikas consider conciousness as a *guna* or *quality*. For then conciousness is one of the twenty-four *gunas* of the self. It is subtle and if belongs to a non-material substance including conciousness, six qualities one apprehended by the inner sense. The issue self as substance or as property, is not clearly resolved here.

From ontological point of view, it could be either a *guna* or karma. It cannot be a substance. It has no spatial movement. It can only be a quality. Nyayaikas argue that a quality does not have an independent existence. It must inhere and belong to same substance. They hold that it cannot be a quality of body or sense organs. It is a quality of self. It cannot be a property of sense. It cannot be a property of mind also. Our thoughts, ideas and feelings change continuously like the changes that can be seen is one's body. So consciousness cannot be a quality of the mind. We can conclude that since conciousness does not belong to the body, senses or to the mind, it must belong to the self. An obvious distinction is drawn between mind and self here.

Nyayikas argue that conciousness is an attribute of the self, which exists independently.[6] The self is eternal and it cannot be produced or destroyed. Though it is a quality of the self, it is not an essential quality of the self. The self may exist without conciousness when the appropriate causal conditions are present. That is when the self comes and the senses with external object.

For Nyaya-Vaisesika, there is nothing within consciousness, which appears in conciousness. Everything that appears in

conciousness is really outside of it. Conciousness is totally exhausted by its reference to its object by its intentionality. Conciousness is neither a substance nor an action. It is a quality, but is different from other qualities like pleasure and pain. Conciousness is always cognitive. But other qualities are themselves cognitive. They are affective. They are intentional like conciousness. Their intentionality desires from that conciousness which presents the objects.

The Naiyayaika account of consciousness is very different from the Advaita concept.[7] The Advaita account argues that when a subject apprehends an object, the object undoubtedly is revealed. It is accompanied by the apprehension. In their view, conciousness is revealed or manifested objects. It is apprehended by the witness-conciousness. The witness-conciousness cannot be an object of knowledge. It is the very condition of the possibility of knowing anything. For them, the self cannot become both the subject and object self is not the conciousness of anything; the real self is pure conciousness. Nyayaikas argue that since the witness conciousness is not accessible through any of the recognized means of knowledge, it cannot be known by any of the pramanas. Therefore the self-luminous

witness conciousness or cognitive state only shows. It is object, but not itself. Cognition is known by a subsequently cognition, which objectifies the primary cognition.

Nyayaikas deny self-luminosity of consciousness and importance to the intrinsic intentionality. For them, atman and consciousness are not related. They claim that consciousness in of an object. They do not postulate it as an act that performs the function of changing into objects. According to Nyaya relation, consciousness is neither inferred from the cognition nor is recognized by itself, but it is cognised by another cognition, Two main features of Nyaya-Vaisesika theory are:

1. They argue that consciousness is a quality of the soul
2. Consciousness has no forms of its own.

In the first sense, consciousness needs a mediation of the body. It is the property of the soul, but not an essential property. Consciousness arises in the soul when the soul in conjunction with some appropriate object or other, and the mind or the inner sense is in conjunction with the sense organ. Bina Gupta argues that Nyaya theory of consciousness

is not entirely objectivist.[8] The pure soul remains transcendent and when it will liberate from the body it will not be the seat of consciousness. Consciousness depends on the body and its relation to the soul. But the soul is far from being an empirical object.

The objectivist account of consciousness depends on the claim that consciousness itself is known in the same way as any other object is known. Schematically this theory represented as:[9]

1. If C is a state of consciousness having for its object O_1, C_1, by its definition can manifest other than itself.
2. Therefore C_1, cannot make itself manifest.
3. If it could manifest what is not its object it could manifest anything whatsoever, in which care, the awareness of a pitcher could also be the awareness of a mountain.
4. Therefore it is most reasonable to insist that C_1 can only manifest O_1, and not itself.
5. C arises at the instant t_1, at t_2 it exists; at t_3 it perishes.
6. C_1 can exercise its function of manifesting O_1 only when it is i.e., at t_2.
7. At t_3, C_1 ceases to be; but only at t_3, can t_2 then arise.

8. But this means that C_2 arising at t_3, exists at t_4.

9. C_2 can, therefore, exercise its function of manifesting C_1 at t_4.

10. But at t_4, C_1 does not exist.

11. So C_2 cannot be a perceptual knowledge of C_1 it can only be a memory of it.

There are two objections against Nyaya-Vaisesika account of objectivist theories. One of them holds that this account leads to a regresuum and infinitum. C_2 is required if C_1 is to be known. But C_2 itself need not be known. Therefore there is no regress. On the contrary, the conditions of outer perception are stronger than the condition of inner perception.

The second objection is stronger than the first. If C_2 is an inner perception of C_1 and if it does not arise automatically but requires the desire to know C it is inexplicable how there could be a desire to know C_1 when C_1 on the theory is utterly unknown in the beginning. One could know something better than the way it was known earlier. Thus the inner perception or anuvyavasaya requires that one is already familiar with C_1.

Yogacara school of Buddhism holds that consciousness is the only reality.[10] They retain the earlier account of consciousness is the only reality. They retain the earlier account of consciousness in Buddhism and develop a sophisticated theory of consciousness.

In early Buddhism, consciousness seems as the third link in the process of dependent arising (praditya samutpada) Buddha suggests to avoid the two extremes of existence and non-existence and to follow the middle way. In his view,[11]

On ignorance depends karma,

On karma depends consciousness,

On consciousness depend name and form,

On name and form depend the six sense organs,

On the six sense organs depends contact,

On contact depends sensation,

On sensation depends desire,

On desire depends attachment,

On attachment depends existence,

On existence depends birth,

On birth depend old age and death, sorrow, lamentation, misery, grief and despair.

Thus this entire aggregation of misery arises.

Buddha presents this doctrine of dependent origination to explain the human bondage as well as liberation. Consciousness in the third link in this doctrine and it provides the link between the past and the present. According to Buddhist conception, one's consciousness is conditioned by what one experiences as well as his response to these experiences.

Buddha argues that the 'I' or human personality consists of five aggregates. They are matter, sensation, perception, mental formation, and consciousness. Consciousness is a response based on six faculties. They are eyes, ears, nose, tongue and the manas or mind. Consciousness is an awareness of the presence of an object. For Buddha, consciousness is not spirit as opposed to matter. It does not denote a soul or substantial self. Consciousness arises depending on certain conditions and ceases when the conditions cease to be. In his view, consciousness depends on four skandhas, namely, matter,

sensation, perception and mental formation. It cannot exist independently of them.

Vasubandhu in his *Abhidharmakosa* holds that consciousness alone is real and the objects perceived in the external world are non-existent.[12] He points out that there is one-to-one correspondence between images and the external objects and no experience can occur without consciousness. Consciousness is the basic presupposition of any experience. Forms of subjectivity as well as objectivity are manifestations of the same consciousness.

Dignaga, the follower of Yogacara tradition holds that both the object and consciousness are experienced simultaneously.[13] An object and its consciousness are one and the same. The external objects cannot be taken to be as the cause of consciousness. On the contrary, the external object is nothing but the consciousness itself. He holds that no object is ever experienced apart from the consciousness. The external objects are states of consciousness.

Vasubandhu holds that consciousness consists of a series of momentary events, giving rise to the awareness of various objects of

senses and the mind.[14] All constituent elements and the entity called self are transformation of consciousness. Consciousness transformation is threefold, that is, fruition, thinking and representation of objects. The first, which is known as the warehouse consciousness, is the fruition of all seeds. The second, manonamavijnana's essential nature is thinking and the third transformation represents the six sense-based consciousness. The first the warehouse (Alaya-vijnana) is the repository of all seeds. The alaya-vijnana is a sort of warehouse for traces of past experiences and determining the cause and nature of one's experience. The second one is mano-vijnana, the consciousness called mind. This evolves when it takes the store consciousness as an object and support. The essential nature of the mano-vijnana is to think. It depends on alaya-vijnana for its origin and operation. It creates the false notion of an ego. It is the I-consciousness and associated with four types of defilements, perception of self, confusion about the self, self-pride and self-love. The third transformation is called pravrtti-vijnana or active consciousness. It consists of six sense-based consciousness. They are produced through visual, auditory, olfactory, gustatory, tactile and the mind senses.

Vijnana of one moment is replaced by the Vijnana of the next moment. As a result, there is a stream of successive moments of consciousness. It causes the formation of consciousness complex. Self is nothing but a complex of this stream of consciousness and the objects in the external world are simply the images that appear in the stream of consciousness. Of the eight kinds of consciousness, the last seven are oriented towards the objection. They create the false belief that there are objects like trees, tables etc. These objects exist independently of consciousness. These seven kinds are intentional. The alaya-vijnana is non-intentional. The seven intentional cognitions are founded up on a non-intentional flux of consciousness. The non-intentional alaya is the foundation of intentional consciousness.

The Yogacara theory has the naturalistic, intentionalistic, and spiritualistic nature. This theory cannot be considered as an entirely subjective theory. It is subjectivist-objectivist theory. According to Yogacara conception, consciousness is not an eternal principle. It is a series of instantaneous events brought about by causal conditions, which are material. They take consciousness as self-manifesting and in that sense it is subjective. They also regard consciousness as caused by

objective conditions and it is objective also. So the Yogacara account o consciousness is partly objective and partly subjective. Thus there is reason to think that the stream-of-consciousness that is linked with bodily suffering and its escape from this is more aligned to Western theories. This lends credence to realistic theory of consciousness.

5.3. IDEALIST THEORY: A FRAGMENT OF SAKSIN PHENOMENOLOGY

The classical Indian theories of consciousness generally involved within a stereological context in which the ultimate goal was same transcendental spiritual state. The goal is liberation for the self from the flawed condition of material world. Indian philosophy is the magnificent effort to probe the inmost being of man and nature. Much of the Indian philosophy is cognitive in the sense that it is a direct inquiry into the elevation of phenomenal consciousness (cit) to higher and higher levels of cognitive activity. In Vedantic view, there are four states of consciousness.[15] They are *waking, dreaming, deep sleep and turiya.* In the fourth stage, one realises that the whole world of objects in real, it is not ultimate reality. The ultimate reality, Brahman is both immanent and transcendent and the cause of all phenomena.

Conscious mind is an epiphenomenon, because the individual self who is pure consciousness is not conscious. The initial difficulty about this is the way the different stages of the dream argument get empirical support.

Various Advaita commentaries give various descriptions of the notion of Saksin, which seems in principle, correspond to a higher order theory of consciousness, which posits transitive consciousness. Advaitins hold that

1. The Saksin is indubitable, unerring, and eternal. It is always directly manifested and its manifestations are not due to any extrinsic reason.
2. The Saksin is the natural (pure) consciousness as qualified by a modification of the inner sense.
3. The Saksin is that which is never concealed.
4. The Saksin manifests ignorance.
5. That which directly manifests the Saksin.
6. The Saksin is that which illuminates everything.[16]

In Advaita, the concept of Saksin is the single most important postulate of the principle of revelation operative in experience-

cognitive and non-cognitive alike. This principle is a necessary ingredient in any epistemological process. In Advaita, we can find a phenomenology of levels of consciousness. Consciousness is simply a witness to its own operation and divergent modes. It is eternal, non-dual and remains unchanged.

It is wrong to speak of Saksin as knowable, for it is the element of awareness in all knowing, and to assume that it is knowable would be to imply another knowing element - a process that leads to the fallacy of infinite regress. But the Saksin does not therefore remain unrealised, for being self-luminous, by its very nature; it does not require to be made known at all. Its presence is necessarily equivalent to its revelation and it is therefore never missed the pure element of awareness in all knowing.

According to Samkara, the Atman or self is one, pure, self-luminous, self-established, undifferentiated, non-intentional, eternal and timeless consciousness. In his view, one is aware of atman within oneself.[24] It is real present in human experience. It is known directly and immediately. It manifests in every human being as self-awareness or self-consciousness. It is the witness consciousness of all events,

physical as well as psychical. Atman is pure consciousness and it persists in empirical experience and is known as the agent and the enjoyer of activities.

Bina Gupta provides the translation of some parts of Samkara's writings which are given below:[17]

1. By superimposing what is known by the 'I' upon the inner self, which is the witness-consciousness of all its endless modification, it superimposes the inner self, the witness-consciousness of everything, upon the inner organ, etc. which are mistaken for it.

2. It may be objected that since the 'I' designate the atma, it cannot be said that it is known from the Upanishads. The reply is 'no', it is said to be the witness-consciousness of that self. That is the witness, who is not the object of the sense of 'I'; the witness-consciousness is different from the agent.

3. Just as a person who is dreaming is not touched by the illusion of the dream experience, because waking and satisfaction do not invariably go together, so the witness-consciousness of the three

states, which is one and non-deviating, is not affected by any of these deviating states.

4. By the mere apprehension of cognition, there does not arise a desire to apprehend the witness-consciousness of the cognition; therefore the apprehension of an infinite regress is not justified. Of the two, the witness-consciousness and the cognition, being by nature different, the relation of the cogniser and cognised is possible. Because the witness-consciousness, which is self-established, cannot be denied.

5. The self does not have changefulness, impurity and materiality. Being the witness of all intellects, it is not of limited knowledge like the intellect.

6. The object is different from the perceiver; because it is perceived, like a jar; the seer and the seen do not belong to the same class, otherwise being the witness-consciousness would be like the intellect.

7. Being the witness of all cognition, it is changeless and all pervading. If it were to change, it would have become of limited knowledge like the intellect.

8. A thing is the witness of another thing when the former experiences the latter. For an object, which is not experienced by any one, there is no need for positing witnesshood.

9. Control the speech in the mind, the mind in the intellect, the intellect in the witness-consciousness, and the witness-consciousness is the indeterminate full self-after, which you will reach the highest peace.

10. Always know yourself to be existence-consciousness-bliss, the witness-consciousness of the intellect, and give up the misconception of the identity of the self and the body, etc.

11. That the self is different from and is the witness of the body, its proportion, its action, and its states, is self-established.

12. One who, again, pervades over, regulates both knowledge and ignorance, is different from these two, because of being the witness.

13. He is the witness-consciousness of all beings, seer of all-owing to the definition "one who directly sees".

14. Just as the reflection of the sun falls on the water, so does the highest self as reflected in the intellect, and as witness-consciousness of all modifications, is here called "atman".

15. That is the highest light, no manifested by an other, self-shining, those wise men who know the self, the witness-consciousness of all awareness by the intellect of all objects such as sound, they, the knower of the self, follow the knowledge of the self.

From these we can draw five different characterisations of Saksin provided by Samkara.[18]

1. Saksin as the witness of intellect.
2. Saksin as the non-dual, propertyless Brahman.
3. Saksin as identical to atman.
4. Saksin as the witness of all three states, and
5. Saksin as the same as Isvara.

For Samkara, Saksin is a passive observer as opposed to the doer. It is both the basis of and different from the inner sense.[19] It is self-

luminous like the self. It is the eternal, unchanging self that fulfils a specific role, as though the self were wearing a different hat. It is an observer and revealer of mental cognition as well as the physical objects. According to Samkara's conception, Saksin has two basic usages, one is that Saksin as simply atman and the other is that Saksin as atman limited by the inner sense. Samkara makes a distinction between two kinds of knowledge in his commentary on Kena Upanishad. They are knowledge of Brahman and knowledge gained through the mind and senses. The former is the highest knowledge, knowledge of reality or pure consciousness. It is beyond the subject-object dichotomy and is self-luminous and non-relational. The latter is modified consciousness. It is a reflection of pure consciousness through a mode of the inner sense. Thus, it is relational knowledge. In his view, each and every empirical cognition is the modification of pure consciousness.[20]

The Upanisadic tradition holds that conscious is one, homogeneous, and undifferentiated. Consciousness, which is pervasive through over experience, may be equated with experience. In the Upanisadic view, consciousness and experience, *cit* and anubhava, are

one and the same. Even though it is one, it becomes multiple, conditioned by the objects. In our day-to-day life, we use consciousness and experience differently, but they refer to one and the same entity. The three states of experience, waking, sleep and dream follow a pattern. According to Mandukya Upanisad, consciousness or experience is one, continuous and permanent. It seems to be fragmented and discontinuous due to the manifold modifications of the mind which is the internal organ (antah-karana) mediating between consciousness and the objects.[21] To bring out the nature of consciousness, Gaudapada and Samkara use the phenomenological method.[22] They explain four states of experience. First three are *waking, dream and sleep* states and the fourth one is *Turiya.* This fourth state only refers to the real nature of the Self or consciousness. Turiya transcends the duality of being and beings of ontology. It is beyond onto-theological positions. It can be explained negatively.

The Advaita theory of consciousness is not restricted to the analysis of epistemological crises, it also analyses metaphysical issues.[23] Consciousness is one and homogeneous, indivisible and eternal. It is also referred to as self or atman. In every human being,

there is the self or consciousness in addition to the mind, senses and the body. Everything other than consciousness is an object. Advaita begins its epistemology and metaphysics on the basis of the dichotomy between consciousness and what-is-other-than-consciousness, between self and non-self. The five external senses can function only when they get support from the mind and the mind can do its function only when it is supported by consciousness. Samkara says: Seeing is of two kinds, ordinary and real. Ordinary seeing is the function of the mind as connected with the visual sense: it is an act, and as such it has a beginning and end. But the seeing that belongs to the self is like the heat and light of fire: being the very essence of the witness (self), it has neither beginning nor end. The ordinary seeing however is related to the objects seen through the eye, and of course has a beginning. The eternal seeing of the self is metaphorically spoken of as the witness and although eternally seeing, is spoken of as sometimes seeing and sometimes not seeing. What is true of visual sense is equally true of the other senses. The self or consciousness is behind the functioning of all senses through the internal organ. It remains the same being untouched and unaffected by the activities of the mind and the senses.

It is said to be the witnesses (Saksin) of all the activities of the cognitive instruments. The objects of the external world and the operations of the mind are transcendent to consciousness. They are not in consciousness, but outside it. Consciousness is not merely object-less, but also mind-less.

Advaita uses consciousness and the ego by two different terms and there is no mixing up of these two terms. The term used for consciousness is cit or caitanya. Self, Atman or cit signifies one and the same entity. The other, ego referred as internal organ (antah-karana). The internal organ is designated in four different ways as mind, intellect, ego and memory stuff depending upon the function it does. Internal organ, different from consciousness, is material. Consciousness becomes intentional only because of its presence and functioning. When it functions giving rise to doubtful cognition of an object, then it is called mind. If it produces definite knowledge of an object, then it is called intellect. When there arises the sense of 'I', it is called ego.

Different from Western phenomenological investigations, phenomenological inquiry of Mandukya Upanisad is not restricted to

waking state only. There are also dream and sleep experiences. According to this, self or consciousness is pervasive in all three states of experience.[24] One can speak of one's experience only if one is conscious of it, there has to be consciousness. Though consciousness is one and the same in all three states of experience, for the purpose of analysis designates it as Visva in the waking state, as Taijasa in the dream state, and as Prajna in the sleep state.

Consciousness in waking experience (Visva) is always consciousness of something. It is intentional. The intended object in this state may be physical or it may be one's own subjective state like pleasure or pain. In dream state, that is the Taijasa experiences are internal objects. In dream the impressions of the experience of the objects of the waking state come out of it as real objects even though they are the states of mind. In deep sleep, a person does not experience any object, external or internal. Consciousness reveals objects if they are present; and when objects are not present, it reveals their absence. Since consciousness is present as a witness to the absence of objects in sleep, it is not intentional in the other two states revealing the objects, which it is conscious. "That state deep sleep where the sleeper does not

desire any enjoyable thing, and does not see any dream. The third quarter is Prajna where sphere is deep sleep, who remains one and undifferentiated, who is a mass of mere consciousness, who is full of bliss, and who is the doorway to the experience (of the dream and waking states),[25] Mandukya says. The text emphasizes four points. It differentiates sleep from the other two states. Secondly, in this state consciousness is one, unified and undifferentiated. It is non-relational, non-intentional. Thirdly, consciousness is of the nature of bliss. Finally, the state of sleep is not permanent.

In Samkara's words:[26]

"That the self (i.e. the witness consciousness) is distinct from the three states (witnessed by it) and that it is one, pure, and unrelated, are proved by the fact of its existence in the three states in successions. Further, the evidence of memory in the form, 'I am that', shows its oneness (in all the three states). Sruti[27] also confirms this by the example of the great fish, etc."

Advaita holds that self and consciousness refer to one and the same entity. In Advaita view, all the pramanas such as perception is

able to functions as sources of knowledge by the support of consciousness. Samkara holds that the self is the light inside the body, which is different from the lights like sun and other luminaries. During dreams the mind projects some of the impression stored in it. When the self illuminates them, they are perceived as objects. The dream objects are modifications of the mind. As in the waking state, in dream also the self or consciousness is not the agent of any action. The objects, which appear during waking-consciousness, disappear in dream consciousness. The objects, which appear in dream-consciousness, disappear in waking consciousness. The self is really non-relational. Its intentionality is not necessary, but it is only contingent.

The central doctrine of Advaita is that Brahman-Atman is the sole reality, and the entire manifest world has only empirical reality, has originated from and finally absorbed in Brahman-Atman. So Brahman-Atman and the world are related as cause and effect. Advaita recognises three kinds of Vrttis-Mayavrtti, Antahkaranavrtti and Avidyavrtti. It holds that any kind of experience in the form of knowing or feeling requires some kind of Vrttis. The first kind of Vrtti functions is the case of Isvara and the remaining two are required for

the explanations of Jiva. Isvara is a complete entity consisting of consciousness and Maya. The jiva is a complex entity consisting of consciousness and avidya. In both cases the element of consciousness is the same, eternal and self-luminous. When these Vrttis are illuminated by consciousness, we have experience of various kinds-cognitive, affective and conative. According to Advaita, the immediate knowledge of Brahman-Atman generated by Sruti text through the medium of a special kind of the Vrttis called akhandakara Vrtti. Even memory and recognition are due to the Vrtti of the internal organ, which is inspired by consciousness. The three factors- the knower, the known, and the knowledge, which are involved in mental operation, are revealed by the witness-consciousness (saksin) during self-reflection. "If the saksin were not known, then the knowledge of the triple factors cannot arise from the saksin. So, it has to be accepted that, wherever there is knowledge of the triple factor, there is knowledge of the saksin, because the saksin is self-luminous".[28]

"In the Vedanta texts, the world 'abhasa' everywhere means the Semblance of consciousness in the internal organ. This Semblance of consciousness in the internal organ is the object of the saksin. But the

saksin, being self-luminous, reveals itself; it is never an object comprehended by the antah-karana-Vrtti carrying the semblance of consciousness".[29]

Turiya is different from Visva, Taijasa and Prajna and it is bare consciousness. Mandukya Upanisad explains Turiya as "It is unseen, incapable of being spoken of, ungraspable, uninfereble, unthinkable, unnameable, the essence of the knowledge of the one self, that into which the world is resolved, the peaceful, and the non-dual-that is the Fourth, the self, which is to be known."[30] On the Advaita view, when the individual person is on to the state of dreamless sleep, the entire cognitive apparatus of the self, including the mind and the sense organs get dissolved in avidya. Though the self is qualified by avidya during this state, that witness consciousness has the ability to reveal its own intrinsic nature and anything super-imposed on it by the relation of identity. Witness-consciousness is the pure consciousness, which is present in the creator and the created selves. It reveals only itself, its own blissful nature and avidya. It never depends on a transformation of the mind in order to reveal an object that is super imposed upon it. It can reveal an internal state without depending upon a transformation

of the mind. Vedantins hold that an individual cannot experience any pleasure or pain during the dreamless sleep state, because experience of pleasure and pain always go hand in hand with objective awareness. Consciousness, which transcends the subject-object duality is beyond the object-oriented phenomenology. It is not an object of knowledge. Every object is known through a pramana that is perception or inference, or something else. The functioning of Pramana presupposes consciousness. Advaita views that any kind of experience requires some kind of Vrtti. That is our knowing; Vrtti Jnana comprehends feeling and willing. There are two special features in the phenomenological inquiry into consciousness. Firstly, it is an inward inquiry towards a transcendent object. Secondly it is negative, it pursues the path of denial. The three states of experience give us the picture of consciousness as conditioned by Upadhi. Turiya as bare consciousness is different from Visva, Taijasa and Prajna. Taijasa and Visva are bound by both cause and effect. But Turiya transcends the three states and free from both cause and effect.

Mandukya Upanisad's view *aum* is what was, what is and what will be. It signifies a correlation between microcosm and the

macrocosm. Aum stands for Brahman. The three letters in the word *'aum'* corresponds to the three states of waking, dreaming and dreamless deep sleep. And the fourth state Turiya is the undifferentiated state of pure consciousness beyond the changing and conditional phenomenal modes of existence. These three states are known as Visva, Taijasa and Prajna. The universal self with the waking state as its manifestation, with consciousness directed outward, of seven links and nineteen mouths, is the enjoyer of gross things, is the *first* quarter.

The second quarter is the Taijasa or the luminous, with the dream state as its manifestation, with consciousness directed inward, with seven links and nineteen mouths, it is the enjoyed of consciousness not related to objects.

Where the sleeper desires no desires, sees no dream that is deep sleep. The third quarter has deep sleep for its manifestation; it has become one, is of the nature if enlightenment, full of blinks, an enjoyer of bliss, with consciousness as its face.

Visva is the watching self and in this state, the self-cognizer of external objects. Only in this state, the self is consciousness of external objects. It is the first state of Brahman. *Taijasa,* the dreaming self is the second state. In this state the mind enjoys impressions, imprinted upon the mind during the waking experience. In this state, the self is internally conscious. The *third* state is Prajna is dreamless sleep state. In this state, there is a cessation of consciousness. In this state, the subject-object distinction does not exist. There is a sense of bliss because there is a temporary union between the absolute and the embodied self. In deep sleep, all mental activities are ceased and the consciousness of individuality is absent. This state is different from Turiya, the state if release. This is the underlying substitution of the three states of waking, dreaming, and dreamless sleep.

All the three states, Visva, Taijasa and Prajna are the embodied self. In the words of Gaudapada Visva and Taijasa are taken to be bound to cause and effect. But Prajna is bound to cause alone. In Turiya, there is neither cause nor effect. The view of various Upanisad is that consciousness is a necessary condition for the assertion that there are things. They hold that self is different from mind or the

intellect. It is also different from the perceiver, the act of perceiving and the perceived object. It is pure consciousness and self - luminous.

5.4. THE COMPLETION OF PHENOMENOLOGY

In her earlier book, 'The Disinterested Witness: A Fragment of Advaita Vedanta', Bina explained the Advaita Vedanta.[31] She focused her attention as the Vivarana school of Advaita Vedanta. She had made an attempt to unfold the Advaita Vedanta phenomenology of levels of consciousness. The main idea of phenomenology of consciousness is that consciousness is simply a witness to its own operation and divergent modes. She only explained a part of Advaita phenomenology and so called it as a fragment. But in her later work, she was further investigated of the general conception of consciousness.[32] She has inspired by the contemporary western philosophical inquiries and debates on the philosophical problems of consciousness. She also got the inspiration from the new consciousness research by the brain scientists and analytic thinkers. A significant feature of Advaita phenomenology of consciousness is that consciousness at a certain level, simply a witness to its own operation and divergent modes. This idea or level of consciousness is witness consciousness. In the absence of such a consciousness, experience or

knowledge would not be possible. There is always a level of consciousness within each one of us where we stand apart at a certain distance and simply observe our experience without getting involved in these experiences. In the absence of this observation there could be no cognition. Phenomenological analysis used to uncover reality or pure consciousness.

The Vedantic method is phenomenological because its focus is as experience instead of objects. Consciousness is the light that illumines the objects. In Advaita, the transcendental, pure consciousness is a necessary condition of all phenomena. Saksin is the witness to the object. They also make use of the idea of ignorance. There is a consciousness that witnesses this ignorance. When ignorance is removed, the consciousness and the object became non-different. The saksin is the presupposition of all knowing; it illuminates all that is known and making knowledge possible. Bina Gupta's claim is to convey the relation between disinterested witness phenomenology and cit phenomenology. Distinct from her earlier work, in her later work, she has given a complementary picture of consciousness. She was inspired by two factors. One is the contemporary western

philosophical debate as various problems and the second one is that the consciousness research by brain scientists and analytic thinkers.

Bina claims that Advaita is such is such a system of philosophy which has thought so deeply on the nature of consciousness In her view, from an idealistic angle, Advaita Vedanta is a case of a sublime metaphysical system, subtle logical discursivity, and detailed phenomenological description. She defends a view that is modified from other reconstructions of Advaitic approach, such as Aurobindo, K.C.Battacharya and J.N.Mohanty.

5.5. MODIFICATIONS OF ADVAITIC ACCOUNT

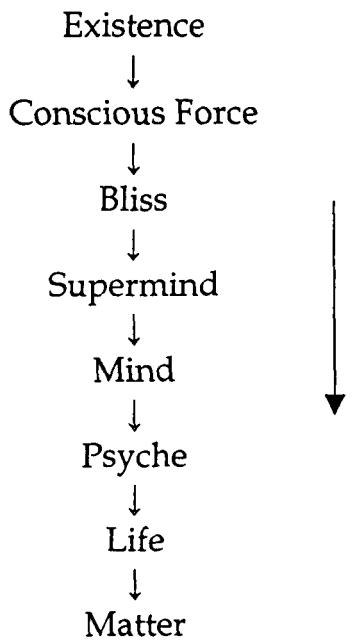
Sri Aurobindo rejects Samkara's version of Advaita and develops a metaphysical position known as Integral Advaita.[33] He rejects Samkara's position because of his emphasis on the falsity of the world. According to Aurobindo, the Brahman is both transcended and immanent in the world, and the finite individuals are self - manifestation of the Brahman by its own infinite creative energy. He presents a theory of emergent evolution and argues that the idea of evolution presupposes a prior innovation. Matter develops through the steps of life, mind, and many other levels of consciousness. In

Aurobindo's words: "If there is an evolution in material Nature and if it is an evolution of being with consciousness and life as its two key terms and powers, this fullness of being, fullness of consciousness, fullness of life must be the goal of development towards which we are tending and which will manifest at an early or later stage of our destiny. The self, the spirit, the reality that is disclosing itself out of the first in conscience of life and matter, would evolve to complete truth of being and consciousness in that life and matter. It would return to itself-or if its end as an individual is to return into its Absolute, it could make that return also-not through a frustrations of life but through a spiritual completeness of itself in life. Our evolution in the ignorance with its chequered joy and pain of self-discovery and world-discovery, its half fulfilments, its constant finding and missing, is only our first state. It must lead inevitably towards an evolution in the knowledge, a self-finding and self-unfolding of the spirit, a self-revolution of the dignity in things in that true power of itself in Nature which is to us still a super nature."[34]

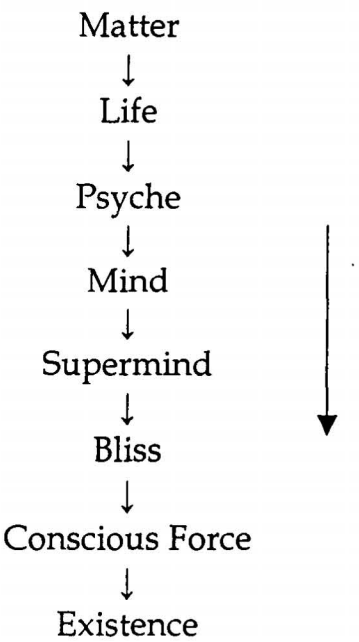
Aurobindo holds that the evolutionary structure of the word process is due to consciousness-force inherent in the Brahman. This consciousness-force is the stuff of which all existence is made.

Man's consciousness can be nothing else than a form of Nature's consciousness. It is there in other involved forms below Mind, it emerges in Mind; it shall ascend into yet superior forms beyond Mind. For the Force that builds words is a conscious Force, the existence which manifests itself in them is conscious being and a perfect emergence of potentialities in form in the sole object which we can rationally conceive for into manifestation in the world of forms.

Aurobindo holds that nature evolves on several levels because the Brahman has already involved itself at each level. The order of involution is:[35]



Evolution is the reverse action of involution. Evolution is possible because involution is already happened. 'What is an ultimate and last derivation in the involution is in the evolution the last and supreme emergence. Evolutionary process is:



The first four in the order of evolution constitute the lower hemisphere and the last four the upper hemisphere. Aurobindo tries to explain how mental consciousness is to be transcended into supra - mental conscious does not directly descend into the mind. It requires a link, a kind of creative consciousness. He calls this power of divine creative consciousness, the 'Supermind'. It is a power conscious Force expressive of real being. It is the culmination of the mind. The

Supermind has an integral outlook and it achieves a unitary picture of reality. The mind cuts and breaks the unitary whole into parts. Supermind is the link that connects the higher and lower realms. It illuminates itself by its own light and expresses the real truth of being.

The ascending to the supermind can be achieved through a triple transformation, psyche and spiritual and supra-mental. Psychic change hides our soul and supplemented by spiritual change. This change gives the experience of the true nature of the self. It helps one to make conscious of the truth of supra-mental consciousness. The psyche and spiritual transformation are not sufficient for supra-mental transformation. Aurobindo distinguishes various possible movements of mind or consciousness. They are higher mind, illuminated mind, intuitive mind and over mind. The higher mind is a luminous thought-mind. It can conceive a system of ideas 'at a single view'; whereas normal human mind depends for its knowledge on sense experience, inference and other sources of knowledge.

The illumined mind possesses higher consciousness. The initiative mind is an outcome of the meeting of the subject and object consciousness. At the mental level knowledge of world is obtained by

the sense and the intellect and is the level of intuition, consciousness of the subject penetrates and comes in content with the reality that underlies the appearances. In Aurobindo's opinion, intuition has a fourfold power. A power of revelatory truth-seeking, a power of inspiration or truth-hearing, a power of truth-touch, and a power of true and automatic discrimination of the orderly and exact relation of truth to truth. The initiative mind is not the summit of Superconscient consciousness.

The overmind is in direct touch with the supermind bridges the gap between knowledge and ignorance overmental descent helps the illumined, initiative to make contact with the global consciousness. The overmind descent eliminates the egocentric attitudes and enables to attain a larger experience of the delight of existence. The supra-mental transformation signifies a transformation of ignorance into knowledge and the emergence of a Gnostic being. Aurobindo holds that for the spiritual life, one should not reject the world. As Gnostic personality realized that matter is also consciousness, he should accept the world. Thus the world is neither a fragment of one's mina nor an illusion. He considers consciousness as the basis as well as the sources of many.

Aurobindo's conception of evolution has three main features. They are widening, heightening and integration. Individual is the basic instrument of this evolution. In his words, the end of this triple process must be a radical change of the action of ignorance into a basis of completion consciousness. Aurobindo's theory of evolution is thoroughly spiritual. Spirit or consciousness is the source of creation as well as the final end of the realization. Satcitananda, the infinite being creates the universe and unfolds itself as many. Evolution is the unfolding of consciousness is matter. Spirit's involvement in matter, its manifestation in grades of consciousness is the significance of evolution. Aurobindo's account is based on a satisfactory philosophy of science, of physics, of biology and of psychology.

K.C. Bhattacharya has developed a conception of the grades of subjectivity, as grades of consciousness. He understands subjectivity as dissociated itself from objects. Through different levels of consciousness, it dissociates and the subject achieves its freedom. Three main conception of Bhattacharya are:[36]

1. A conception of the levels of consciousness;
2. Dream experience as a new dimensions of existence;

3. Distinction between conscious dream, self - conscious dream, self - conscious dream, and dreamless sleep.

Bhattacharya is credited with giving a new interpretation of the Upanisadic doctrine of the four states of consciousness, namely, waking, dreaming, dreamless sleep and the Turiya. He argues that in waking experiences, presentation and practical interests determine the contents. In dream, the contents are copies of waking percepts without any sensation and attention and consciousness of the body is at a minimal. In dream, space and time lose their reference to the body. In dream, the ideas do not consciously remember the corresponding waking percepts: they are at once percepts. Dream and waking are two independent orders. The waking experience denies the validity of dream, but dreaming consciousness does not deny the waking consciousness. In his words, in dream, the object consciousness is free from reference to the body and so purer than in waking consciousness. Bhattacharya cannot justify how dream is wider than the waking world by holding that the consciousness of body determines of the limitations of waking consciousness. Bhattacharya goes further to that if and only if we could dream self-consciously, that is, control the dream images,

take our focus away from the 'heavy-body', and centre it in a larger self, we could achieve a higher order of truth than the waking experience. He let the cat out of the bag by distinguishing three levels, conscious dreams, self-conscious dream, and dreamless sleep. It is difficult to maintain a position like this supported by empirical evidence. He says that conscious dreams are perception without sensation. Self-conscious dreams objects come and go without making any disturbances. In dreamless sleep, the self is dissociated from the body as well as from the mind (empirical cause) Bhattacharya considers self in isolation from empirical consciousness.

In his later work, he claims to develop a new kind of inquiry into the nature of consciousness, he calling it as spiritual or transcendental psychology, which lies between mystic intuition and objective metaphysical inquiry. According to Bhattacharya, for every subjective function, there is a mode of freedom from objectivity.[37]

The different states of subjectivity are, bodily subjectivity, psychic subjectivity and spiritual subjectivity. Bhattacharya considers bodily subjectivity is primary. One can locate the other perceived objects as in their space, but one could not perceived her own body in

the same way. In this sense, her body is entirely different from the objective world. It is only possible through the feeling of the body. So Bhattacharya makes a distinction between 'perceived body' and 'felt body'. Perceived body is distinct from the felt body, but felt body is not distinct from the perceived body. The felt body is the first realization of freedom from which all higher levels of freedom begin. Image is the elementary level of *next* level that is psychic subjectivity. An image can be known without spatial and temporal position. The *next* stage is spiritual subjectivity. It begun with feeling and through introspection proceeds beyond to the subject as freedom.

Bhattacharya calls the mutual relation of reflective consciousness and its content, implicational duration. The idea of the 'Absolute' is coming under the Supra reflective consciousness. In his article, 'The Concept of Philosophy', he argues that higher kind of knowledge can be reached by analysing speeches and thinking.[38] Speeches and thinking admit of grades, and thinking point to the grades of theoretic consciousness. Consciousness functions diversely as knowing, willing and feeling. In each, the relation between consciousness and content is different. In knowing, content is not constituted by consciousness. In

willing, it is constituted by consciousness. In feeling the content constitutes 'some kind of unity' with consciousness. Each has its own formulation of Absolute. Consciousness carries a felt freedom from its objects a every level until its final actualisation is the Advaitic state. Bina does not favour the interpretation given by the above approach but tries to build upon Mohanty's reading of Advaita.

Mohanty holds that reflexivity of consciousness cannot be a second-order intentionality, but a dimension of intentionality and degrees of reflexivity.[39] In his view, consciousness is self-manifesting only so far as it is intentional. While all consciousness is reflexive, this reflexivity has degrees, which vary from full clarity to almost indistinct awareness. Mohanty argues that the degree of intentionality varies with the degrees upon the presence or absence of the hyletic component in the intentional experience. The cognitive states come at the top and the unconsciousness state remains at the bottom. Volitional and affective intentionalities fall in the middle. Opposed to Western phenomenology, he reaches an anti-Kantian standpoint by holding that these are no two different levels of consciousness, the empirical and the transcendental. But all consciousness itself is transcendental.

In his own words: "I have fundamental objection to the way the distinction between the empirical and the transcendental is usually drawn, which misleadingly subjects as though the transcendental subjectivity is not the subjects experience of herself. The other member of the pair, that is, the empirical, also misleadingly subjects that one experiences only oneself as bodily and as a member of the radical and social orders. As transcendental, I am also a cognitive, affective and willing, acting speaking and moving around, not a mere thinking ego"[40]

Samkara highlighted the mutual incompatibility of reflexivity and intentionality. But Mohanty holds that we recognize that there are both the degrees of intentionality, and the degrees of reflexivity.

From what is said in the above, it is clear that the above-mentioned Indian thinkers, Aurobindo, Bhattacharya and Mohanty are trying hard to bring the insight of Indian philosophy into harmony with modern Western thinking, especially in the area of phenomenology but it hardly registers any success. In Aurobindo, we can see metaphysics of consciousness in the grand Hegelian-Advaita tradition. One being goes through levels of self-manifestation, self-

differentiation, and then recovers its unity. On the other hand, J.N.Mohanty provides a purely phenomenological description of the way in which different states of consciousness, intentionally and reflexivity is interviewed in different degrees. But it does not make metaphysically claims. And, Bhattacharya uses a descriptive phenomenology to reach Advaitic metaphysics of self.

Both of them admit the levels of consciousness and they recognise bodily consciousness. For the recognition of bodily consciousness they go against the traditional Advaitin's rejection of body as a product of ignorance. Body is no more rejected as unreal. Waking consciousness is still a lower level of consciousness to be transcended in dream, dreamless sleep, and ecstacy.

Bina Gupta suggests that we need to combine the insights gained from the tradition into a metaphysics based on our knowledge of brain and neurological sciences as well as physics of elementary particles. It is doubtful whether such integration could be achieved with all the obscurities that are present in the above account. So let me conclude that the Indian classification cannot register a higher level of success than the other two classifications.

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