



The Pattern of a Life:
On a New Concept of Mind in Twentieth Century Philosophy
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The goal of this investigation is to uncover, within the works under analysis, a concept of mind not as a thing, but a self-constituting pattern of perceptual activity. This work examines that concept in the context of several different philosophical investigations, particularly that of Patricia and Paul Churchland, and Maurice Merleau-Ponty. The goal is to blend ideas from several contemporary philosophical schools to create a non-reductive philosophy of mind that is nonetheless physicalist all the way through. It is a kind of proof by counter-example that physicalism need not be reductive.

The Churchlands create a new approach to human nature they call neurophilosophy. Their account of thinking and perception understands such activities as the continuing formation and transformation of ordered patterns of neuroelectrical activity in the brain. Yet the Churchlands' particular brand of physicalism, which they call 'eliminative materialism,' considers non-neurological ways of understanding perceiving and thinking to be mistaken – so philosophy will be replaced by neurology. My first chapter ends with a critique of the Churchlands' epistemology which points out the flaw in the eliminative understanding of knowledge.

The second chapter examines the functionalist philosophy of the recent work of Jaegwon Kim, and borrows the idea of the pattern as it occurs in an essay of David Lewis. Kim offers an approach to the nature of scientific understanding that gives relevance to the functional talk of propositional attitudes, even as we accept that a belief is itself a complex patterning and re-patterning in the extremely multi-layered neural network that is the brain. Lewis' metaphor gives one the clearest image of the particular kind of existence of the mind, when the mind is considered to be a continually re-constituting pattern of activity of a body perceiving the world and moving around in it.

The final chapter examines what I think is a very direct engagement with the concept of the individual as a pattern constituted in the activity of a body perceiving the world and moving in it. This is precisely Merleau-Ponty's concept of 'bodily life,' as he expresses it in his book, *The Phenomenology of Perception*. The analysis of this concept takes up the first half of the last chapter. Finally, I examine the work of Evan Thompson, particularly his recent *Mind in Life*, which articulates Merleau-Ponty's concept of bodily life in a physicalist context. For the purposes of this thesis, this work also provides an answer to the extreme reductive character of the Churchlands' eliminative physicalism. He asks what kind of physical body can carry out the activities constitutive of mind, perception and motion, and finds this to be any body constituted in a metabolic chemical activity. The human style of mind is a highly complex articulation of the perceptual and motive activity.

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Ø. Introduction	1
I. Neurophilosophy and the Problem of Eliminativism	7
1. What Is Neurophilosophy?	7
2. Neurophilosophy's Account of Thinking	12
3. Eliminative Philosophy as Pure Objectivity	17
II. The Concepts of Broad Physicalism	26
1. What Is Functionalism?	26
2. The Strengths and Weaknesses of Functionalism	31
3. The Pattern of Patterns	40
III. Bodily Life, A Life	46
1. The Scientific Approach to Life – Escaping Situatedness	47
2. The Individual Living in the World	50
3. Mind Embodied in Life	61
Conclusion: Mind as Activity Means Mind Is Common to All Life	70
Bibliography	74

Introduction

This thesis examines the following concept as it can be expressed in a non-reductive physicalist understanding of the universe – that an organism’s mind is constituted in that organism’s activities of perception and movement; that each organism constitutes itself in the world as an individual as it perceives and moves. This concept implies that the mind is not a thing, but a pattern of activity constituted in perceiving and moving. This pattern that is mind does not exist before the organism perceives and moves in the world, but is constituted through this activity in the world. My inquiry will take the form of a survey of several primary texts in which the concept of mind as a pattern of activity occurs both explicitly and implicitly. These texts each engage with the concept of mind as activity, and connect it with two problems in philosophy of mind – the nature of experiential qualia and reductionism. I first examine Patricia and Paul Churchland because the understanding of mind constituted as the perceptual activity of an organism is implicit in their work. In chapter two, I examine how this concept appears in functionalist writers Jaegwon Kim and David Lewis, and use this philosophy to critique certain aspects of the Churchlands’ work. In chapter three, works of Maurice Merleau-Ponty and his physicalist follower Evan Thompson are key to my examination of that activity which constitutes mind – perception and motion – enacted by a physical thing: an organism.

My investigation is also defined by an opposition to reductionism in philosophy of mind. The key premise of reductionist accounts of knowledge is that once one knows the underlying causes and conditions of a phenomenon, one knows everything worth knowing about the phenomenon in question. I am interested in a non-reductive physicalism because reductive explanations ignore that which is constituted via its causes and conditions, making causes and conditions more important than the thing itself. In the context of philosophy of mind, the reductive mode of explanation has had considerable success in building a concept of mind that is wholly neural, until it comes time for the reductive explanation of qualia. This is the stumbling

block of much recent philosophy of mind, as the qualia of experience are seemingly irreducible. David Chalmers articulated this apparent impasse in his essay "Facing Up to the Problem of Consciousness." It centres on exactly the problem of experiential qualia and states clearly his inability to come up with a solution. In this sense, he serves as a good representative of those puzzled over the qualia question in analytic philosophy of mind. "There is nothing that we know more intimately than conscious experience, but there is nothing that is harder to explain."¹ There is a point in our explanation of the life of the mind at which language breaks down, he says, and we are left with mere entreaties to the 'raw feels' of experience. What is it like to be in pain? What is it like to have the flu? What is it like to roll down the first hill of the largest roller-coaster in Disneyland? What is it like to be a human? Chalmers calls this the hard problem of consciousness, the possibility of the investigation of consciousness in general.

Many of the particular aspects of consciousness are the objects of successful scientific inquiries. The qualia of experience, says Chalmers, are irreducible insofar as they cannot be explained as something other than what he calls 'raw feels' and 'what-it-is-like'ness. As such, he regards the issue of what qualia are and how they are produced as impossible to solve. The first chapter of this thesis examines a radical yet surprisingly simple move to answer the qualia problem. This is the physicalism of the Churchlands, which they call 'neurophilosophy.' Neurophilosophy is an approach to the problems of philosophy of mind and the phenomena of mental life which sees the answers to these problems in the science of neurology. That is, the Churchlands hold that the problems of philosophy of mind will not be solved by the philosophers, but will be solved by neurological researchers, and that it is the job of the philosophical community to take the quantitative data of neurological research and render it in prose able to

¹ Chalmers, David. "Facing Up to the Problem of Consciousness." *Philosophy of Mind: A Guide and Anthology*. Pg. 617. John Heil, ed. Oxford University Press. (2004. Orig. 1994)

reach mass consumption and comprehension.² Their approach to the problem of qualia is that we find the answers of what qualia are by examining the sensorimotor system of humans and other animals, and that we will – for example – be able to answer Thomas Nagel’s famous question of what it is like to be a bat³ by analysing the chiropterian sensorimotor system. The Churchlands conduct neurological investigations into the mechanisms of consciousness and argue that the sensorimotor system itself constitutes qualia. Qualia are not things that exist over and above one’s sensorimotor system, but according to the Churchlands are themselves constituted in neuroelectrical activity. There is no need to reduce qualia to any physical correlate, they say, because qualia are themselves physical. Though one may come to understand the causes and conditions of the constitution of qualia in neuroelectrical activity, this does not exhaust one’s understanding of that which is constituted. While Chalmers would certainly have been aware of the Churchlands’ work, his essay stakes a position contra theirs, stating that qualia are irreducible. Yet he also puts himself in a position similar to the Churchlands, saying that such irreducibility means qualia are inexplicable, conflating reduction and explanation. I hold this conflation to be a mistake.

The Churchlands’ writings are almost encyclopedic in breadth of neurological answers to philosophical questions of mind, and throughout their oeuvre is a focus on perception as an *act* made possible by certain physical systems. That is, the sensorimotor apparatus of perception is constantly in motion, constantly acting, constantly perceiving. They concentrate on the physical thing that is the human neural system and the system of sensory organs that are part of the apparatus without which the human is a heap of meat, incapable of motion. It is not simply the physical presence and structure of the sensorimotor system that explains the activities to which we

²This is a position with a long history, generally referred to as ‘materialism’ in the Western philosophical tradition. My position regarding the Churchlands’ place in materialism of Western philosophy is that they are a new round in an old dispute between reductionist and non-reductionist accounts of mind, a round defined by the particular challenges of contemporary neurological science.

³Nagel, Thomas. “What Is It Like to Be a Bat?” *Philosophy of Mind: A Guide and Anthology*. Pp. 528-38. John Heil, ed. Oxford University Press. (2004. Orig. 1974)

normally refer as 'mental,' but that sensorimotor system must be continually acting and in motion for the individual organism to live and survive. The Churchlands understand the human as an apparatus which must be in constant activity. The first chapter in part introduces the Churchlands' philosophy and examines their approach to the qualia question summarized above.

Despite their concentration on understanding mental activity as the continuing function of a sensorimotor system, the Churchlands are opposed to the functionalist school of philosophy of mind. They say this is because of the functionalist persistence in using the word 'mind' at all, when they should simply refer to the functions of the physical sensorimotor apparatus. For the Churchlands, the concept of mind should be removed from philosophy, because what there actually is, is the brain and the rest of the sensorimotor system. The Churchlands call their approach to the concept of mind – the approach of calling for its removal from the list of valid philosophical concepts – eliminative materialism, and it is the most extreme form of the reductionist concept of knowledge. The explication of the Churchlands' neurophilosophy and the solutions it offers to the problem Chalmers states about the seeming ineffability of qualia will begin the first chapter. From there, we will examine the problem of eliminativism and the eliminative accusation that philosophical concepts not based in a purely objective account are obsolete and illegitimate. This latter, critical look at eliminativism will centre around how the Churchlands privilege knowledge of an objective perspective over the subjective perspective. My point in the last half of chapter one is that the objective and subjective perspectives in the context of epistemology do not constitute a choice of either the former or the latter. In that section, I will explain fully what I mean when I speak of the 'purely objective' and 'purely subjective.' By analysing the activity of perception, one can drop this epistemological hierarchy of perspective from the investigation of mind.

This thesis is non-reductive in its approach to philosophy. My goal is to deepen the understanding of the concept of mind as activity in a physicalist context by examining how that

concept is treated in several works throughout contemporary philosophy. The second chapter will look at the concept as it occurs in functionalist accounts of mind, particularly how it appears in Jaegwon Kim's philosophy of science. Of particular importance is an idea that David Lewis described, almost as a throwaway comment in an essay on reductive philosophy of mind – the concept of the mind as a pattern coalescing from an assemblage, a whole that exists differently than would an inventory of its parts. This image best defines the concept of mind as activity as I want to articulate it – a pattern of events, movements, and activities, unified by the physical unity of the body carrying out those activities.⁴ This pattern of a body's activity comes to constitute the individual itself. This thesis will focus on this single example from Lewis' wide-ranging work on mind, this image of the process of thinking and movement. Lewis described this concept of the pattern only briefly in 1994, but a highly detailed investigation of this concept was carried out in 1945 – *The Phenomenology of Perception* by Maurice Merleau-Ponty.

The third, final, chapter will examine the constitution of an individual as a pattern of activity as the concept appears in that work, in the works of philosopher Evan Thompson, and his collaboration with Francisco Varela. The reason that we examine Merleau-Ponty's analysis of the individual is that he develops the same concept in *The Phenomenology of Perception* as we had earlier interpreted from the analytic philosophers mentioned above – the individual constituted as activity. The main difference between them is that Merleau-Ponty's analysis is completely neutral on the question of substance. He instead focusses on how the individual acts in such a manner as to constitute her individuality. The activity of the individual is constrained by the surrounding events in the world in which it lives, and so impacts the constitutive activity of the individual. But this activity also transforms the world through the individual's adaptation and manipulation of it. This activity of perceptive motion creates a dynamic of mutual co-constitution of the individual and the world in which it lives. Merleau-Ponty understands the pattern of a life as not

⁴ Lewis, David. "Reduction of Mind." *Papers in Metaphysics and Epistemology*. Cambridge University Press. (1999 Orig. 1994)

only the activity of the individual, but also the interdependence of the individual and the world in a relationship of mutual co-constitutive activity. And this activity of self-constitution is not only co-constitutive of the individual person itself, but also co-constitutes the organism's surroundings.

Evan Thompson, in his 2007 book *Mind in Life*, takes Merleau-Ponty's analysis of the co-constitutive activity of an individual in the world, and describes it in a physicalist framework informed by the principles of current biological research. Thompson aims explicitly to find a principle of unification between the analytic framework that seeks compatibility with scientific research into biology and neurology, and the phenomenological and psychological analysis of the individual acting in the world. Thompson writes as if the analytic and continental traditions of thought can engage in dialogue, himself constructing such a dialogue between the two traditions. In doing so, he shapes a compelling understanding of the constitution of the mind, the individual, and the significance of the world. The concept in philosophy of mind central to our whole inquiry is that the activity of the individual in the world constitutes all those processes that we colloquially attribute to mind. The activities of perception and thought are themselves constitutive of mind, and Thompson finds these activities in all physical articulations of life. So by this point, we have come to understand that the human mind is a particularly human thing, but the activities that constitute mind itself are present in all organisms, and that mind generally is a far more varied and complex phenomenon than has often been thought in much of the history of philosophy.

I. Neurophilosophy and the Problem of Eliminativism

The first section of chapter one will sketch how the Churchlands situate their own philosophy in relation to the popular image of mind. The project of neurophilosophy is to explain the actions of mind as physical events, as states of the brain and patterns of neural activity. What in colloquial language is called a thought or a belief is the expression in that colloquial language of a complex pattern of neural activity. I intend to show that their philosophy of mind-as-brain is so radical because they give a powerful privilege to purely objective accounts and denounce accounts featuring some degree of subjectivity as inherently distorting. The Churchlands' own account of mind will be the subject of this chapter's section two. Section three will consist of my critique of the Churchlands precisely for the privilege they accord to pure objectivity, with an analysis of the relation between subjectivity and objectivity that underlies their thinking. I will argue that this analysis is an improper way to consider subjectivity and objectivity, and that their treatment of the objective and subjective constitutes a powerful flaw in their philosophy.

1. The Relation of Neurology to the Concept of Mind

Patricia and Paul Churchland⁵ present their works as among the most radical statements in contemporary materialist philosophy of mind. For the eliminative philosophy of mind does not truly deal with the concept of mind – indeed, the Churchlands' goal is to remove all terms referring to mind from their philosophical language. Their long-term goal is to show how humans should eliminate any colloquial reference to mind at all. They speak instead of the organism, whose actions are best described in the language of neurology – to be human is to be the human brain. This entails the emptiness of many traditional concepts of philosophy, such as the nature of the soul, God, and spirit. With this approach to philosophy, they open a wide space to develop an

⁵ Churchland, Patricia. *Brain-Wise: Studies in Neurophilosophy*. MIT Press. (2002)

Churchland, Patricia. *Neurophilosophy: Toward a Unified Science of the Mind-Brain*. MIT Press. (1986)

Churchland, Paul M. *The Engine of Reason, the Seat of the Soul*. MIT Press. (1995)

Churchland, Paul M. "Eliminative Materialism and the Propositional Attitudes." *Philosophy of Mind: A Guide and Anthology*. Pp. 382-400. Heil, John; ed. Oxford University Press. (2004 Orig. 1981)

ontology based on the organism's life in the world, based on the discoveries of neurological science. This life is constituted in the activity of the organism, as the organism moves, perceives, thinks, and so on. The participation of the organism as a part of the world constitutes the very individuality of that organism – more so than the physical makeup of its body. These are the positive ramifications of the Churchlands' philosophy, which they themselves do not explore. Because of their eliminativism, the Churchlands are content with describing the physical body with only a neuro/biological approach. They do not seem to understand that their description of humanity opens up more possibilities for thinking than it closes down.

Of particular interest for the mission statement of eliminative materialism is the commonsense laws of what Paul Churchland called 'folk psychology.' As Churchland describes folk psychology, this is the concept that our mental states of belief and desire cause our intentional behaviours. In philosophy of mind, these propositions connecting beliefs and desires to behaviour are called the propositional attitudes. Churchland takes folk psychology to be a predictive and explanatory theory of human behaviour and thought, which aims to be a complete picture of human life. He was the first to describe folk psychology in this way, and does so in order to render the concept vulnerable to his argument against its legitimacy. He sets up neurology and folk psychology as competing theories of the mind, and the theory which encompasses more phenomena and explanatory possibilities should be embraced, its competitor rejected. Churchland's account of folk psychology proceeds as follows. Using the propositional attitudes to explain behaviour presumes that there are mental entities – such as beliefs and desires – that serve a causal role in human action.⁶ For example, Tim believes that Duane considers him a failure in life, this belief caused Tim to become angry, and it was this belief in conjunction with his emotional state that constituted the cause of Tim shooting Duane in the crotch at close range during a paintball tournament.⁷ The belief is an explanation for the event, which is seen as Tim's

⁶ Churchland, Paul M. "Eliminative Materialism and the Propositional Attitudes." Pp. 383-6.

⁷ Pegg, Simon; Jessica Stevenson. "Battles." Spaced. Channel 4 Television. (1999)

intentional action. "The average person is able to explain, and even predict, the behaviour of other persons with a facility and success that is remarkable. . . . But explanations presuppose laws – rough and ready ones, at least – that connect the explanatory conditions with the behaviour explained."⁸ This example is a plausible account of how people use propositions about beliefs, desires, and emotions – the language, or set of propositions, describes the intentional actions of a freely choosing agent – the folk-psychological picture of the human.

Beliefs and desires are the elementary objects which folk psychology posits as the most basic units of thinking, Churchland says. Folk psychology has as the centre of the theory an image of the mind itself as a thing. When we talk of beliefs, thoughts, and other mental entities we mean that they are things that exist as part of one's mind – Churchland's description of folk psychology takes each mental entity to be a thing. Each time we speak of a mental thing such as a belief, Churchland says we commit ourselves to an ontology of each particular belief being an existing thing, like a rock or a shampoo bottle or a curry. Yet he says that we have not yet seen a belief, or built the requisite equipment to do so, and eliminative philosophy takes as a premise that it is only proper to speak of any entity if that speech act refers to some thing. That is, it is legitimate to speak of a belief, desire, or thought only if there is such a thing. This is not to say that reference to a non-existent thing is nonsense, for that would mean that all talk about fictional entities would be nonsensical, which is not what the Churchlands want to say.

Their central issue is that to base an ontology on reference to what does not exist is a mistake, and their case is that this is precisely the mistake made with folk psychology. This point also lies at the basis of the Churchlands' critique of most philosophies of mind that compete with their own. Throughout "Eliminative Materialism," there is criticism directed at any philosopher who uses the word 'belief,' as if the simple use of a noun implies the existence of a physical thing. If I am to justify my use of the noun 'belief,' Churchland says that I must be able to observe a belief with the proper equipment just as I can observe an electron or an extrasolar planet with the

⁸Churchland, Paul M. "Eliminative Materialism and the Propositional Attitudes." Pg. 383.

proper equipment. He concludes that we will never observe a thing that we would call a belief in the same manner as we would an extrasolar planet, because beliefs do not exist as things, only as fictions. In speaking of mental entities as if they existed, we posit mental entities as existing as the explanatory ground of human actions. Until such mental entities are detected in some way, the ontological posits of folk psychology are used frequently in daily life, but remain untested in the most rigorous sense. The aim of the eliminativist project is to show that such a test will ultimately fail, and that a complete reorientation of what is colloquially taken to be the foundation of behaviour is necessary.

The eliminative project considers the propositional attitudes as a unified predictive / explanatory theory which legitimizes vague talk of beliefs and desires. Churchland makes a case that the propositional attitudes are an utter failure as a predictive / explanatory theory. Folk psychology, he says, gives us a reasonable structure for the prediction and explanation of the beliefs of fellow humans and other animal species. But the theory fails when one attempts to pinpoint the specific entities themselves in the physical being of the individuals. Folk psychology posits that certain things – beliefs, desires, and so on – are existing things, when they really are not. Churchland says that neurology has allowed us to learn more about thinking than folk psychology without making unnecessary posits of existence. Neurology has uncovered greater complexity in thinking than had been possible to imagine in the context of folk psychology, such as the following.

As examples of central and important mental phenomena that remain largely or wholly mysterious within the framework of folk psychology, consider the nature and dynamics of mental illness . . . the internal construction of a 3D visual image from subtle difference in the 2D array of stimulations in our respective retinas. Consider the rich variety of illusions, visual and otherwise. Or consider the miracle of memory, with its lightning

capacity for relevant retrieval.⁹

The discoveries Churchland brings up in the above quote are challenges to folk psychology because neurological science presents them as intrinsic to our understanding of thinking. Yet they are entirely new to the public account of mind, only arising in the last century. These concepts are entirely novel to folk psychological reasoning, and could not have been generated within such reasoning. These failures show that folk psychology lacks the comprehensiveness of neurology as a predictive / explanatory theory. Replacing folk psychology with neurology, as Churchland says should be done, can provide a radical reorientation of our very image of what the mind is.

The “Eliminative Materialism and the Propositional Attitudes” essay is the early mission statement of the Churchlands’ project, and clearly stated the major themes of their later philosophical works throughout the 1990s. It is from this point that I shall begin the exposition of that project. The ontology of eliminative materialism begins with that which can be physically observed – the brain in the larger context of the neural system. They describe the neurological predictive / explanatory theory of the mind as an entirely objective account. Events and the relations between them are described using entirely third-person language – the creation of the individual’s perspective itself is explained as an entirely objective process. First-person perspective holds a central place in folk psychology – there is an I who believes and desires, and much of the predictive and explanatory application of folk psychology is in the relation with other I’s, working out the reasons why some I acted one way or what some I might do in the future. I will argue that the Churchlands are hostile to folk psychology because the first-person perspective is the framework of folk-psychological predictions and explanations.

A more perfect science, according to the Churchlands’ view, is one that transforms the

⁹ Churchland, Paul M. “Eliminative Materialism.” Pg. 387. He also mentions several avenues that remain something of a mystery to neuroscience in the 2000s, such as the faculty of creative imagination, our knowledge of the mechanics of sleep and dreaming, and the foundations for individual differences in intelligence. Those that I have quoted here, between 1981 and 2007, have been relative success stories for neurology in terms of what knowledge we have gained from scientific study of these particular problems.

first-person – subjective – account into a third-person – objective – account. Doing so makes most talk of the mental redundant. Paul Churchland’s argument in “Eliminative Materialism” implies that it is this subjective perspective that leads one to believe that there really are such things as beliefs and desires. Subjectivity is the source material for folk psychology, and since folk psychology, according to the Churchlands, encourages one to believe in non-existent entities – beliefs, desires, and so on – subjectivity is not a valid approach to working out what does and does not exist. As far as the Churchlands are concerned, beliefs and desires do not exist, so any perspective that leads one to the conclusion that they do is a faulty perspective. The Churchlands aim to build a purely objective philosophy of mind so as to avoid these faulty conclusions, and this they call neurophilosophy. We should first understand this new concept of neurophilosophy before a proper critique can be made. The next section will explain neurophilosophy’s concept of mind, and the section following that will critique neurophilosophy for its bias of the objective over the subjective.

2. Neurophilosophy’s Account of Thinking

This section shall be concerned with the question of what exactly the Churchlands consider thought to be. If beliefs, desires, thoughts, et al, do not exist as things, then do we ever really think? They never deny that, but instead give an account of thinking, not thoughts. Paul Churchland at the end of “Eliminative Materialism” imagines distantly future societies where people communicate not with language, but with person-to-person neural interfaces like radio antennas for the brain – a kind of technological telepathy. Such speculation does not continue in the rest of the Churchlands’ work – if it did, they would no longer be writers of philosophy, but of speculative fiction. The interaction of neurons in the system of the human brain as central coordinator of the sensorimotor system is key to all human thought and action. The activity of the sensorimotor system itself is characterised in a manner securely rooted in the neurological

research of the last twenty years, particularly in the insights of the efforts to replicate neural activity in artificial systems. These artificial systems are themselves neural networks built out of inorganic components, and the brain is a system of many such networks. We can consider the Churchlands as giving an account of the brain as a network of networks, all interdependent on each other in the totality of brain activity. The network of neural networks that is the brain is seen as the medium through which thinking and qualitative experience takes place. The neuroelectrical activity of the neural network composes the qualitative experience of the world, a map of the world in the brain. These maps in the fabric of the brain are our actual experience, and these maps are translations of the world itself onto physical neural networks. The neurophilosophical project seeks to describe this act of neural mapping, and show how all the typical attitudes of life emerge from these experiential maps.

Patricia Churchland's simplest description of the physical acting organism is articulated in the context of investigating how sensorimotor control works. To take her own example, a person sees a plum hanging off the branch of a tree, and because this person is hungry, she wants to grasp the plum with her hand and pull it off the tree to eat.

Simplified, the problem for a nervous system is this: the visual system has a *retina-based story* about where the plum is, but the motor system has to have a *joint-angle story* about where the plum is, since it is the arm that must reach and the fingers that must grasp the plum. So the motor system needs to know what joint-angle combination will serve to achieve the goal.¹⁰

Completing this action involves multiple emulators, existing as part of the nervous system, which map the organism's surroundings as patterns of neuroelectrical activity. An organism's action in a world is the identification of a point in space followed by or combined with the movement towards that point. The act in question is to reach for a plum hanging on a tree and pluck it from its branch. But Churchland understands that act in terms of the identification of a point in space, and a series of movements toward that point. She considers all data other than this basic

¹⁰ Churchland, Patricia. *Brain-Wise: Studies in Neurophilosophy*. Pg. 77. MIT Press. (2002)

explanation extraneous – a paradigm case of reductive understanding. The function of the nervous system of the organism is to map action plans, simulating all action before it is done, but in such small timeframes that the mapping of the action is virtually simultaneous with the action itself. Plotting the physical location of objects around the organism is a visual problem, solved through the neural mapping systems having to do with the vision-sensing apparatus of the organism – the eyes. Light rays enter the eyes and the neural system maps that light into visual data, and this visual data is a representation of the organism's surroundings – this visual map emulates the organism's surroundings. And the visual emulation is represented again by the neural network controlling the organism's physical movements, what Patricia Churchland calls the joint-angle representational system. For this map, the visual data has been transformed – represented again – into a new context, an emulation of the organism's physical movements in space and over time as the central object in one's surroundings.

She diagrams her emulator model of neural network action-planning with the plum problem. The goal of the organism is to get the plum, and the brain runs an emulator of as many possible actions as it takes until the automatic functions of the neural network calculate that error in movement is at its smallest possible value. Actions are plottings on the representative map of the body's possible physical movements in space over time prior to the movement itself, which is the enactment of the successful plot. An organism moves through its neural network plotting the body's actions on a representative map, assembled from sensory data. The essential action of an organism's neural network is mapping, according to Churchland. In this case, the coordinating neural network of the sensory system builds a representative map of the organism's surroundings. Then the motor control network re-represents this map as a sensorimotor plan for the organism's physical action. Churchland even gives an account on the emulator model of involuntary motions like breathing or absent-minded motions like stroking one's thigh while deep in thought on some other topic.¹¹ One should also take note that she describes the neuroelectrical activity

¹¹ Churchland, Patricia. *Brain-Wise: Studies in Neurophilosophy*. Pp. 80-8.

within the organism, as well as the behaviour of the organism in the world by reaching for the plum and eating it.

Neural representative mapping is not only done with the plotting of one's surroundings and one's physical movements in that context. A key example that both Patricia and Paul Churchland use in their works is the process of face recognition. Using research on artificial face recognition software, they make an account of how the brain builds possibly the most complex representative map of the human organism – the map on which are plotted all the possibilities of human faces. It is also through this example that they each demonstrate what they take to be the mathematical foundation of the neural system's representational function – vector coding. The Churchlands describe as a physicalist version of folk psychology the idea that individual thoughts are themselves encoded in the brain as physical unities – that we can find one particular brain state common to all individual brains for, as an example, the thought 'Paris is capitol of France.' As explained earlier, it is Patricia Churchland's premise that if one uses a term to refer to an object, then that object must physically exist exactly as the term describes. Not to do so is to misapply the term in question to the object. Instead of this isomorphic conformity of one belief statement to one corresponding physical structure, encoding in the neural system

depends on the idea that features are represented in specific *patterns* of activity in a *population* of units, where each neuron has a tuning curve, perhaps quite broad, and tuning curves overlap, perhaps quite a lot. . . . The elements in a particular [mathematical value of a] vector are values standing for properties such as the activity levels of each neuron in the relevant population.¹²

There is no single neuron or energy level of a single neuron that corresponds to a thought as we would typically express it in colloquial language. Instead, thoughts and representational maps of emulation that we have described above are patterns in huge collections of neurons. These patterns are best represented in our own understanding in the mathematics of vector encoding. Vector mathematics is how Churchland takes the brain to form its representational maps.

¹² Churchland, Patricia. *Brain-Wise*. Pp. 290-1. Italics hers. Insertion mine.

The full power of vector coding to form representational maps in the neural network of the organism is displayed in the account that Patricia and Paul Churchland give of how the brain recognizes faces. It is important to note that this is their precise terminology – not how the person, or how the organism recognizes faces, but how the brain recognizes faces. In both Patricia Churchland's *Brain-Wise* and Paul Churchland's *The Engine of Reason, The Seat of the Soul*, there is a diagram of the type of mapping they envision taking place in the human neural network. It is a diagram of what they call the parameter space. Their diagrams consist of a cube, the height represents the minimum to maximum values for nose width, the length the minimum to maximum of mouth fullness, and the cube's width the minimum to maximum values for how far apart the eyes are. This is a highly simplistic way of representing what is in fact a far more complex set of values. They themselves refer to their diagrams as crude and rudimentary, as it is only possible on a sheet of paper to represent easily three dimensions.¹³ An accurate diagram to represent facial mapping in the human neural system would have 80 dimensions, if the fairly successful artificial face recognition software programs are any guide to the complexity of the vector coding in the human neural network.

If the artificial networks are any guide to understanding the representational mapping of faces carried out by the human neural network – and both Churchlands assure us that the success rate of the artificial programs constitutes good evidence for thinking so – then we have a clear sign that the human brain operates on a system of multi-dimensional vector coding. Neurons operate in a manner interdependent on each other. No one neuron represents any one element – neurons all function together in a network which, as a whole, represents features of the world and activities of other parts of the organism's neural network. The particular state of each individual neuron is itself a value in a representational parameter space embedded within the neural network itself. The state of a neuron is but one single value in a complex representational map of multiple

¹³ Churchland, Patricia. *Brain-Wise*. Pg. 292.

Churchland, Paul. *The Engine of Reason, The Seat of the Soul*. Pg. 28, ff. MIT Press. (1995)

dimensions. Each dimension in a neural representative map is all the possible values for one feature represented in the map. Patricia Churchland uses the term 'hyperspace' to refer to the huge number of dimensions of values this representational space can have. Regarding the representative vector coded maps that store information, these are even more complex, as they are estimated to consist of at least 300,000 dimensions.¹⁴

3. *Eliminative Philosophy as Pure Objectivity*

We now have a basic outline of the neurophilosophical account of the activities we typically associate with the concept of mind. The purpose of this section is to understand the – in my view, improper – privilege the Churchlands give to the objective perspective in this account. The activities of the individual – which that individual herself may describe using the first-person perspective – are here described from an entirely third-person perspective. This issue of perspective is not merely a matter of whether one says 'I' or 'it' as the active subject of one's sentence when describing some action. One can characterize the first-person and third-person perspectives respectively as subjective and objective. These can be taken as epistemological approaches to the world. The subjective is to perceive and understand from the perspective of an individual embedded and living in the world. The objective is to divorce one's perspective from one's individuality, which enables one to perceive and understand from a perspective without perspective. We can better understand the perspective of pure objectivity with input from Thomas Nagel, in his book *The View From Nowhere*. He describes a continuum of perspectives, ranging from a purely subjective to a purely objective. An epistemological perspective can be constituted as a complex blend of subjectivity and objectivity, but what interests me here are the most extreme articulations of these perspectives. Pure subjectivity he describes as a simple

¹⁴ Churchland, Patricia. *Brain-Wise*. Pp. 292-301. These are not actual spatial dimensions existing in the brain, but the dimensions necessary for a map to represent accurately the information encoded in the brain for various functions and contexts, where each dimension stands for a particular attribute measured in the encoded levels of neuroelectrical activity.

solipsism, which we progress beyond when

[We] see that our perceptions are caused by the action of things on us, through their effects on our bodies, which are themselves parts of the physical world. The next step is to realize that since the same physical properties that cause perceptions in us through our bodies also produce different effects on other physical things and can exist without causing any perceptions at all, their true nature must be detachable from their perceptual appearance and need not resemble it.¹⁵

The perspective of pure objectivity is “not thinking of the physical world from our own particular point of view, [nor] thinking of it from a more general human perceptual point of view either: not thinking of how it looks, feels, smells, tastes, or sounds.”¹⁶ This framework of pure objectivity is the conceptual foundation of the Churchlands’ eliminative approach to philosophy of mind. The perspective of pure objectivity is precisely a perspective from nowhere, the point from which one can take an inventory of things that exist and catalogue the activities of those things. Any properties of qualia are not counted in such an inventory from this perspective because qualia are not themselves physical things. The problem of qualia in contemporary philosophy of mind is that they can be taken, as in Chalmers, as being irreducible to anything physical. The Churchlands say qualia are reducible, and so can be described from such a perspective of pure objectivity. I will critique this understanding of irreducibility in chapter two, but until then I continue the critique of eliminative philosophy.

As Nagel describes the purely objective perspective, this is the mode of characterizing reality that the Churchlands aim for their neurophilosophy to achieve. The Churchlands aim to incorporate that which is peculiar to the subjective perspective into the purely objective account of the world they build. The perceptual qualities of how the world looks, feels, smells, tastes, and sounds are all explained as neuroelectrical activity.¹⁷ We said earlier that the Churchlands found the subjective perspective inherently problematic, because it was the act of living one’s life in the

¹⁵ Nagel, Thomas. *The View From Nowhere*. Pg. 14. Oxford University Press. (1986)

¹⁶ Nagel, Thomas. *The View From Nowhere*. Pg. 14.

¹⁷ Churchland, Paul. *The Engine of Reason, The Seat of the Soul*. Pp. 21-34.

subjectivity of the individual perspective that leads one to postulate the entities of folk psychology – the beliefs and desires and so on. Since beliefs and desires have no physical existence as things, any perspective that would make the existence of beliefs and desires seem plausible must be inherently flawed. The Churchlands intend to eliminate what they see as the mistakes about what exists which subjectivity makes possible by subsuming the activities that generate subjectivity in an objective account.

Neurophilosophy casts the subjectivity of an individual's perception in living within an objective framework of neurological processes. As such, one can build an account of the human individual that does not account for beliefs and desires as actual entities, but as the patterns of activity that constitute themselves in a neural system. Neurophilosophy describes a belief not as a unified thing that exists in the brain, but as a pattern of neuroelectrical activity. A belief does not exist in the brain as a clearly identifiable object – which is the criterion the Churchlands give for saying that beliefs exist. A belief exists insofar as there is a complex pattern of continually shifting neuroelectrical activity throughout the neural networks of a human's brain that causes that human to act in a certain manner. We would define this manner of behaviour in colloquial language by saying something like, "Fred believes that x ," a propositional attitude. The Churchlands' neurophilosophy is a way of looking at mind that is not only a thorough physicalism, but also gives no validity whatsoever to the subjective perspective. Objectively speaking, a belief does not exist, but the activity of believing does exist – such activity is the creation of several particular patterns in the neuroelectrical activity of an individual organism. Neurophilosophy is a purely objective way of rendering the subjective individual perspective of a life. While the Churchlands would consider it a mistake to refer to 'beliefs,' it is not so to refer to 'believing,' for the reasons established above.

What is the character of the world described from the purely objective perspective? The observer in the purely objective perspective is not a conventional observer. The objective

perspective as we have described it here is notable since it is not a perspective *in* the world, but a survey of the world from a position *divorced from* it. From the objective perspective, the perceiver is no longer part of the world perceived – he is instead an impassive observer, watching events unfold in the world as if they were on a map, describing physical relationships as they exist among thing to thing. We can say this method of description characterises how one thing is *physically present* among other things. Describing a thing in the context of its physical presence, it is only legitimate to discuss the thing's physical body, and location and motion relative to other things. Understanding the world in terms of its physical presence (that is, in terms of the objective perspective) is to understand the world as if one was mapping a complex pattern of events and things on a grid where there is no origin or centre point. The objective observer can understand how the different things move and relate to each other, but the purely objective perspective is the precise removal of perspective from one's account of the world.

The observer and author of the description in the purely objective perspective is not related to that which is described, for the reasons that we have earlier explained about the apparent distortions that the Churchlands see inevitably coming from the subjective perspective. As Nagel describes pure objectivity, its proponents – the Churchlands in particular – see the approach as a means of escaping perspective, of standing outside the world and in an entirely neutral relation to the world. They would say that to describe objectively is to describe what really happens. Description from the objective perspective focusses on that which is; not that which ought to be or that which is formulated in any kind of intentional attitude. Such attitudes, according to the Churchlands, are invalid for having nothing to do with what is physically present. The accurate description is that given in the objective perspective – the description of things and their activity. This is physical presence – what it is to be considered as presence in the objective perspective.

What is it about the subjective perspective that constitutes its difference from the objective? If we can cast the metaphysics of a world understood from the objective perspective as

physical presence, then we can cast the subjective perspective as *presence to the organism*.

Explaining the concept of presence to the organism requires some groundwork, supplied by my interpretation of the Churchlands' account of perception. This account is a purely objective description of how the subjective perspective works, as given in *Brain-Wise*. Neurophilosophy describes organisms. The organism is observed to be physically present, and it is present only in the sense that the organism is a thing in the world that moves and acts. The objective perspective observes the organism in its existence – the organism is a physical presence in the world, existing among other things, some of which are also organisms. Physically, the organism senses, handles, and moves in relation to the things that surround it. Yet the Churchlands describe the organism as basically one thing existing among others. Neurophilosophy examines the neural mechanics of this thing. The parts of the mechanical system that the organism is, are likewise things that exist with others in particular physical relationships. As an organism exists in its physical presence, it is one object among many, one thing moving among other things.

Patricia Churchland takes the simplest sensory system, that of touch, and in explaining the basics of this category of perception, extrapolates to what is essential to all sensorimotor systems. She describes an experiment where a human fingertip is poked with the end of a stick. Each poking is carried out for the exact same amount of time, and with the exact same pressure. Only the shape of the stick's end is changed. The resulting neuroelectrical activity of the touch-sensitive neurons varied in a manner of increasing firing frequency directly proportional to the increasing sharpness of the stick. The sharper the surface impacting the fingertip, the higher the frequency of electrical activity in the affected neurons. This neural data is the raw material for the touch-sensory qualia of experience.¹⁸ The relationship between the two things – the organism and the stick – is here described in a purely objective way that encompasses the constitution of the qualitative experience of that relationship in the subjective perspective. This constitution is the neural activity, the activity of the brain that constitutes experience from the surrounding events.

¹⁸ Churchland, Patricia. *Brain-Wise*. Pp. 95-7.

The events themselves are encoded into the neuroelectrical pattern, consistently transformed from an event that is physically present in an organism's surroundings into a neuroelectrical code such that the encoded event now exists as it is present to the organism.

This pattern of activity is itself the event, but the event as it is present to the organism, not as it is physically present. My choice of words may make me sound as if I abandon the physicalism which at the beginning of this thesis I professed my philosophical inquiry would hold. Physical presence and presence to the organism are two ways of describing the relation of one thing to another, and the different character of the relationship between things when one of more of those things is an organism. I will explain further the distinction between physical presence and presence to the organism over the rest of the thesis. The sensorimotor system itself takes events that coexist with the organism – events taking place within the organism's sensory reach – and encodes those events into the patterns of the neural network. With this account in mind, we can interpret the neurophilosophical account of perception as the translation of physical presence into presence for the organism. The Churchlands themselves never use this concept of translative perception, however. As I explained in §2 of this chapter, they instead discuss the sensorimotor neural networks as constituting the qualia of experience by representing them as neural maps of the organism's surroundings. I choose not to use the word 'representation,' because of the dualist connotations of the word. In the context that the Churchlands use it, one could interpret them – incorrectly in my view – as themselves guilty of a kind of neurological idealism, saying that one only experiences that which is represented inside the neural network and never the events themselves that surround one. This perceptual dualism is not how they or I intend to describe perception, so the way I use 'translation' is more faithful to the physicalist philosophy of mind I intend to articulate. So I describe perception here as translation from physical contact of one thing with another into a pattern of neuroelectrical activity.

Understanding the translative concept of perception allows us to understand the concept

of presence to the organism. A thing is present to the organism when that thing is physically present such that an organism observes it and translates it from its simple physicality to a pattern of neuroelectrical activity constituted through the mechanical operation of the organism's sensorimotor system. Returning to Patricia Churchland's example of a sharp stick poking my fingertip, the event is described in its physical presence as the impact of one thing with another. The encoding action of perception brings the perceived thing into presence for the organism, but this does not mean the thing no longer exists as physically present. A thing's presence for the organism is another kind of presence, another way in which the thing exists, in addition to its physical presence. The event is translated into a new mode of presence in the act of perception. This new mode of presence – presence to the organism – is the presence of a thing as it is in qualitative experience. The qualia of experience themselves are constituted in the translative encoding actions of the physical sensorimotor apparatus for every individual organism, in the manner that the Churchlands described above. Chalmers' problem of qualia that we discussed in the introduction was his puzzlement over how experiential qualia themselves are part of a physical process. The process of encoding physically present events and things by a translation apparatus of neuroelectrical patterns is itself this physical process of constituting qualitative experience.

The concepts central to our own account here of neurophilosophy – physical presence, presence to the organism, translative perception – are not the Churchlands' concepts, as the Churchlands restrict themselves to neurologically-themed language in their account of humanity. This is because of their doctrine of eliminativism described earlier. Yet these concepts have been derived from the Churchlands' philosophy, so that we can understand neurophilosophy from a non-neurological perspective of thought. From an eliminative materialist philosophy, to exist is to be physically present. Presence to the organism is how an existing thing is perceived by a perceiver, a perceiver being an organism having a sensorimotor system. Translative perception is the account of how a physically present thing is encoded in an organism's sensorimotor system as

a neuroelectrical pattern, becoming present to the organism. This activity is perception explained in a physicalist context. The greatest benefit of the Churchlands' neurophilosophy for my own inquiry into philosophy of mind is that they take it as possible that life itself in all its details is physical, and that neurology can have genuine philosophical import. Neurophilosophy constitutes a radical break with much of philosophical tradition, yet in its eliminativism it also constitutes a standpoint at which philosophical inquiry ends, because the reductive principle of eliminativism forbids the creation of new concepts. The Churchlands consider valid only those concepts that arise from the description of relations between physical things from a perspective that is situated outside all situatedness. For the Churchlands, to understand is to simplify radically one's account of that which you aim to understand, since one simplifies by rejecting concepts that do not directly refer to physical things that do exist.

While the Churchlands have a great deal to offer in terms of physicalism, their eliminativism prevents me from giving them my whole-hearted support. My philosophical approach is based on building a nuanced understanding, instead of a reductive understanding. As it stands in the context of the Churchlands' own philosophy, the only concepts that are valid for neurophilosophy are those concepts created from the examination of physical actions and relations from the objective perspective. In the rest of this investigation, I intend to show how perspectives other than this one are not distortions of the real or generators of illusion, but can be quite productive for philosophy. The central concept of neurophilosophy that remains important to our inquiry is that mind, thoughts, beliefs, and so on do not exist as things – but are activities. That is, there are no thoughts or beliefs, but there is thinking and believing. The Churchlands develop this concept no farther beyond their description of the neuroelectrical activities that constitute thinking. The reason for this is their eliminative approach to philosophy. Where the Churchlands would discount all philosophies except for their own systematization of neurological research, I see potential to broaden and deepen our understanding of this concept of mind,

thought, and perception as activities that constitute themselves in the process of their own action. The following two chapters move my research away from strict neurophilosophy and searches for this concept as it is articulated in the works of other philosophical writers. This concept of mind as self-constituting¹⁹ activity is the common region that connects several strands of contemporary philosophy, and the concept will lead us to interesting conclusions about what it is to be alive.

¹⁹ The term 'self-constituting' is to be understood in a reflexive sense, as in, the activity itself generates and develops the activity as long as the activity continues. It is not to be understood as referring to some thing, the self, as in, the activity constitutes a thing called a self. The concept is important for my own project here insofar as no thing is created, only the activity.

II. The Concepts of Broad Physicalism

The major point of this chapter is to examine how functionalist philosophy of mind can help build our non-reductive physicalism, and its limitations in this task. To do so, I will identify how the concept of mind as activity is present in functionalist philosophy of mind, and show – despite the protests of the Churchlands – the common conceptual territory between neurophilosophy and certain works that could be called functionalist in their treatment of mind. The commonality between neurophilosophy and functionalism consists precisely in their shared concentration on the mind as it is generated in the activity of a physical system. Where they differ is on the character of the language used to describe that activity. On the whole, many functionalists – similarly to the Churchlands – take there to be no physical things called beliefs, for example, but affirm the activity of believing. Functionalism is not eliminative because such philosophies see no need to remove such nouns as ‘belief’ from language. One must simply be aware that these nouns refer to activities. The first section gives the general picture of functionalism in this regard. The second section takes recent work by Jaegwon Kim to illustrate that while a functionalist approach to mind avoids eliminative thinking, functionalism’s conceptual framework remains mystified by the question of qualia. The third section expands on a metaphor in an essay by David Lewis to use his image of mind as pattern in the context of my own investigation into the concept of mind as activity. The Churchlands discussed how a neural system inside an organism constitutes what is colloquially called mind in the activities of perception and motion. Lewis’ image will be the first step in showing how an organism’s activity in the world as well as in its sensorimotor system plays an equally important role in constituting mind.

1. What Is Functionalism?

We have discussed how the Churchlands’ neurophilosophy understands that which we colloquially call ‘mental’ as a matter of the activities of a complex neural sensorimotor system.

This creates a conceptual common ground with the mainstream of analytic philosophy of mind, functionalism. Functionalist philosophy is blatantly centred on the principle that mind is to be defined not as a thing, but as an activity of an organic body – though without the neurological rigour of the Churchlands. It is a physicalism without a reductionist take on its concepts. Broadly speaking, functionalism accepts a distinction in language between talk of roles and talk of occupants. In philosophy of mind, terms of mental states are taken to refer to roles which particular physical states fill. Pain is often used to illustrate this. A functionalist account of pain could – broadly speaking – consist of the following. The role of pain is characterized by the relationship of input and output, which we could also consider action on an individual organism and that organism's response. The occupant of pain is the sensorimotor system of the organism itself. It is the organism's state of being in pain that causes the behaviour of various kinds of expressions such as yelping, linguistic statements such as "That really hurt, you bastard," and avoidance behaviour in the future regarding the physical event that put the organism in pain in the first place.

Functionalist parlance discusses the function of a particular physical state of that organism such as being in pain, where we have discussed the concept of an organism's sensorimotor activity. The occupant of this role – the physical material which carries out these actions – would be the neural networks of the brain and sensorimotor system. To understand the whole phenomenon of the action of an organism, one would need to understand the roles and the occupants. In our example, this would be the pain behaviour and the neural systems that act in the manner of pain behaviour. Reliance on the parlance of the mental in functionalism results in some ambiguity about the precise nature of that which is typically called mental. The activities – or rather, functions – that define the mental for this philosophy are not simply the behaviours of an organism that are observed in daily life. Behaviour may be completely different while the role – or rather the activity of the physical occupant – may still be that of pain. Take Hilary Putnam's

essay "Brains and Behaviour," where he imagined the existence of a person who would be in incredible pain, yet possess such self-discipline that he would not show it.²⁰ This person would undergo all the neuroelectrical activities of pain, but his behaviour would not demonstrate it. The occupant in Putnam's example is just another person like you or I, but the role of the behaviour associated with pain would be remarkably different from what we are typically used to. The particular neuroelectrical activity that constitutes the sensation of pain may also vary from incident to incident.

One important aspect of functionalism, which also offers an interesting parallel with neurophilosophy, is that the organic brain is not the only thing that can carry out these activities. Functionalism takes the activities of mind to be realizable in multiple substances, the number of which is limited only by the capabilities of the substance involved and the ingenuity of the builders of artificial brains. We saw in our earlier treatment of the Churchlands' philosophy that many particular aspects of their insights about the human brain were drawn from their analysis of artificial neural networks. A neural network can be constructed from material other than that of an organism like those we find on Earth. This is a key tenet of functionalism as well, since the functional term of – to take once again an often used example²¹ – being in pain can apply to any object with similar physical structures, which could likely express similar behaviours of yelps, expletives, and future aversion behaviour. A functionalist account has the same roles able to be enacted by a variety of different occupants and arrangements of occupants.²²

Giving credence to a functionalist account of phenomena is to say that formal roles are

²⁰ Putnam, Hilary. "Brains and Behaviour." *Philosophy of Mind: A Guide and Anthology*. Pp. 102-4. (2004 Orig. 1965) Putnam speculates about hypothetical people he calls super-Spartans who can go through tremendous physical torture without expressing pain, but there is no need to invent a fictional example of such individuals. Real people do this every day, usually connected with religious rituals, as in acts of self-flagellation during certain Shi'ite festivals, or Buddhist monks demonstrating indifference to physicality.

²¹ Block, Ned. "What Is Functionalism?" Kim, Jaegwon. "Mental Content," "Multiple Realization and the Metaphysics of Reduction;" Putnam, Hilary. "Psychological Predicates;" all included in *Philosophy of Mind: A Guide and Anthology*.

²² Fodor, Jerry. "The Mind-Body Problem." *Philosophy of Mind: A Guide and Anthology*. Pp. 173-6. (2004 Orig. 1980)

important to explanations of an event, just as important as the individual object which carries out that role. Central to functionalism is the distinction between talk of roles and talk of occupants – each has its own specific and distinct context of relevance. When we say that roles are important in explanation, we admit that functional understanding does not necessarily take noun words like ‘belief’ and ‘desire’ as positing that beliefs and desires are physical things, as Paul Churchland denigrated all talk of beliefs and desires for doing. Beliefs and desires, for functionalism, are the activities of believing and desiring. The words ‘belief’ and ‘desire’ refer to the roles those activities play in social discourse. Though the Churchlands set their neurophilosophy in opposition to functionalism,²³ this account of functionalist philosophy is able to encompass talk of neural activity as an element of the overall description of an individual’s activity – talk of neural activity is talk of the occupants. The functionalist account of pain would also include talk of the mental state of being in pain, in the context of being the causal role. Considered in this sense, we can see a functionalist approach to an organism’s life in the world taking talk of mental states as being valid, but as a general description of an event.

Functionalism speaks of mental predicates in terms of causal efficacy. A belief, or any kind of what functionalist parlance would call a ‘mental state,’ is to be defined in terms of its causal role, or causative activity, in the actions of an individual organism. I eat the chocolate square because I like the taste of chocolate and its mild pleasurable effect. This ‘liking’ is a mental state, a role filled by certain neuroelectrical activities, which is a direct cause of my eating this particular chocolate square with my lunch as I see it in its box in my kitchen cupboard. The functionalist account here has recast my belief as a mental state having direct causal relation with the patterns of my behaviour. But observe what it has conserved, left untransformed – the typical colloquial language of beliefs and desires. The vocabulary set that the Churchlands would call folk psychology – positing the existence of beliefs and desires and so on in the special ontology of the

²³ Churchland, Paul M. “Eliminative Materialism and the Propositional Attitudes.” *Philosophy of Mind: A Guide and Anthology*. Pp. 382-400. Heil, John; ed. Oxford University Press. (2004 Orig. 1981)

mental state – is retained. Ned Block’s essay “What Is Functionalism?” gives an account of how colloquial language of mental states is represented in logical notation – how talk of mental states is given logical consistency as a formulation of objective propositions.²⁴ A complete description of a human action would be to describe both the action as the body physically and observably carried it out, as well as the mental activities that were the causal conditions of that action. A key element of the causes of an organism’s action is the organism’s mental state – the process of making a decision. No directed action would be possible for an organism were it not for the function of thinking.²⁵ Had I not been able to think, I would not have reached for the chocolate square this morning, or indeed done any activity that one could call conscious activity. The existence of mental states is the condition for the possibility of intentional human action.

In a sense, the Churchlands would agree that an organism thinks. Their difference with functionalist philosophy is a difference in language, as the Churchlands reject talk of the mental as confusing and unnecessary. They hold that the activities of thinking, perceiving, and so on can be better explained with neurological rather than mentalist vocabulary. The functionalist concept of the ‘mental state’ is central in the explanation of the role thinking plays in behaviour, and the Churchlands claim that this term implies that there is a thing called a ‘mental state’ that exists over and above the activities of the physical sensorimotor system of neuroelectrical signals. A bridge between neurophilosophical and functionalist perspectives can be found in the work of Jaegwon Kim, particularly in his book, *Physicalism Or Something Near Enough*.²⁶ While Kim’s work does not focus quite so heavily on neurological accounts of thought and action, he generally endorses a reductive account of mentality. Kim’s recent work does not mention the Churchlands in any significant sense, but he ultimately aims at an account of the human organism that is a matter of describing physical things and activities that constitute the organism. Kim’s book sets

²⁴ Block, Ned. “What Is Functionalism?” Pp. 194-7.

²⁵ I do not take reflex action to be an example of directed action. The importance of my focus directed action will be better understood in the context of chapter three.

²⁶ Kim, Jaegwon. *Physicalism, Or Something Near Enough*. Princeton University Press. (2005)

this problem in a context of how the role-occupant relationship works in the philosophy of science that further elucidates the central concept of our inquiry – that of mind understood as activity.

2. *The Strengths and Weaknesses of Functionalism*

The reason Kim's functionalist physicalism is important to my inquiry is because his philosophy, especially as explicated in his *Physicalism*, states the problem that functionalist language faces when attempting to account for the nature of the qualia of consciousness. I said in the introduction to this thesis that a non-reductive physicalist philosophy of mind must stand consistently against reductionism (and its more aggressive cousin, eliminativism) and account for the qualia of consciousness. This section will first situate Kim's work relative to the Churchlands, conceptually. There follows an explication of Kim's functionalism, ending with the qualia question, which is a stumbling block for him. The purpose of this section is to point out that while the Churchlands embrace reductionism but have an interesting answer to the qualia question, Kim blatantly embraces physicalism without being openly reductionist. Yet he does not offer a final solution to the question of whether one can build a non-reductive physicalism because he falters by giving up on how to incorporate qualia into his philosophy of mind. This failure points to Kim's own more subtle, perhaps unintended, reductionism.

Recall the previous discussion of Paul Churchland's "Eliminative Materialism and the Propositional Attitudes." That manifesto took there to be certain ontological assumptions built into our colloquial talk about beliefs and desires as the motive of human action. Our account of human action revolves around words that describe thoughts and beliefs and ascribes them as the key motivators of an organism's act. The Churchlands' neurophilosophical project was to examine the discoveries of neurology in their full ontological implications in the following manner. Instead of some thing in the brain that could be plainly identified as *a* belief, what is actually

present to the investigator of the brain is a complex mechanism of pattern formation in the neuroelectrical system. It is these highly complex interdependent and interlocking patterns of activity that are our beliefs, desires, imaginings, experiences, and so on. Mental entities do not exist in some directly one-to-one relation between our linguistic statements and our brain-states. From the perspective of our understanding of neurophilosophy, an organism's linguistic assertion such as "I would like to eat an ice cream" is the end product of a long and complex pattern of neuroelectrical activity encoded through a network of neural networks. The brain synthesizes a wide variety of experiences into an interweaving series of neural patterns stretching throughout the wild yet ordered jungle of neuroelectrical architecture that is the brain. The prevalence of these simple linguistic constructions in the very composition of our common speech is, for the Churchlands, a source of considerable deception about the true nature of thinking. That there are such existent things as thoughts, as run the posits of folk psychology, is an elaborate lie, built up for the sake of simple communication and ignorance of the inner workings of the organism.

The Churchlands describe folk psychology as a systematized way of considering the standard mode of human communication – language. Here is what the Churchlands take folk psychology to be. If we take every word of colloquial language to be a direct ontological posit – a statement that every word in a sentence refers either directly or indirectly to some existing thing – then we have in every language a system of predicting and explaining the actions of speaking organisms and the dynamics of their motivating factors. They instead see the true nature of intelligent life as laid before us in the study of neurology. This is why the "Eliminative Materialism" essay ends with images that are the trappings of Philip K. Dick rather than Gottlob Frege – people learning to speak languages with words composed of mathematical representations of neural vector coding, or being implanted with direct brain-to-brain transceivers converting neuroelectrical signals into electromagnetic wave patterns and back again just as cellular phones do with sounds. For the Churchlands, talk of mentality is useless if it refers to that which does not

exist. Since the central nouns of folk psychology do not refer to physically existing things, these words are useless and should be removed from all human discourse.²⁷

Jaegwon Kim centres his work in a far different context, but parallels the Churchlands in his reductionist account of mind. Kim focusses on how the language that we use is not necessarily always an already-systematized predictive / explanatory system, but a means of understanding a world. Kim situates functional understanding of phenomena at a particular point along a continuum of progress from general ignorance to comprehensive understanding of phenomena. Mind is a central area in our science of understanding humanity where much progress along this continuum has yet to be made. The functional account of mind sees the language of mental entities – talk of beliefs, desires, and so on – as essential to our understanding of human action. These concepts are terms in colloquial language to understand the roles of the organism's activity. Kim says our functional understanding of the language of the mental makes no posits regarding the singular physical existence of anything of which it speaks. The purpose of functional understanding is to lay out the roles that the various entities enact. We can think of these roles, he says, as the causal structure of events – the connections between events in space and time, and the regularities of relations between the events described. Kim is here discussing events in general, which would include those events that are the actions of organisms. What he calls physical understanding is the understanding of what exactly these events are and what entities exist that constitute the events – the occupants of the roles. The physical account does not replace the functional, or render it redundant, or childish, or silly. Both accounts are equally valid in their proper contexts. The functional account describes a process in its relations to other processes and things, and in the inner relations of its composite processes and things. The physical account describes in great detail the physical substrates of those causal processes. The functional account is of what happens in terms of what roles the things involved play in relation to each other. The physical account is of what those things actually are. Physical understanding completes the

²⁷ Churchland, Paul M. "Eliminative Materialism and the Propositional Attitudes." Pp. 397-9.

theoretical picture of which the functional understanding was the general sketch. Kim describes functional as describing the broad details of the world, while we would take the physical in the context of Kim's work as a description so wide-ranging and accurate as to be microscopic and cosmological in scope. I will illustrate this difference by Kim's own examples.

Kim uses examples from the history of science to illustrate this point, which clarifies how he uses one of the most controversial words in the philosophy of mind – reduction. Kim's concept of reduction is an engagement with the question "Can we physically reduce minds? Is mentality reducible in physical terms?"²⁸ To reduce minds would be to complement our functional understanding of mind with a physical understanding of mind? The very phrasing of this question itself shows the presence of the conceptual divide we saw so clearly in the work of David Chalmers, of the inability to reconcile the experience of life – the act of living itself – with the scientific account of life – what we know of what life is. Kim casts this question as a relation between our different ways of scientific knowing: the functional explanation, and what Kim terms the physical explanation or as I term it the explanation of what is really going on. We see his understanding of functionalism in the example of how genetic science has progressed over the prior 150 years. The development of genetics began as a study of heredity conducted by a monk named Gregor Mendel in his garden. Identifying the features of his pea plants that he could tell were inherited from the parent plants, he referred to these characteristics as 'genetic' factors. Mendel invented the term to refer simply to those features that were passed from parent organisms to children.

Genetic factors were to be whatever mechanisms or processes in organisms were causally responsible for the transmission of heritable characteristics. In short, the concept of a gene is defined in terms of a causal function, or causal role – in terms, that is, of the causal task that must be performed by whatever it is that is to qualify as a gene. As we will say, the concept of a gene is a 'functional' concept, and the property of being a gene is a

²⁸ Kim, Jaegwon. *Physicalism, Or Something Near Enough*. Pg. 161.

functional property defined by a 'job description.'²⁹

When we are dealing with a concept that is defined solely in this functional manner, the structure of our own understanding of the concept itself constrains how that concept is treated. In this early stage of genetic science that Kim describes, one could ask the question, 'What is a gene?' And the answer would be, 'That which transmits heritable characteristics from parent to child.' Before we know what a gene is beyond this description of its role in the activity of parent-child inheritance, we remain puzzled as to further questions of what a gene really is in a physical sense. We must still work out what physically exists that carries out these activities. The object is in functional understanding defined solely by its activity, while that which does the activity is itself still invisible to us; so we only know of its function, not its physical composition. Before the discovery and analysis of the DNA molecule, we could imagine heredity as carried out by any of a number of biological entities, or even several biological entities coming together to act in some systemic tandem.³⁰ However, we are now aware of the precise things which are responsible for heredity in organisms – DNA molecules existing in the cellular structure. Our knowledge of the process of organism heredity has changed from the functional to the physical. Where we once only knew of a series of actions, we now know the precise things in the world that carry out these actions. This is a transition of understanding from the functional to the physical, and it is a profound shift.

What has shifted is not the process itself, but our own understanding of that process. Inheritance had taken place long before there were organisms who were capable of understanding it, and their explanations grew more detailed, making the transition from having a functional character to a physical character – from describing activities to describing the things that carry out

²⁹ Kim, Jaegwon. *Physicalism, Or Something Near Enough*. Pg. 163.

³⁰ Thompson, Evan. *Mind In Life: Biology, Phenomenology, and the Sciences of the Mind*. Pg. 187-94. Harvard University Press. (2007) Recent studies indicate that this may be the case, as new research indicates that the DNA molecule does not act alone to implement inherited traits in an organism, but in tandem with a variety of biological entities and processes. In addition, the traditional conception of an organism's genome as functioning in a manner of one gene corresponding to one trait is now thoroughly discredited in mainstream biology.

those activities. Common to all accounts of the world is that events and relations which occur with regularity are organized into a systematic series of interrelated patterns. The fact of the matter is that which is the case, and one can say our account of the world is more successful as it approaches that which is the case – because one builds an account of the world with the purpose of figuring out what is really going on. An account of the world is a perspective on the world, but a perspective that is articulated in the context of a community of accounts and account-givers. The process of giving an account of the world is premised on the formulator of that account intending the account she is given to be as accurate as she is able to make it. This is why a physical explanation, according to Kim, would be an improvement on a explanation of some element of the world that was functional only.

Kim understands reduction not as eliminating some facet of our knowledge because it is redundant. Instead, the movement of 'reduction' that he describes expands and augments our knowledge. Kim does not intend to say that all psychology will eventually revolve only around physical explanations of thinking, which on the Churchlands' account are neurological explanations. To say that physical knowledge improves our account is to say that it augments and widens our understanding of the process of thinking. The case Kim builds here is not to invalidate the functional with the physical – that is eliminativism, the extreme of reduction. Kim's analysis understands the relation of the functional and the physical as complements to each other. Just as the scientific investigations of the 1950s and 60s into molecular genetics and DNA served as the beginning of the physical account of the process of heredity, the contemporary neurological investigations are beginning a physical account of the activity of thinking and perceiving.

Kim's aim is just as the title of his book states, to build a philosophy of the mind that is a physicalism, or at least close enough to physicalism as one can get. This goal is a clear result of Kim's concept of what it is to give an account, to articulate an explanation. The best accounts are those that can encapsulate the whole of the phenomenon that interests us, not just one part of it

– the fully comprehensive explanation. Functional accounts of a particular phenomenon are useful in certain contexts, or when the physical composition of the interesting phenomenon remains unknown. But Kim ultimately takes these causal accounts to be too vague, and for the context of science, he takes the better explanation to be the physical one, because he says scientific inquiry looks for the most comprehensive explanation. And the functional explanation is the explanation of the role alone, when a complete account of the phenomenon in question is of the role *and* the occupant. The occupant Kim says is physical, but the concept of physical is, in Kim’s account, that which is potentially explicable. A central tenet of his physicalism is that all which exists is physical, and all that is physical is explicable. Yet there is one element of his account of mind in *Physicalism* that remains a puzzle for him – the question of qualia.

Even so, he remains optimistic about the investigation into the nature of consciousness, laying out his own investigation in opposition to the pessimistic “mysterians”³¹ about the problematic of what exactly the mind is. Nor is his concept of reduction eliminative. The causal concepts and so-called folk psychological terms are not to be deemed irrelevant and eliminated, as Paul Churchland advocated at the end of his manifesto. Yet the precise aspect of mind that Kim cannot account for in his physicalism is the matter of the qualia of experience. He ultimately concludes that the qualia of experience are irreducible to any physical correlate, considering qualia an ineffable aspect of experiential life. Kim says there is no way a physicalist can account for qualia.³² He approaches the qualia problematic in terms of what he calls an “engineering project.” Presumably, once one has a comprehensive physical understanding of a system, says Kim, then one would at least know how to build one of your own – providing economic and logistical concerns were not an issue. The project is to build a machine that

responds to punctures and abrasions to its own skin (‘tissue damage’) by taking evasive

³¹ Searle, John. *Mind: A Brief Introduction*. Pp. 102-3. Oxford University Press. (2004) Kim describes and Searle names a group of philosophers of mind who consider understanding the nature of consciousness to be too difficult a task for humans possibly to succeed.

³² Kim, Jaegwon. *Physicalism, Or Something Near Enough*. Pg. 170.

manoevers to separate itself from the source of the damage ('escape behaviour'); in addition, we are told to make this device experience pain when it suffers damage to its skin. That is, we are asked to design into the machine a 'pain box' which, in addition to its causal work of triggering an appropriate motor response when it suffers damage, gives rise to a pain experience. We can, I am sure, easily design into a machine a device that will serve as a causal intermediary between the physical input and the behaviour output, but making it experience pain is a totally different affair. I don't think we even know where to begin.³³

The functions that the organism carries out through its experience are not a problem, as they are easily encapsulated in the scientific understanding of the human organism that enables us to build a pain machine, a reading machine, a talking machine, a face recognizing machine, an emotion recognizing machine,³⁴ and all other kinds of machines that can do just what we organisms do. The machine illustrates the role that a thing carries out in the life of an organism, and qualia serve no such role for the machine – so qualia serve no functional role in a life. Pain is a qualitative aspect of conscious experience, so is irreducible to a functional role.

At the very end of *Physicalism*, he writes,

Suppose that we have already acknowledged that a given perceiver can experience a range of qualia. When we present to her a ripe tomato, we may not know, and may not care, what the intrinsic quality other visual experience is – what colour quale he [sic] is experiencing. Similarly, when we present to her a bunch of spinach leaves, we may not know what quale characterizes her visual experience. However, we can tell whether her colour quale of the tomato is the same as, or different from, her colour quale of the spinach leaves . . . Colour-inverted persons, as long as they have the capacity to make the same colour discriminations, should do as well as we do in learning about the world and coping with it. Intrinsic qualities of qualia are not functionalizable and therefore are irreducible, and hence causally impotent.³⁵

³³ Kim, Jaegwon. *Physicalism, Or Something Near Enough*. Pg. 168.

³⁴ Churchland, Paul. *The Engine of Reason, the Seat of the Soul*. MIT Press. (1995) NETalk the talking machine, Pp. 84-91; the face recognizing machine, Pp. 38-42; and its variation, EMPATH, the face recognizing machine that can detect what emotions the face displays, Pp. 125-7. If your word processor has a 'find' function, it is a reading machine.

³⁵ Kim, Jaegwon. *Physicalism, Or Something Near Enough*. Pp. 172-3.

The problem Kim explains here is that qualia themselves play no function in the life of the organism – only the ability to distinguish one colour from another. He calls this apparently irreducible feature of the human organism ‘mental residue,’ as he considers it impossible to account for the specificity of experiential qualia in the functions of an organism. Yet he refers to this ‘mental residue’ of qualia as if qualia were supposed to be physical things, where the inquiry of this thesis has built an account of qualia as neuroelectrical activities, not physical things.

Even though Kim set out to build a physicalist account of human thinking and the mind, he must instead settle for an account that is near enough to physicalism, as he titled his book, because he cannot think of a physicalist account of qualia.³⁶ However, Kim is a clear example of a physicalist working in the analytic tradition of philosophy of mind who, while using the word ‘reduction,’ is far from a reductionist as I defined at the beginning of this thesis. His continuum of functional and physical explanations is a way of understanding how we build systems of knowledge that encompasses both causal roles and physical occupants of those roles as being valid. An understanding of both is mutually enlightening. We can accept with Patricia and Paul Churchland that the aspects of human life that we typically associate with the mind are activities of the human physical neural apparatus. But our talk of mentality still maintains relevance in the functionalist sense. Kim’s problem with qualia is not that he is unable, like an eliminativist, to make qualia disappear. His problem is that he cannot find a way to augment his understanding of qualia beyond the functional, so remains puzzled. Kim’s reductionism manifests itself in his desire to bring qualia beyond the functional in this sense. He could not do so in his own system, but the Churchlands did. So we now have before us two philosophies of mind. The Churchlands are eliminative, but can account for qualia; Kim is not eliminative, but qualia mystify him.

³⁶ Kim, Jaegwon. *Physicalism, Or Something Near Enough*. Pp. 168-73.

3. *The Pattern of Patterns*

One general problem of physicalism is how mind can arise from mindlessness. This may seem a distraction from the discussion of functionalism, but its relevance will become clear. One commonly used analogy to answer this challenge is to say that the mind is like a car. All the various bits of metal, plastic, glass, and fabric strewn about in pieces is not a functioning car – we would say that it is a pile of junk. And that is the condition of a great deal of matter, strewn about in chaotic fashion, not suited to carry out any action on its own. But all this matter can be arranged and assembled in a very complex fashion such that a functioning car has been built. There is nothing inherent in the metal itself that creates controlled explosions of gasoline, and carries out all the other actions typical of a functioning car. The matter that was used to build the car could just as easily have been used to build something completely different, or nothing at all. It is this very particular and complicated arrangement of these particular sorts of matter such that certain processes are carried out, which constitutes a functioning car. And in parallel fashion, it is this very particular and complicated arrangement of certain sorts of matter such that certain processes other than those of the car are carried out, which constitutes a living organism. However, a car may be central to the analogy, but no one has ever said a car was the same as a mind.³⁷ A car is not a mind, or an organism, but the key element of the car analogy for my investigation is the concept that a certain arrangement of physical things can facilitate the activities of perceiving, thinking, and the other relevant activities we typically associate with the mind. A brief analysis of David Lewis' account of the mind as a supervenient property will give us a further conceptual foundation to understand exactly how mind may appear from the mindless.

Lewis has his own analogy for the nature of the mind that is much simpler than the example of the properly assembled car, has fewer implications of the necessity for an intelligent designer like the Christian God, and requires virtually no knowledge of automotive science to construct. It is an image of thought essential to understanding the physicalist concept of mind we

³⁷ Except in fictional stories, David Hasselhoff's car KITT from *Night Rider* being one example.

hope to establish – the image of mind as a pattern.

Imagine a grid of a million tiny spots – pixels – each of which can be made light or dark. When some are light and some are dark, they form a picture, replete with interesting intrinsic gestalt properties. . . . The picture and the properties reduce to the arrangement of light and dark pixels. They are nothing over and above the pixels. They could go unmentioned in an inventory of what there is without thereby rendering that inventory incomplete.³⁸

He describes an arrangement of dots varying in size and colour which, viewed without any special magnification, compose a picture. But the picture can be described using a table of what kind of dot exists at each physical location on the area of interest. To describe the picture itself, it is not necessary to describe the physical state of the materials of the picture. What is physically present is only the pixels themselves, but it is the arrangement of the pixels that constitutes the picture. The picture is the totality of the pixels in their arrangement – as such, we can say that the picture supervenes on the pixels. The picture is present insofar as it is present to the organism, because it is only in the interpretation of the pattern of pixels that the picture itself is seen. The pattern of pixels, says Lewis, exists as a picture insofar as one *perceives* the pattern as a picture.

Similarly as the picture supervenes on the pixels, says Lewis, the mind supervenes on the body and its actions. But supervenience is not the concept I want to say is most important in our understanding of mind. Nor is the concept of a pattern that has to be interpreted from a physical arrangement by another interpreter. The term supervenience implies that mind consists in properties that, while dependent on the physical activities of the organism's sensorimotor system, remain somehow different from those activities. The latter concept, the most direct interpretation of Lewis' image of the pattern, leads to an infinite regress of interpreters – a mind pattern is only present when it is observed by some other mind, which is also a pattern. Neither of these interpretations are what I want to take from Lewis' image of the pattern. What we call the mind

³⁸ Lewis, David. "Reduction of Mind." *Papers in Metaphysics and Epistemology*. Pg. 294. Cambridge University Press. (1999 Orig. 1994)

is the pattern that we interpret from the activities of the organism as a whole, specifically considering the role in these activities of the organism's neural system.

This account is strikingly similar to how the mind is treated in the context of neurophilosophy, and the Churchlands even refer to particular thoughts as being in fact patterns of neuroelectrical activity. Lewis' supervenience account understands the mind as a meaningful pattern of activity whose meaning is only visible to us as its activity unfolds before us. For Lewis, mind is a pattern that is only perceivable as an organism living and behaving in the world – what we typically think of as mind is the pattern we interpret from the manifold of the activities of life. If we doubt that a thing thinks and perceives, we judge by an analysis of how that thing acts – whether it exhibits a pattern of activity in the world associated with those things which we know think. This is how one would satisfy one's skepticism that a given organism is probably thinking. The behavioural activities of an organism – its particular activities in the world – constitute the thinking of that organism just as much as the neuroelectrical activity. This was mentioned in my earlier³⁹ account of Patricia Churchland's treatment of the organism seeing a plum and grabbing it off the tree.

Not only that, but the Churchlands' account of the neuroelectrical activity that is part of the activity of perception and motion allows us to understand activity associated with mind as more than just behaviour observable to others. The behavioural activity which, for Lewis, displays mind is also – and essentially – neural activity that is physically inside the organism in question. Mind is no separate thing over and above our activities of perceiving and moving, but is our activity itself considered in the totality of that activity. The act of interpretation itself is one of those activities of an organism that we think of as being proper to mind. Thinking itself – mental action – is a matter of patterns of activity, and we can see this in the neurophilosophical account as well. Single units of neuroelectrical activity, each with a single vector mathematical value, constitute in their totality a complete, multilayered, hyperdimensionally interpreted pattern that

³⁹ In Chapter One, §2.

is the network of all neural networks in an organism. This is what we colloquially call 'mind.'

If mind is constituted in the activities of perception and motion, then one cannot consider mind as wholly inner or wholly outer – in the physicalist context, neither a strong privilege to the neurological dimension or a strong behaviourism. The patterns of neural activity are created in the brain of an organism based on the interaction of the organism with and in its world, continually shifting with the activity of worldly perception and perception of the organism's own body. The network of all neural networks in an organism is itself capable of generating new networks – the pattern of patterns that is itself a pattern-maker. Action in the world requires that the organism be aware of itself – that is, aware of its own body. One's body is a physical object, so awareness of one's body is awareness of one's physical existence. As such, the organism understands its physical presence in the world. Action in the world also requires that the organism be aware of its surroundings and its place in them. This awareness of the surrounding world is understanding the perceptions of the organism as present to the organism. This is how the concepts of physical presence and presence to the organism that we discussed in the previous chapter relate to the concept of the human person as the self-patterning pattern.

But what exactly is the organism aware of in its awareness of its body and world, its body as a constituent of the world, aware of itself as a physically co-present constituent of the world? Self-awareness leaves us with the old problem that David Hume put forth in the 1700s, and that we find in the Buddhist concept of self-reflection, according to Francisco Varela. When we look introspectively, there are thoughts, memories, experiences, and all the fleeting presentations of the process of thinking – but one can find no self that thinks, no impassive cogito of bastardized Cartesian imagery. Hume in Europe and the Buddhist scholarly tradition in Asia are the major historical articulators of this problem.⁴⁰ Scouring the theatre of our mind for its director is not the proper way to discover what this self is of which we speak when we talk of self-awareness. Such an

⁴⁰ Varela, Francisco J.; Evan Thompson; Eleanor Rosch. *The Embodied Mind: Cognitive Science and Human Experience*. Pp. 59-81. MIT Press. (1991)

image has implications for the introspective hunt for a mini-me at which Patricia Churchland pokes fun when skewering the simplistic images of non-neurological psychology.⁴¹ Lewis' image of the pattern has a great many parallels with the neurophilosophical account of what we typically call mind, insofar as the identity of the organism and all the actions we traditionally associate with the concept of mind are the result of the cumulative simultaneous action of a multitude of individual neurons which are neuroelectrically active at certain levels. The self is found not through an introspective search for one particular object. If we take the typically reflective path of ploughing through memory and examining actions, we only find memories and actions, but no central coordinating figure called 'self.' If we take the neurophilosophical path, we will find patterns of energy in neural systems, coordinated throughout the brain – however we will find no special coordinator, but the system of systems, the pattern of all patterns. This pattern of patterns itself constitutes the unity of consciousness; it is a unity in activity.

One sticking point remains with this concept of the mind as pattern of patterns before we move on. We earlier said – in reference to Lewis' supervenience analogy of the picture constituted from an arrangement of pixels – that what is physically present – in Lewis' words, what is there for the inventory of what is present – are the pixels themselves. The picture itself is only present insofar as it is seen by a perceiver, since it is a function of the pixels' arrangement. Does this stand also regarding the mind and the neural activity of the brain? That is, is the mind not *really* there, but merely a function of the arrangement of neuroelectrical activity? The Churchlands would say this is the case, as the stance of eliminativism is that what is not physically present does not exist, and that its apparent existence is illusory. Lewis' precise formulation of the concept lends itself to this problem. The mind is not exactly the same as an arrangement of pixels which forms a picture, and the mind is not exactly the same as an arrangement of metal and

⁴¹ Churchland, Patricia. *Brain-Wise: Studies in Neurophilosophy*. Pg. 71. MIT Press. (2002) It is worth noting that *Brain-Wise* was published after the 1999 release of the film *Austin Powers: The Spy Who Shagged Me*, featuring Verne Troyer as the three-foot clone of the villain Dr. Evil, to whom the latter referred as 'Mini-Me.'

plastic which forms a car. The image is useful to us because it is the image of the mind as a pattern, and our understanding of the formation of neuroelectrical patterns which constitute particular beliefs, thoughts, desires, and so on is captured by Lewis' image. The concept of the pattern as Lewis articulates it goes as follows: the image can be a pattern constituted through the activities of things which themselves are completely different from the pattern in question. Particular activities of particular things may constitute patterns that had never before existed. The pattern may not be a single thing, but exists as it is constituted by the activities of many things. Considered only in a singular sense, a neuroelectrical signal is just that and nothing more. But because that neuroelectrical signal is one signal among many and organized in a complex physical sensorimotor system of an organism perceiving and moving in a world, it is one component element of a pattern of activity which constitutes an individual mind. No director-figure is needed over and above the activity itself, as the activity organizes itself in a pattern that constitutes the mind perceiving, moving, and acting in the world. The pattern is itself constituted in activity, and this is not just neuroelectrical activity, but also the activity of an organism's worldly behaviour. That is, in constituting the mind, the pattern constitutes the living organism itself.

III. Bodily Life, A Life

The central concept of this thesis is that the mind of an individual is constituted in the activities of perception and motion. This chapter will aim at deepening the understanding of this constitutive activity of perceiving itself, specifically how the activity of perception affects the relationship of the individual to its surroundings. In the language of Maurice Merleau-Ponty, we could also describe this as the relationship of the individual to its world. The most important textual sources for this inquiry will be Merleau-Ponty's *Phenomenology of Perception*, and Evan Thompson's *Mind in Life*. The latter is Thompson's summary of many years of his own work, much of which was in collaboration with Francisco Varela. Thompson and Varela considered their work to be an extension of Merleau-Ponty's, and much of *Mind in Life* is spent examining Merleau-Ponty's own concepts, along with how those concepts apply to Thompson's own thinking on the nature of the organism.

The first section of this chapter situates Merleau-Ponty and the phenomenological tradition of which he was a leading figure in the context of my current inquiry, particularly the debate over the relative validity of subjective and objective perspectives. It is a central point of Merleau-Ponty's thinking that one should not eliminate subjectivity or objectivity from philosophy, but that one should understand how a perspective is constituted. The second section examines Merleau-Ponty's account of that constitution, focussing on his concept of 'bodily life,' his term for how the activities of perception and motion of a body in the world constitute the thoughts, personality, identity, and surroundings of an individual. Working in an entirely different philosophical tradition several decades before Lewis, Kim, or the Churchlands, Merleau-Ponty came to a similar understanding of constitutive activity that I identified as present in these works of philosophy of mind. The Churchlands focussed on how perceiving activity constitutes mind as brain activity. Merleau-Ponty's work allows us to understand that constitutive activity as the constitution of the world as it is present to the organism, the world of an individual

organism's action. Yet Merleau-Ponty's description of the constitutive activity of perception is neutral on the question of substance – that is, physicalism vs dualism. So it is possible to interpret his phenomenological approach as representationalist if one understands Merleau-Ponty as saying that perception constitutes an inner world of mind and thought in contrast to the mindless outer world. This, however, is not the interpretation I will offer of Merleau-Ponty's work, as I understand him as describing an individual's activity of perception in that individual's life in the physical world. The third section of this chapter will use Thompson and Varela's analysis to examine the ramifications of the concept of mind constituted through the activity of perception articulated as a physicalism. These ramifications include new possibilities for the understanding of how mind is articulated in organic life in general.

1. The Scientific Approach to Life – Escaping Situatedness

Patricia and Paul Churchland's neurophilosophical project attempted to understand how it is physically possible that one forms what they deemed to be the illusions of subjectivity – how one comes to the conclusion that beliefs etc. exist as things, when there is physically present only the neural activity of believing etc.⁴² But organisms perceive and move in the world in such a way as to constitute through this perceptual and motive activity a subjective perspective. The goal of phenomenological philosophy as I shall examine here is not to elucidate further the view of the world as an impassive topography or to enumerate the inventory of the world. It is to understand the interdependence of the personal perspective and the world in which it lives. The perspective of the individual does not detach itself completely from the world, as in what we earlier described as pure objectivity. Nor does the individual perspective distort what should be the correct vision of

⁴² All thinking is neuroelectrical activity, but the Churchlands take this statement reductively – that what we have always considered thinking is *really* neuroelectrical activity, so we should speak only of such activity and not use the term 'thinking.' I take this concept as meaning that to take thinking as neuroelectrical activity is to broaden one's general understanding of what the activity of thinking is. A description of the neuroelectrical activity in question describes the activity of thinking without making the leap to say that thinking itself is an illusion. I have always thought, and continue to think – now I better understand what thinking physically is.

the world by its very action in that world, which was the heart of the Churchlands' hostility to subjectivity. The individual – perspective included – is itself a part of the world that is constituted in its living experience. It is important to notice here the similarity of this concept articulated in this understanding of phenomenological philosophy to the concept we developed in the previous chapter of the mind as a self-constituting pattern of activity of an organism. We saw this concept of the self-patterning pattern as the structure of the mind in the context of our analysis of Kim and Lewis. And we saw this concept in the structure of the brain when applied to the Churchlands. We will see it as the structure of the individual in Merleau-Ponty's philosophy. And as we consider Thompson's philosophy, we will understand this self-constituting activity as the structure of a mind articulated in the activity of living.

The perspective that Merleau-Ponty's philosophy – his philosophy of phenomenology – affords us on our central concept of the self-constituting pattern of activity is to elucidate this through the analysis of the individual's engagement with the world, analysing how the individual is situated. Phenomenological philosophy does not offer us a polar opposite to the absolute privilege that the Churchlands grant to the perspective of pure objectivity. Phenomenology does not privilege pure subjectivity as the only means of accessing what is real without distortion, as some have accused Husserl's philosophy and works inspired by it.⁴³ Merleau-Ponty is clear that phenomenology grants no such privilege to pure subjectivity in his preface to *The Phenomenology of Perception*. The philosophy of phenomenology is one's understanding that:

I cannot conceive of myself as *nothing but* a bit of the world, a *mere* object of biological, psychological or sociological investigation. I cannot shut myself up in the realm of science. All my knowledge of the world, even my scientific knowledge, is gained from my own particular point of view, or from some experience of the world without which the symbols of science would be meaningless . . . Scientific points of view, according to which

⁴³ Flynn, Bernard. "Maurice Merleau-Ponty." *The Stanford Encyclopedia of Philosophy*. Edward N. Zalta, ed. (Summer 2004) <<http://plato.stanford.edu/archives/sum2004/entries/merleau-ponty/>> The article notes Husserl's influence on Merleau-Ponty, and mentions that there is a prevalent interpretation in the scholarly literature that Husserl's phenomenological reduction is a means of accessing absolute truth through pure subjectivity.

my existence is a moment of the world's, are always both naive and at the same time dishonest, because they take for granted, without explicitly mentioning, it, the other point of view, namely that of consciousness, through which from the outset a world forms itself round me and begins to exist for me.⁴⁴

Compare the above quotation with the character of the neurophilosophical description of humanity the Churchlands put forward. Merleau-Ponty does not deny the validity of the scientific description of humanity – the scientific in this context being the view from the purely objective perspective, as we have characterized it earlier. He instead says that the purely objective perspective cannot encompass all the possibilities of an individual's activity. Pure objectivity is one perspective among many possible ones, as can be situated along the continuum of objectivity and subjectivity discussed in chapter two. All possible perspectives along this continuum present us with the world in different ways.

Merleau-Ponty's own philosophical investigation begins with the problem of how one finds oneself in the world, investigating the how the individual constitutes its existence through its own activity. He places this as first in his investigation, as he says above, because the existence of any individuals at all is the condition for the possibility of the existence of any perspectives at all. That which is valid from an impassive viewpoint constitutes the conceptual boundary of the objective perspective. To understand the world from such an objective perspective would be to take inventory of that which is physically present. The boundary of the subjective perspective can – broadly speaking – be constituted by that which is valid as it is present to the organism or present to the individual. But any perspective is constituted by an individual's act of understanding the world of which it is a part. Whether my perspective approaches pure subjectivity, or pure objectivity, or some complex blend of the two general orientations, it is always my perspective – my point of view of the world through which and as which I live in the world and make sense of the world. Neither a purely subjective nor a purely objective mode of

⁴⁴ Merleau-Ponty, Maurice. *The Phenomenology of Perception*. Pg. ix. Colin Smith, trans. Routledge Press. (1962. Orig. 1945) Italics mine.

understanding the world should be allowed to dominate one's understanding to the exclusion of all other perspectives as being valid. Perspective varies in many complex ways, such that pure examples of subjectivity or objectivity can rarely – if ever – be achieved.⁴⁵ The rest of this thesis will deal with how Merleau-Ponty's engagement with the constitutive activity of the individual can be used to deepen the understanding of the concept of mind as activity as it exists in the context of analytic philosophy. In *The Phenomenology of Perception* Merleau-Ponty explicitly explores the concept of activity which constitutes a pattern.

2. *The Individual Living in the World*

How can Merleau-Ponty's philosophy be compatible with physicalism? Throughout *The Phenomenology of Perception*, he makes no mention of substance. It is an examination of what it is to perceive, and the conditions that a thing would have to satisfy to be a perceiving individual. He examines the activity of perceiving. Although he works in a different philosophical tradition, Merleau-Ponty's phenomenological investigation and the philosophies of the analytic tradition I examined earlier find common ground in the concept of the self-constituting pattern of activity. In the analytic context, this pattern of activity constituted mind; and in the phenomenological context, this pattern of activity constituted the individual in the world. I will show that these two concepts – the mind, and the individual in the world – while differing in the philosophical context in which they are articulated, are actually quite similar. In *The Phenomenology of Perception* one finds a description of the activity of perceiving, along with the actions that depend upon perception as a condition for their possibility. These actions constitute the whole of human living, and as such can be considered as the activities of an individual living in the world as a part of the world. Evan Thompson shapes Merleau-Ponty's work into a physicalist context by taking the individual in question in Merleau-Ponty's work to be the human organism. Charting this movement will be the course of the following two sections.

⁴⁵ Nagel, Thomas. *The View From Nowhere*. Pp. 25-7. Oxford University Press. (1986)

To begin, we should establish the difference between knowing the world as only an objective matter of fact, as opposed to knowing the world as a matter of activity constituting a relationship of perceiver and perceived. Edmund Husserl gives this example.

A man born deaf knows that there are sounds, that sounds produce harmonies and that a splendid art depends upon them. But he cannot understand *how* sounds do this, how musical compositions are possible. Such things he cannot *imagine*, i.e. he cannot 'see' and in 'seeing' grasp the 'how' of such things. His knowledge about what exists helps him in no way, and it would be absurd if he were to try to deduce the *how* of music from his knowledge, thinking that thereby he could achieve clarity about the possibility of music through conclusions drawn from things of which he is cognizant . . . 'Seeing' does not lend itself to demonstration or deduction.⁴⁶

The deaf man's knowledge of sounds in this example is an understanding of what sound is. According to Jaegwon Kim's naturalism, we could say the deaf man understands the physical nature of sound. He understands what the air movements and the structure of the aural sensory organ are – what Husserl would here call the 'what' of sound. But he is unable to have any qualitative experience of sound, because the parts of his sensory apparatus that detect sound are non-functional. He understands sound in its abstract sense only, as the vibration of gaseous molecules in an ordered fashion such that those who can detect this vibration can understand their meanings. The deaf man is unable to translate – in the sense of sensorimotor translative perception I described in chapter one – the vibration of gaseous molecules into a pattern of neuroelectrical activity. In other words, he is unable to hear. This would appear to undermine the point I made earlier, regarding regarding the idea that qualia are irreducible. But Kim thought qualia irreducible in that it was impossible to understand qualia as an effect of some more fundamental underlying physical process.⁴⁷ This is the reductionist element of Kim's philosophy I

⁴⁶ Husserl, Edmund. "Lecture Two: The Critique of Cognition." *The Idea of Phenomenology*. Pp. 30-1. The term 'seeing' here we can take to mean 'perceiving' to avoid confusion over multiple meanings of the word 'see.' A blind man can still perceive the road down which he walks through the direct physical contact of the ground with his body – his sense of touch.

⁴⁷ Kim, Jaegwon. *Physicalism, Or Something Near Enough*. Pp. 165-7. Princeton University Press. (2005)

identified in chapter two. But Husserl's deaf man knows what audio qualia are – he understands those parts of the human organism's physical sensorimotor system that detects vibration of air. It is just that his own sensorimotor apparatus cannot itself process audio; he fails to constitute sound qualia.

Husserl in this example points out that perception in experience and the abstract cognition of an object or a type of object are different activities, and one is not reducible to the other. To perceive is to engage in the world of which you are an active part such that what surrounds one is – recalling the framework I explained in chapter one of how to understand the relation of oneself as an individual to what exists – present to the organism. Scientific understanding is to consider the world and your own individual existence as an element in a system of things related to each other in how they are physically present to each other. A thing is physically present in the sense that it exists. A thing is present to the organism in the sense that it exists with that which perceives it, and it is an object to which a perceiving individual may direct its action.

Any thing's action is a thing's alteration of itself, a thing changing its state in the world. As such, action is always directed in a world, and is an engagement with the world. The examination of this idea of engagement is how *The Phenomenology of Perception* fits with the current discussion on the nature of mind as a pattern of activity. Among Merleau-Ponty's goals in this work is elucidating his concept of the lived body – the concept of life as a body that is in a world and part of that world. Merleau-Ponty's concept of bodily life is that a life and a world are inseparable, and that in any context, the individual's understanding of its own body is always and inextricably linked to the individual's understanding of the world in which it lives.⁴⁸ Even the degree to which the world and the body are considered as different ontologically from each other depends on the specific character of the individual's activity at the time. In one context of activity in the world, the individual can act without any sense of self, as in a state of intense

⁴⁸ Dillon, M. C. *Merleau-Ponty's Ontology*. Pp. 130-2. Indiana University Press. (1988)

personal ecstasy or an adrenaline-fuelled state. In another context, the individual feels utterly alienated from the world and entirely self-centred in his thinking, such as when one refuses to accept the validity of any events in the world under the possibility that one's whole experience could be a malicious hallucination.⁴⁹ In a certain context of action, a physical thing that is separate from the boundary of the physical organism can come to be treated as part of one's body, like a blind man's walking cane – the blind man perceives the world as it is laid out spatially before him through this extension of his sense of touch as the cane becomes an extension of his tactile sensory system.

Merleau-Ponty finds another example of the blurring of the body's boundaries of action in driving a car. The best driver does not look at the space between the end of a line of other cars stopped at a red light and the right-turning lane towards which she aims, and then measures carefully that opening compared to the width of the car. Upon seeing the space between the car in front of her and the far right sidewalk, she knows whether or not she can fit – in the activity of driving, says Merleau-Ponty, her own lived body is that of the car, and the space in which it moves is her own bodily space. Through our action, we transform the very character of space itself.⁵⁰ Some qualification is necessary here, and the concepts I first brought up in the first chapter – physical presence and presence to the organism – can help. In terms of physically present things moving around each other, the relations among those things are altered by their movements relative to each other. But moving among things and incorporating things that are not one's physical body into one's bodily movement – such as the driver of the car acting as the car in Merleau-Ponty's example – is activity that constitutes the world as it is present to the organism. Merleau-Ponty calls lived space or bodily space the environment which the individual manipulates by perceiving that environment and moving in it. If the organism in question had not existed, the space which now exists as lived space would exist simply as an inventory of

⁴⁹ If this sounds familiar, an analysis of the Cartesian cogito in the light of Merleau-Ponty's own investigations is the subject of a lengthy and subtle chapter in *The Phenomenology of Perception*.

⁵⁰ Merleau-Ponty, Maurice. *The Phenomenology of Perception*. Pp. 164-7.

things. The presence of an acting individual introduces a dynamism into the world through the activity of the individual. Things existing as present to an organism are the objects of perceptive activity, and this perceptive activity cannot be present without an individual. Likewise, Merleau-Ponty's driver must judge whether the car will fit through the space to turn onto the next street, so is constrained by those very objects in her perception and motion which she constitutes as present to the organism – present to herself. So those things which compose the individual's surroundings constrain the perceptive activity, and so exist as limitations on the movement of the organism.

What Merleau-Ponty's analysis of action in a world shows us is that the individual constitutes the world in tandem with the world constituting the individual – simultaneous co-constitution of body and world. This activity of co-constitution is the activity of perception and motion, the same activity which constitutes mind as well. Yet we must be careful about how we take this concept of bodily life as the co-constitution of body and world in action, especially regarding the character of space and the physical limits of the body in activity. Merleau-Ponty's analysis of the constitution of bodily space in activity has shown us that we can consider the world as it is in perception for the individual to be potentially unified with the body in the body's own activity. The blind person's cane, or the driver's car can be an extension of their body. My clothes are physically separate from my own body considered simply as an organism, yet they are potentially my expression, and a potential part of my body. That is, they are a potential part of my *lived* body, the vehicle of the individual's existence. Every part of the world, insofar as it is a possible element of my action, can be considered as part of my lived body. And, opposite this, we can consider the actions of my individual body as central to the constitution of the world. This is how body and world constitute each other. While objects remain separate in the sense of their physical presence, they can become part of an individual insofar as the individual gives them such significance as she uses them. This activity of creating significance is exactly the constitution of

an individual – thinking, perceiving, believing – that we have taken to constitute mind.

We must be careful not to interpret this co-constitution improperly, such that Merleau-Ponty's analysis becomes embroiled in the problem of collapsing the boundary between body and world. If one does interpret the phenomenology of perception this way, one would be forced to separate conclusively the two perspectives on the world which are the consideration of the world as physical presence and the world as it is present to the organism. One scholar of the relationships between phenomenology and the analytic tradition, Sean Kelly, would define them as 'objective space' and 'egocentric space,' respectively.⁵¹ But this interpretation puts too much of a dualist spin on Merleau-Ponty. The terms arise in Kelly's work in his examination of Merleau-Ponty's analysis of space as those concepts became clear in his treatment of a severely brain-injured man named 'Schneider' whose injury drastically impaired his abilities to move in relation to other objects.⁵² Objective space as Kelly defines it is space as it is mapped in the perspective of pure objectivity – the ideal standpoint of what the Churchlands would say is objective science. Egocentric or bodily space is space as experienced from the perspective of the individual organism, where one's actions affect the character of one's bodily space. However, this strict segregation of space in physical presence and space in presence to the organism will not be the best solution to our problematic here, as this will only create another awkward dualism that would trap us in a position similar to Chalmers' quandary of a functionally comprehensible mind and incomprehensible qualia.

It is Kelly's drastic separation of our characterizations of space that shows that this is precisely how we should not handle the concept of co-constitution. In terms of how any perspective at all is constituted, the dichotomy of subjectivity and objectivity is inadequate to illustrate the interdependence of all perspectives. Merleau-Ponty's concept of bodily life is an

⁵¹ Kelly, Sean D. *The Relevance of Phenomenology to the Philosophy of Language and the Mind*. Pp. 77-83. Robert Nozick, ed. Garland Publishing. (2001)

⁵² Merleau-Ponty, Maurice. *The Phenomenology of Perception*. Pp. 112-70. The chapter called "The Spatiality of One's Own Body and Motility."

understanding of how an individual is constituted via activity in the world. This worldly activity is the activity of perceiving and moving – the activity of a sensorimotor system. The physical neuroelectrical system which the Churchlands take as existing from a purely objective perspective – that is, this neuroelectrical system as physically present – is necessary for the constitution of a particular subjectivity, an individual. The purely objective perspective is constituted by some individual already living in the world, and the process of that constitution is the removal of subjective elements of one's bodily life. Merleau-Ponty's concept of bodily life does illustrate this interdependence because of the concept's focus on the constitutive activity of the individual in the world.

Accepting Merleau-Ponty's analysis of perspective as living in the world defuses the possibility of picking up eliminativism's hostility towards the perspective of being situated in the world. We cannot help but engage with the world, because any refusal to engage that supposedly defines the purely objective perspective is itself an engagement.⁵³ The purely objective perspective abstracts one's situation in the world from any immersion in the world. Yet this abstraction is itself a mode of engaging with the world – the engagement of abstracting, holding oneself back from active engagement. One who seeks to stand at the purely objective perspective seeks to stand oriented to the world as an impassive watcher. One cannot help but orient oneself to the world, says Merleau-Ponty, and as such:

All consciousness is, in some measure, perceptual consciousness. If it were possible to lay bare and unfold all the presuppositions in what I call my reason or my ideas at each moment, we should always find experiences which have not been made explicit, large-scale contributions from past and present, a whole 'sedimentary history' which is not only relevant to the *genesis* of my thought, but which determines its *significance*. For an absolute evidence, free from any presupposition, to be possible . . . It would be necessary, in other words, that instead of being myself, I should become purely and simply one who knows myself, and that the world should have ceased to exist around me in order to

⁵³ Merleau-Ponty, Maurice. *The Phenomenology of Perception*. Pp. 418-22.

become purely and simply an object before me.⁵⁴

Merleau-Ponty here writes on the conditions for the possibility of any perspective at all. The perspective of pure objectivity, as the eliminativists have considered it, is one unattached to any particular individual in the world; because even though the purely objective perspective is developed by people who live in the world, the perspective of pure objectivity is divorced from all timeliness. Events in time – even the events of the development of the perspective of pure objectivity itself – are a matter of the inventory of what is, was, and will be physically present. He points out that for an individual to be able to take this inventory, that individual must develop the perspective of objectivity through living in the world. The perspectives of objective science or the arbitrator attempting a compromise of multiple opposing political viewpoints would be examples. None of these match the ideal of pure objectivity that the Churchlands seek for their own eliminativist points of view. Each of these more colloquial objectivities are developed in the process of an active engagement with the world. The Churchlands put forward as a non-engagement their concept of pure objectivity, but no individual can achieve this perspective of pure objectivity.

Every account of the world and of life in the world is built into an engagement in the world. This engagement is the constitutive activity of the sensorimotor apparatus – the activities of perceiving and moving. The activity of this engagement constitutes a mind if one considers only what goes on inside the organism, and a life if one considers the activities of perceiving and moving as the activities of an organism in the world. What Merleau-Ponty calls the presuppositions of any individual act of engagement in the world, we can call – in the context of this investigation – one constitutive element of the pattern that is the individual mind. Any perspective – including the supposedly purified perspective that is the Churchlands' picture of scientific cognition – is shaped by the presuppositions that are required for the conceptual coherence, or rather comprehensibility, of any particular act. In every act of explicitly describing

⁵⁴Merleau-Ponty, Maurice. *The Phenomenology of Perception*. Pp. 459-60.

some state of affairs – such as the neuroelectrical activity encoding some sensed event – there is a background of presuppositions and conditions for the described event which all go to form, to use the phenomenological parlance, the horizon of that event. That horizon – the context in which the event itself and the description of the event is meaningful – is what Merleau-Ponty here calls the “sedimentary history” of that event, the existence of which is a condition for the event coming to be and for our accurate description of that event. Merleau-Ponty says, “I can ‘bracket’ my opinions or the beliefs I have acquired, but, whatever I think or decide, it is always against the background of what I have previously believed or done.”⁵⁵ No matter how much one may try to abstract from one’s own situation in the world, all articulations of understanding are made within the pattern of activity constituted by one’s own actions in the context of that situation. This overall pattern of activity constitutes the life of the individual.

Of course, one’s description of an event will vary with one’s perspective. A change in perspective means a change in how one understands the event in question. Similarly, this constitutes a change in how one understands one’s own act of perceiving. Let us return to our earlier example of the stick pressing against the fingertip. Our translative account of perception understands this physical sensorimotor activity as the pressure, shape, and texture of the stick themselves being encoded as the event itself translated into the neural system. Perception as translation presupposes that the organism engages the world, and is itself an element of the world. The neural encoding of perception translates an event that occurs outside the boundary of the organism, but that event is within the boundary of its life in the world, and a possible target for its directed action. The translative account finds a parallel in Merleau-Ponty’s own examination of the individual’s process of perception. He describes the physical relationship of an individual body with a thing such that the individual’s own actions are themselves intertwined with the thing that is the focus of that action. In physical engagement with a thing, the thing is a constituent of the lived world of the individual. The significance of a thing for the individual is

⁵⁵ Merleau-Ponty, Maurice. *The Phenomenology of Perception*. Pg. 460.

the role that the thing plays in the individual's lived world. That role is articulated in how the individual relates to the thing itself.⁵⁶ The relation is between an existing thing and an existing individual, two things physically present at the same time. In the interaction between these two things – as the individual engages with the thing – there arises the thing as it is present to the organism. This is a new significance that is not valid for the inventory of the purely objective perspective that accounts only for that which is physically present. The activity of translative encoding is the interpretation of neural sensorimotor activity that best articulates the organism's direct action in the world in which it is present, and of which it is an element.

We have seen from our first articulation of the concept of translative perception in chapter one that the physical apparatus of perception can be understood as the physical transformation of an event into a pattern of neuroelectrical activity. And we have seen from the above articulation of the concept of engagement that the act of a life in the world transforms the world through its action into a new mode of significance that had never been so before. This neuroelectrical pattern is the physical manifestation of the significance created by the perceiving that is an organism's active engagement with the world in which it lives – an engagement with an event transforms that event in terms of bestowing on it an additional significance that it would not have had if it had taken place unperceived by an organism. The body-world relationship of mutual co-constitution earlier articulated is only problematic if we interpret this mutual co-constitution in either of two ways, which I will not pursue. One can understand the body-world relationship as an absolute privileging of pure subjectivity, which would define the world as wholly embodied in the acting life. And one can also understand the body-world relationship as an absolute privileging of pure objectivity, which would define the body as merely a perceiving thing in the world.

Merleau-Ponty has identified the act of the individual forming itself in the world as the mutual constitution of body and world, a dynamic relation of *each* to the other. Body and world

⁵⁶ Merleau-Ponty, Maurice. *The Phenomenology of Perception*. Pp. 366-7.

are dialectically related to each other in a relation where each shapes and defines the other, without one taking priority over the other. This dialectical dynamic relationship of co-constitution is the creation of a life continually transforming itself by means of its own activity. Through its activity in the world, the dialectical relation of organism to world creates that organism's "sedimentary history." Evan Thompson explains Merleau-Ponty's concept of such a dialectical relationship as follows:

A dialectical relation is one in which: i) A determines B, and B determines A . . . and ii) neither A nor B is analyzable into discrete, causally efficacious elements that stand in a one-to-one correspondence. Furthermore, dialectical relations are dynamic, not static. Hence iii) A alters B, and B alters A; iv) A is altered by B as determinant of B, and B is altered by A as a determinant of A; and v) it makes sense derivatively to speak of A making what A is via B, and B making what B is via A. Given these kinds of close interdependencies, A and B can also be regarded as parts of a larger global whole or pattern when they are dialectically related. Hence vi) what A is a part of is what B is a part of.⁵⁷

The relationship of mutual constitution of body and world render the terms 'body' and 'world' no longer useful in this context, because each connotes an opposition to the other. Thompson's examination of the concept of co-constitutive activity understands life itself as defined by this activity, hence blurring the colloquially accepted boundaries between the concepts of mind, individual, and life. This new articulation of the concept of life allows us to understand this dialectical relationship of body and world – and as we shall see, mind and life – not as an opposition, but as an interdependency. In examining this interdependency, I will show how Thompson's articulation of the concept of mind as a pattern of activity links the concept of mind with the concept of life.

⁵⁷ Thompson, Evan. *Mind In Life*. Pp. 68-9.

3. *Mind Embodied in Life*

What happens to our concept of the co-constitution of the individual in the world when we put it explicitly within a physicalist framework? The collaborative works of Thompson and Varela have this explicit intention. They share the interpretation of Merleau-Ponty's work on the nature of perception (and phenomenological philosophy as it was first developed by Husserl)⁵⁸ that understands one of the central projects of phenomenology as the analysis of how the individual directs herself towards the world, how the individual finds herself in the world. In the course of their own analysis of how the individual directs herself in the world, Thompson and Varela understand mind as constituted through an individual's perception and motion, the central concept of this thesis. Through this examination of perception and motion, they connect the concepts of mind and life, arguing that if mind is constituted through perception and motion, they must consider all organisms that perceive and move as having some kind of mind. The concept of significance as it relates to the self-constitutive pattern of activity is central to their inquiry. Thompson and Varela use the term 'significance' such that I may define it as follows. This definition depends on the concepts of physical presence and presence to the organism that I began using in chapter one. In being perceived, a thing becomes present to the organism, in addition to having been and still being physically present. Significance is the meaning for a perceiver that now comes to constitute a thing as it comes to be present to the organism. There are many organisms, and many such acts of constitution taking place at all times. This is how I will use the term through the remainder of this chapter.

My account of how Thompson's ideas add to my project proceeds as follows. Thompson

⁵⁸ Thompson, Evan. *Mind In Life*. Pp. 413-6. Though the treatment of Husserl in *Embodied Mind* is far more negative, treating him as, in Thompson's words, a "methodological solipsist," by 2007, he had changed his mind. Thompson earlier had interpreted the noesis-noema relationship in a strong representationalist manner – as the creation of an inner world mirroring the outer world which remained inaccessible. Upon studying portions of the Husserliana that were translated after 1993, Thompson came to understand phenomenology such that perception is not a mirroring re-creation of the world inside the segregated mental, but is instead understood as world-directed constitutive activity. My own interpretation of Husserl and Merleau-Ponty in Ch.3 §2 is similar.

lays out his own account of perception as following Merleau-Ponty's lead. Merleau-Ponty described perception as events surrounding an individual which penetrate that individual's body.⁵⁹ Thompson understands perception as an activity which all organisms do, and so examines how – in the most general sense – any individual organism perceives with an aim towards understanding what are the essential activities to life, those activities which an organism only ceases on its death. He makes use of a concept in the science of biology, *autopoiesis*, as defining all these essential activities. Autopoiesis is the chemical activity that constitutes the simplest organic body, the cell-like wall that can absorb surrounding chemicals to sustain the structural integrity of that wall. This is the kind of chemical reaction of taking in and metabolizing other chemicals as food. Thompson understands metabolism as the activity that makes possible perception and motion, and it is also enabled by the perception and motion of organisms, since an organism perceives its surroundings and moves in its surroundings to gather food to metabolize. The relation of perception and motion to metabolism is dialectical, as Thompson describes above.

Merleau-Ponty described perception as a physical body's act of perceiving – as a way in which the outside penetrates the inside. "Hardness and softness, roughness and smoothness, moonlight and sunlight, present themselves in our recollection, not pre-eminently as sensory contents, but as certain kinds of symbiosis, certain ways the outside has of invading us and certain ways we have of meeting this invasion."⁶⁰ The fact of the boundary's existence does not imply an absolute separateness, a pure disconnection between the individual life and its surrounding world. To put the point analogically, building a fence does not put my garden in a different world than the surrounding forest. Perception is a kind of symbiosis between the surroundings, and the self-contained and self-maintaining system that is the organism. Our conception of the physical process of perception as translation of the event into a neural pattern

⁵⁹ Merleau-Ponty, Maurice. *The Phenomenology of Perception*. Pg. 370-ff.

⁶⁰ Merleau-Ponty, Maurice. *The Phenomenology of Perception*. Pg. 370.

of activity matches this account, as the translative understanding of perception sees the event as transformed into a neural pattern of activity, brought within the boundary of the organism by the neural encoding process.

Thompson considers the defining function of life to be maintaining the integrity of the physical boundary of the individual. His investigation into the activity of a self-sustaining physical boundary states what in his work is the principle that unites the concept of mind with its articulation in all forms of life – not just humanity or some select group of highly neurologically complex organisms. Thompson identifies three ways to think about what life, in general, is. One is to define life through the genetic evolutionary process, examining the problems of inheriting traits in species and the transformation of population over time. He mentions Daniel Dennett as the chief proponent of this way of understanding life, particularly as he articulated it in his book *Darwin's Dangerous Idea* in 1995.⁶¹ There is also what Thompson calls the ecological understanding of life, in which organisms are viewed as “beings that interact constructively with their environments, and so change the world in which they and their descendants live. Organisms are ‘niche-constructing’ beings.”⁶² As he explains the ecological conception of life, the focus is on the system of the biosphere as a whole as all parts of it are interdependent, and as its elements – the particular species, ecological niches, and the individual organism – interact in a continual harmonic flux, while the biosphere is constantly changing but always maintaining its existence. Particular organisms will always die, and particular species of organisms will evolve into others or die out altogether; but once the system of the biosphere is present, it will remain as long as the planet itself remains.

Thompson instead begins his examination of what life is with the individual life, the singular life. He examines the conditions under which we can take a thing and discover whether

⁶¹ Dennett, Daniel. *Darwin's Dangerous Idea: Evolution and the Meanings of Life*. Simon and Shuster. (1995)

⁶² Thompson, Evan. *Mind In Life*. Pg. 95. Thompson gives as an example of this absolutizing of ecology as the Gaia hypothesis of chemist James Lovelock and microbiologist Lynn Margulis.

or not that thing which is physically present in this point in time is alive. He considers the focus on the individual as conceptually prior to the other two characterisations of life. In order for there to be a reproductively active population, there must be individual members of that population. A planet-wide whole biosphere cannot exist without its constituent elements interacting with each other, and these elements are all individual, singular lives. The physical self-construction and maintenance of this singular unit – this life – is the required condition for the reproductive network central to the genetic view of biology and for the holistic growth of the intradependently constituted biosphere. This process is autopoiesis, “the paradigm case of biological autonomy.”⁶³ A system of molecules come together constituting a boundary – the molecules arrange themselves such that their system constitutes a unit with a clear inside and outside. This bounded system is semi-permeable, so that it takes in other molecules of various types which it breaks down in a metabolic chemical reaction such that further molecules which compose the bounded system and the boundary itself are generated. Particular chemical reactions create new molecular structures that are wall-like in their behaviour. These molecules which function as walls connect with each other as a physical boundary to enclose a region of space – the activity of these wall-functioning molecules constitutes an inside space and an outside space. The presence of an organism transforms the significance of space in that an organism differentiates the space inside itself from the space outside itself. What was undifferentiated becomes, through this activity, an individual and its world.

This is not to say anything quite so radical as that a single cell has a language and understands its environment in the same manner that humans do. What Thompson does here is to take those activities of perception and motion – the activities constitutive of mind – and see if they can be applied in the context of the single cell. Thompson finds the physical structure that is necessary to carry out the activities that constitute mind in the autopoietic body. His analysis of autopoiesis has shown that there is enough commonality between the actions of the human

⁶³ Thompson, Evan. *Mind In Life*. Pg. 44.

individual and the actions of the simplest form of life to say that the activities we colloquially call 'mental' begin with the formation of a rudimentary life. These actions are those co-constitutive activities that occur in the relation of an individual with the world. Even the simplest forms of life perceive and move. In this case, the individual is the autopoietic reaction first constituted from the undifferentiated chemical sea. As the individual unit of life is constituted, the activity of this individual life is of movement towards certain types of chemicals in its surroundings and its absorbing those chemicals as fuel for the maintenance of its physical boundary. This individual life opens itself to invasion by chemicals from the outside for fuel, and in this activity in the world constitutes its inner and outer. The individual life – even at its most rudimentary form of the autopoietic cell – acts with purpose, moving itself to acquire fuel. Even the simplest life “takes root in being and time by taking up a situation,”⁶⁴ which is how Merleau-Ponty describes what it is for an individual to be conscious. In this case, an individual's situation is the self-propelled movement to take in fuel for its metabolic reaction. This self-constitutive activity is the simplest way of taking up a situation which constitutes the most rudimentary form of mind. The activities that constitute mind – perceiving and moving – are found in even the simplest organisms, so Thompson concludes that all organisms constitute some manner of mind through their activity in the world.

The enclosing of the boundary encourages the metabolic reactions such that the continuance of the metabolic reactions depends on the presence of the boundary, and the boundary is produced and maintained by the metabolic reactions. This scenario creates the conditions under which the boundary can maintain its integrity and expand – this is the growth of the inside space. The central biological structure for this activity of a bounded metabolism is the cell.

A cell stands out from a molecular soup by creating the boundaries that set it apart from what it is not. Metabolic processes within the cell determine these boundaries, but the

⁶⁴ Merleau-Ponty, Maurice. *The Phenomenology of Perception*. Pg. 493.

metabolic processes themselves are made possible by those very boundaries. Should this process of self-production be interrupted, the cellular components no longer form a spatially individuated whole and they gradually diffuse back into a molecular soup.⁶⁵

It is at this time of the diffusion of the cell that we may say the cell dies.

An organism – a life – is an enclosed metabolic system of chemical activity, and this chemical activity makes possible rudimentary perception and motion. That perception and motion makes possible the continuation of the metabolic activity. Such chemical activity is a self-repairing and self-sustaining process. A multiplicity of cells can come together in relation to each other in space, and constitute an autopoietic system among each other – the multicelled organism. This does not deny the validity of the genetic account of life, as the vast majority of organisms on Earth have a metabolic reaction network consisting of proteins, DNA, and RNA. These molecules that constitute the metabolic reaction of the component cells of many organisms determine the structure of the bounded system which is the physical body of the organism.⁶⁶ The autopoietic account of life defines what precisely is the activity of living. Metabolic activity generating an autopoietic system is the activity of physical differentiation – the creation of an inside and an outside where in the context of the undifferentiated chemical sea, there was only motion in space. The concept of translation as a description of the physical mechanics of perception is a recognition of this basic boundary of the organism from its world. The physical constitution of the organism is defined by the semi-permeable boundary that the autopoietic chemical activities create – the boundary of a human organism is literally the shape of humanity, its silhouette. The physical mechanism of perception is the translation of the perceived event into the neural code – perception is the penetration or invasion of the thing perceived into the perceiver, just as Merleau-Ponty described it.⁶⁷

Thompson calls the autopoietic process the physical constitution of the organism as

⁶⁵ Thompson, Evan. *Mind In Life*. Pg. 99.

⁶⁶ Thompson, Evan. *Mind In Life*. Pp. 100-3.

⁶⁷ Merleau-Ponty, Maurice. *The Phenomenology of Perception*. Pg. 370. Quoted in §3.2.

regulating itself and its environment – what could broadly be defined as homeostasis, the maintenance of the organism’s status quo. This activity of regulation of the organism and its environment is itself the activity of perception and motion, since the organism regulates itself through taking in chemical fuel and regulates its environment by moving in it and eating parts of it. The autopoietic conception of a life allows us to understand in an explicitly physicalist context that perception and motion, the activities of the mutual co-constitution of mind and world, are common to all forms of life. Autopoiesis is the physical mechanism of differentiation, the metabolic chemical process that is the beginning in time of a life. “A living cell stands out from a chemical background as a closed network of self-producing processes that actively regulates its encounters with its environment.”⁶⁸ The chemical reaction – metabolism – that defines the autopoietic system is the physical activity that constitutes and maintains an individual life, and metabolic activity constitutes a dialectical relationship between this unity that we call the organism and that which is outside the organism, its surrounding environment. In this dialectical relationship we will see the most basic structures of activity of co-constitution of the pattern of an individual life articulated in its activity. This relation arises in the interaction between one’s surroundings and one’s own body. Thompson writes:

The organism is in and of the world, and its identity has to be enacted in the very process of living, which is to say in the assimilation of and accommodation to the world.

Autonomy, far from being exempt from the causes and conditions of the world, is an achievement dependent on those very causes and conditions.⁶⁹

A life, driven towards self-maintenance through its metabolic activity, interacts with its environment such that the environment is altered and the individual life maintains its physical integrity such that the metabolic activity continues. The organism transforms its environment, and the environment transforms the organism, but neither of these relations of transformation has any priority over the other. These transformations are concurrent, mutually constituting

⁶⁸ Thompson, Evan. *Mind In Life*. Pg. 149. Thompson is inspired here by the work of Hans Jonas, and quotes heavily in this chapter from Jonas’ work *The Phenomenon of Life: Towards a Philosophical Biology*.

⁶⁹ Thompson, Evan. *Mind In Life*. Pg. 150.

activities. Merleau-Ponty's phenomenological analysis of this dialectical relationship uses the concepts of a body and its world, where Thompson uses the concepts of an organism and its environment, but the relationship itself follows the same dialectically constitutive structure in both accounts. Where Merleau-Ponty saw this relationship only in human living, Thompson sees this relationship in the activity of living at its most general. Our analysis of neurophilosophy illustrates how one could see this activity of co-constitution as constituting mind when the activity takes place within the sensorimotor system of an individual. This is how neurophilosophy, phenomenology, and Thompson's analysis of the organism fit together to outline the philosophy of mind as activity.

There remains still to account for the fact that a bacterium and a human are two extremely different lives. The concept of significance we defined at the beginning of this section connects all kinds of organisms as articulations of the activities constitutive of mind and illustrates the continuity among them all. A life, even in its most rudimentary form, constitutes in its activity further articulations of significance in the world of which it is part. Thompson uses the example of a simple bacterium floating in a sea of sucrose.

Although sucrose is a real and present condition of the physicochemical environment, its status as food is not. That sucrose is a nutrient is not intrinsic to the status of the sucrose molecule; it is, rather, a relational feature, linked to the bacterium's metabolism. Sucrose has significance or value as food, but only in the milieu that the organism itself brings into existence . . . In this way, the environment becomes a place of valence, of attraction and repulsion, approach or escape.⁷⁰

As a life grows and evolves in complexity, its possibilities of interaction grow and expand – an increasingly complex life creates new modes of engagement with its surroundings, and these creative actions constitute new articulations of significance for the world. Here is the parallel of this chemical analysis of life and the phenomenological analysis of life. As a life constitutes itself in the world, it constitutes novel significances for that world. The individual organism relates

⁷⁰ Thompson, Evan. *Mind In Life*. Pg. 158.

itself to its surroundings through its own self-constitutive activity in ways it has never been related to anything else before. These new significances are created in the mutual co-constituting activity of an individual life and the world in which it lives.

Thompson's analysis of the co-constitutive activity that is the dialectic of the individual and the world lets one understand the creation of a life as a chemical reaction, the first metabolic activity. In this chemical activity, there is a physical differentiation, the constitution of a boundary that now delineates what is inside and outside. This differentiating is the activity that serves as the condition for the possibility of any perceptual activity. Differentiating is the constitution of a new thing – a life – which enables, through its activity, the constitution of new activities. These new activities constitute significances that would never have existed if there had been no organism perceiving and moving in the world. Take Thompson's example of the bacterium and the sucrose – the existence of a life constitutes activity which in the perspective of presence to the organism creates new significance, while where no life existed there was only physical presence. A life's actions are unprecedented because in its very genesis, a new significance is constituted, sparking a spiral of further new significances. From the very moment of the boundary's formation, space itself has a new significance in the context of this body's existence, for there is now an inside and an outside, a new value of location.

We can see in autopoietic activity the simplest physical formation of the self-constituting pattern of activity. Thompson writes:

The human mind is embodied in our entire organism and in the world. Our mental lives involve three permanent and intertwined modes of bodily activity – self-regulation, sensorimotor coupling, and intersubjective interaction. Self-regulation is essential to being alive and sentient. It is evident in emotion and feeling, and in conditions such as being awake or asleep, alert or fatigued, hungry or satiated. Sensorimotor coupling with the world is expressed in perception, emotion, and action. Intersubjective interaction is the cognition and affectively charged experience of self and other. The human brain is crucial for these three modes of activity, but it is also reciprocally shaped and structured by

them at multiple levels throughout their life span.⁷¹

The constitutive activities of the simplest organisms begin a spiralling pattern of complexity which eventually constitutes – after several billion years – the astonishing complexity of the world in which humans live and constitute themselves. Sensorimotor coupling, as Thompson and Varela explained throughout their work, is in its simplest articulation the creative activity of the organism in the world in pursuit of fuel for itself. From this most rudimentary activity ever-evolving patterns of new significance are constituted in activities of spiralling complexity and novelty. Early in the evolution of life, these significances would be relatively simple, like sucrose in its presence to the organism being a food, and no longer one existent aggregate among many as is its physical presence. The existence of many organisms all engaging in co-constitutive activity in the same surroundings and interacting with each other's co-constitutive activities – what Thompson calls intersubjective interaction – only quickens this process of the spiralling constitution of complexity of the pattern of life in the world. Human thinking is one of the articulations of the continuing process of this spiralling complexity of the pattern of living activity which currently exist.

Conclusion. Mind as Activity Means Mind Is Common to All Life

The goal of this thesis was to articulate a non-reductive physicalist concept of mind by drawing from sources in several contemporary philosophical traditions. My gateway into examining this problem was the question of the nature of qualia of consciousness in philosophy of mind. Qualia are dependent on the nature of the sensory organs, and no constancy is to be found in the continually shifting qualia of experience. Though we can understand the physical processes of how qualia of experience come about by examining our sensory organs themselves, the physical presence of these organs is the only constancy to them – their activity remains in flux. The qualia question is a puzzlement at the existence of qualitative experience that seems to

⁷¹ Thompson, Evan. *Mind In Life*. Pg. 243.

be irreducible to the physical structures of the organism. The qualia of sensory experience exist, as I experience colours, sounds, textures, and tastes, but there appears to be no physical correlate to my experience of red. The Churchlands offer an interesting solution to the qualia question, since they explained qualia as the perceiving function of the neural sensorimotor system – the physical activity of the brain and the rest of the neural system in every organism. It was the physical structure of the sensory organs that resulted in the qualia of experience, meaning that under the neurophilosophical account, qualia were no longer ineffable or unexplainable. We could now understand qualia as themselves physical – neuroelectrical patterns in the sensorimotor system of sense organs and the relevant neural systems. There is no physical correlate to my experience of red because that experience is itself physical. We understand what experiential colour qualia are by examining how the eyes work. The same goes for all other sensorimotor systems. At the moment of contact with an organism, objects and events which were physically present in the organism's surroundings are translated by that organism's physical perceptive apparatus into a pattern of neuroelectrical activity. The event as it was physically present was translated into an entirely different kind of existence – it was translated from being physically present to being present to the organism, from impassive existence to existence as perceived from a subjective perspective. Patterns of light are translated into qualia of colour, and so on for all other sensorimotor activity.

One problem remained with our ability to accept the Churchlands' neurophilosophy as a solution to the qualia question, the eliminative character of their philosophy, which I said at the outset of this thesis was not the direction I thought should be pursued. The eliminative approach seeks to render non-neurological accounts of thinking and the propositional attitudes into *mere* metaphor, a mistake of reasoning by way of an artistic play of words. As the Churchlands saw matters, to accept neurophilosophical solutions to problems in philosophy of mind, the only explanations of mental activity that were taken to have any validity at all were explanations that were drawn exclusively from neurology. All non-neurological concepts, they said, were obsolete

so should be abandoned and forgotten. I have investigated the concept, implicit in the Churchlands' work, that what we consider the mental is constituted as a pattern of activity. In so doing, I have built an example of a physicalist understanding of mind that does not embrace a similar reductionism, nor would ever need to. First, I returned to the functionalist philosophies for concepts that help develop a satisfactory physicalism, which undercut the eliminativist attack on a potentially fruitful philosophy. It is in the work of a functionalist, Lewis, that we found the concept of the self-constituting pattern articulated most explicitly. Lewis himself intended it as a handy metaphor, but the concept of pattern lets one understand how the activity of thinking and perceiving could to constitute an individual mind. The concept of the pattern that constitutes itself can be interpreted in the Churchlands' account of the neural system. Later in our investigation, we interpret the concept in Merleau-Ponty's account of the individual living in a world constituting its own "sedimentary history" through that individual's own action in that world. And Thompson also includes this concept in his adaptation of Merleau-Ponty's concept of the individual existing in a relation with the world of mutually co-constitutive activity into a physicalist philosophy that made the central figure a life.

Thompson's analysis of the metabolic activity that constitutes a life allows us to see that the simple presence of an organism in the world transforms that world insofar as the elements of the world now have new, unprecedented, continually more complex ways of existing. When there are no organisms, things exist only as their physical presence – a simultaneous co-existence. When there is at least one organism, there is now a differentiation into that which is inside the boundary of the organism and that which is outside. A thing's relation to an organism – its presence to the organism – involves that thing in the ever-spiralling pattern of significance. The creation and growth of this pattern of self-constitutive activity is the very definition of life, ongoing even in the presence of the simplest life.

The conclusion of our investigation is the concept of the pattern of activity in a world

that constitutes itself anew at every moment of its activity. In the physicalist context – even in an eliminative perspective – we can see individual mind not as a thing, but as a pattern of neural activity. All perceptions and movements are patterns that articulate themselves together through the brain, and these patterns produce in their activity taken as a whole the pattern of activity that constitutes the individual mind. Once concepts that are not strictly neurological are valid to our account of mind and life, we come to understand that the activity of patterning is present in the action of all organisms. Humanity has a particular style of patterning in action, but there is a style for every type of organism. Depending on how specific one aims one's account of style, there is a style of activity for every individual life. The pattern of a life's activity is exactly what constitutes that individual life – the pattern of significance in the constitution of one's perspective of living in the world, and the pattern in which a life constitutes the significance of the world itself through its creative actions, generating the novel and unprecedented. As we have identified and analyzed this concept of the pattern of activity that patterns itself through its activity, we have found a new way to address the problems of the nature of mind and world which avoids many of the conceptual stalemates. Organic activity itself constitutes new significance for the world and for its own action, constantly transforming itself and the world where it lives, always open to new possibilities that it can constitute in the world. With an open attitude towards philosophies not firmly rooted in reductionism and eliminativism, we can create a philosophy far more nuanced than the Churchlands' own neurophilosophy which nonetheless preserves the most important elements of their thought. The central idea is that the identity of the individual organism is constituted in activity.

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