UNIVERSITY OF CAPE COAST

PHILOSOPHICAL IMPLICATIONS OF LIBET AND WEGNER ON FREE WILL

FERDINARD FOSU-BLANKSON

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BY

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DECLARATION

Candidate's Declaration

I hereby declare that this dissertation is the result of my original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature …… Date: ……..

Name: **Ferdinard Fosu-Blankson**

Supervisor's Declaration

I hereby declare that the preparation and presentation of the dissertation were supervised in accordance with the guidelines on supervision of dissertation laid down by the University of Cape Coast.

Supervisor's Signature …… Date: ……

Name: **Dr. Husein Keyinde Inusah**

ABSTRACT

The conventional notion of free will does not possess formidable counter arguments to modern neurobiological investigations, proving the implausibility of free will. The pool of evidence gathered by cognitive neuroscientists makes strong justifications to truncate the conception of free will. The research of Benjamin Libet and Daniel Wegner explicates the physical and cognitive limitations that make free will untenable. Their position purports that we are neurobiologically determined. However, their empirical assessment of free will misguides their conclusion. Free will as a conceptual problem requires an assessment beyond the empirical domain. Despite the solid claims from neurobiological determinism, it ignores the metaphysical entailment in action. Hence, it gives an unsatisfactory account for human action. To replace neurobiological determinism, this study proposes neurobiological freedom.

KEYWORDS

Free Will

Conscious Will

Determinism

Readiness Potential

Cause

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DEDICATION

To the memory of the late Mrs. Sophia Esi Kuntuwaa Yaadar.

TABLE OF CONTENTS

LIST OF FIGURES

CHAPTER ONE

INTRODUCTION

Background to the Study

In recent times, hard proof from empirical data in the evolving studies of cognitive science shown in Benjamin Libet and Daniel Wegner's research has threatened the philosophical and religious notions of free will (Mele, 2008). It is argued in this study that using empirical methods to verify the inexistence of free will is not a tenable approach since different disciplines including philosophy, law, psychology, and religion, share diverse conceptions of free will. I aim to prove that cognitive neuroscientists are missing the point because they are using inappropriate methods that construe free will as a notion that can be studied solely by observation. Hence, this study will put to the test the veracity of the method of studying the concept of free will by cognitive neuroscience and psychology through a philosophical lens.

The perceptual world, as depicted by science, is causally determined by natural laws. Also, the existence of an immaterial phenomenon can be justified if the account defending its existence goes through a rigorous assessment. Free will is an immaterial phenomenon and not objective as the nature of the material world of which our corporeal bodies are part. So, the veracity with objects of the world is assessed and known via empirical enquiry. Meanwhile, the notion of free will is suitably justified through a philosophical method since philosophy offers a non-dogmatic and rigorous study into non-empirical conceptions such as the concept of God, evil, causality and so on. However, the idea of a visible world with determinants and the idea of free will are part of our ordinary thinking. A description of the

problem associated with free will is as follows: human beings live in a causally determined world, so it seems impossible to have a will that can be free and also cause the body to act on that self-caused will (Grim, 2007). An individual is free only if within his nature, he owns an opportunity to will and cause his actions to be as he wishes despite his physical and cognitive influences. Although philosophers hold the view that the issue of free will is non-factual, neuroscientists and psychologists maintain that humans are incapable of free will due to cognitive and physical limitations. This issue had provoked the interest of philosophers such as Clarke (2003), Mele (2009), and Kane (2012), and the reason is that the issue of the feasibility of free will hinges on the question: can consciousness cause behaviour?

To answer the question above, Fieser (a contemporary philosopher) presents the attempts made by some philosophers. The Cartesian dualists believe there is a causal influence of the self-consciousness (the I – the immaterial part of human nature) on the human body. The idea of consciousness to the behaviourist is equivalent to human behaviour, which is caused by our physical interactions. Epiphenomenalists accept the dualistic conception of the mind but believe that there is no causal efficacy for the immaterial part of a person. And also, some neuroscientists hold the notion that is similar to the mind-brain identity theory (the physicalist theory that claims that any mental state is identical with brain state). So, most neuroscientists will decline any interaction because the mind is reducible to the brain (Fieser, 2008). Even though philosophers have attempted rational investigations, there is not yet a satisfactory answer and all attempts,

somehow, fail to either prove complete reducibility of mental states to brain states or have an adequate explanation to the mind-brain interaction.

Moreover, the issue of the causal potency of consciousness is debatable because the issue is non-factual. Consciousness is not a perceptual phenomenon but a mental phenomenon. So, the test on mental causation cannot be strictly done with empirical testing unless it involves some hypothetical conclusions. Thus, the need for philosophical investigations (Nahmias, 2002). Let us get informed on who Libet and Wegner are and why most free will sceptic's works in cognitive neuroscience cite these authors.

Libet is a neuroscientist whose major experiment with the electroencephalogram (EEG) scan proved the precedence of readiness potential in the brain ahead of the will (Libet, 1985: 1999: 2004). The readiness potential is an electric current travelling through the synaptic network of a brain. The readiness potential occurs in the somatosensory cortex 550ms before an individual can act. Notwithstanding the idea that desires and intentions can cause actions, Libet posits that the occurrence of a readiness potential happens before our intentions and desires. Thus, the readiness potential determines our intentions and desires.

Wegner is a social psychologist who doesn't entertain the idea of mental causation. He maintains that it will be 'illusive' to believe that there is a property of our consciousness, our 'intentions' to be precise, that can sufficiently cause human actions such that the individual becomes the author of the action (Wegner 1999: 2002: 2004). To Wegner, the notion of a conscious will is an illusion. This 'illusoriness' makes us believe that we cause our actions. The idea of consciously willing is a mere feeling that many are

convinced about due to humans' unawareness of the complex actions at the micro-level of the human body. Moreover, Wegner claims that there are cogent arguments that support this by arguing that there are more complex physical systems existing beyond the microscopic level that may be responsible for the behaviour we exhibit. The preceding narrative is the reason why some philosophers such as Mele (2009), Balaguer (2010) and Levy (2015) find the neuroscientists and the psychologists claims about free will unsatisfactory.

There is a couple of issues that arise from the methods and claims of Libet and Wegner, and they are as follows: the issue of neuronal adequacy, the issue of backward referral of subjective timing, whether readiness potentials represent movement-generating neural activity and the idea of a vague conception of consciousness. These issues will be briefly explained in turns.

There is the issue of neuronal adequacy because comparative studies on the normal function of the somatosensory cortex cause some level of doubts in the methods used in Libet's experiment. Some expressions by Libet relating to neuronal activities are vague and are also based on instantiations, while their conclusions make judgments addressing a cluster of neuronal actions (Roskies, 2011).

Another issue is that of backward referral of subjective timing, as discussed by Roskies (2011). The referral in timing may not be too accurate because of the possible neural activities happening from -100ms to the time of conscious awareness of one's intent. Hence, there could be other resulting neural actions for peripheral stimulation.

The third is the question of whether readiness potentials represent movement-generating neural activity? Because readings of the readiness potential are a reverse inference of voluntary acts, Libet assumes that the presence of neural activity in the somatosensory cortex is the only neural activity that could be responsible for the voluntary action. On the contrary, there could be other neural activities outside of Libet's focus that could be responsible for one's voluntary action (Pockett and Purdy, 2011).

Furthermore, some authors, including Levy (2015), contest the authenticity of the experiment results because, during the test, participants were to signal to indicate the timing of their conscious peripheral stimuli - that supposedly reflects their intention to act. Libet could not have had accurate results because the participants doing their timing could have affected the results with some biases. Meanwhile, some others share a different belief that the presence of a readiness potential is due to paying attention to the wrist, but rather, it could be that its presence reflects an expectation of some kind of movement rather than a specific one.

Lastly, according to Elzein (2020), Wegner's description of consciousness is vague. This counter raises an issue because, from Wegner's description, free will (the idea of a caused action initiated by consciousness) is just a feel and a trick by the mind. This description implies that the conviction that makes people believe that they choose is nothing but an awareness triggered by the brain. This conception of consciousness by Wegner projects a shallow notion of human consciousness. There is more to human consciousness than projecting it as a mere observer. These and other issues are what generate criticisms of Libet and Wegner's claims on free will.

In line with the above criticisms, this study seeks to argue that the problems that threaten Libet's and Wegner's projects are philosophical problems that empirical studies may not be able to resolve. This study will show that Libet and Wegner, by their research findings and recommendation, commit numerous causal fallacies that cast a dent on their projected conclusions.

Statement of the Problem

Human freedom occurs in a neurobiological system characterised with a metaphysical entailment. Thus, Libet and Wegner's empirical methodologies trivialises the entailment of consciousness during decision-making.

The problem stems from the error of subjecting the concept of free will to an empirical enquiry. The empirical enquiry limits the study and involvement of consciousness in decision-making. An empirical investigation does not seem to be an adequate method for resolving the free will debate as it generates philosophical inconsistencies, logical errors, misconceptions and causal fallacies that fall on the blind side of Libet and Wegner's line of reasoning (Mele, 2009: Roskies, 2011: Levy, 2015). This is the gap this study aims to address.

Thesis

The conventional conception of free will is inadequate. Neurobiological freedom appropriately explains human freedom rather than the neurobiological determinism defended by Libet and Wegner.

Neurobiological freedom is the idea that consciousness functions randomly and spontaneously within the neuronal network in action production. In the neuronal network, the readiness potential is a representation of conscious

activities in the brain. The composite and necessary relationship between the brain and consciousness are fundamental factors that account for human action. A conscious brain is required for action production. The unconscious brain cannot cause a voluntary action, neither can consciousness be sufficient for action, it will require a brain (the substrate). The freedom in human action happens at the brain level. In the neuronal network, the randomness and spontaneity enhanced by the metaphysical feature of consciousness are conceptually opposed to neurobiological determinism. Hence, the indeterministic feature of conscious patterns in the synaptic network is neurobiological freedom.

Purpose of the Study

This study aims to prove that cognitive neuroscientific approaches do no justice in demystifying the problem of free will.

Objectives of the Study

The objectives of this study are as follows;

- To discuss some philosophical conceptions of free will
- To evaluate the philosophical relevance of cognitive neuroscientific experiments on free will
- To analyse Libet and Wegner's evidence and claims on free will via a philosophical lens.
- To argue that there is some metaphysical entailment tied to the assessment of free will that empirical studies seem to be ignoring.

Research Method and Sources of Information

This study is a qualitative research that employs the normative method of research. The normative method involves analysing phenomena without

appealing to primary empirical data (except Libet, 1985, 1999, 2004 and Wegner, 1999; 2002; 2008) obtained from the field. The normative method is the appropriate method for this study because it will subject the issue of free will to a conceptual enquiry and eventually guide the analysis in concluding on the existence or nonexistence of free will. By this method, the conceptual analysis will provide the appropriate grounds to make substantial claims on the issue of free will without any corruption from empirical biases.

Primary sources which this study will require include books and articles by Libet and Wegner. The study will also rely on secondary literature such as books, reviews, and commentaries relevant to the study.

Scope of the Study

Aside from philosophical dimensions on free will, which fall within the domain of metaphysics, philosophy of mind and ethics, only neuroscientific works and works on psychology will be engaged in the analysis of free will in this study.

Significance of the Study

The findings of this study will be of immense benefit to society as it tries to explicate why the analysis on free will should be in the domain of philosophy. Moreover, the study will be of relevance to other disciplines, such as; cognitive neuroscience, psychology, law and religion by guiding them in their examinations on free will and how the issue relates to their domain of study.

Organisation of the Study

The essay is in five chapters. The first chapter introduces the research and outlines the aim and approach used.

Chapter two explores the notion of free will, taking into account various doctrines in the philosophical discourse of free will, and outlines their strengths and weaknesses. The chapter also discusses contemporary views that have emerged on free will, thereby directing the focus of the study to Libet-like and Wegnerian views on free will.

Chapter three makes a review of literature on cognitive neuroscientific experiments on free will and examine their conception of free will. This chapter will also look at other Libet-like experiments, discussing issues such as timing and causation. Aside from other issues on readiness potential, readings and variations in other experiments, this chapter will also analyse Wegner's position on free will. The analysis of Wegner's thesis will include issues on the question of illusion, agency, and the experience of the will.

Chapter four spells out arguments to substantiate the inconclusiveness of cognitive neuroscientific claims against free will. The arguments include the Husserlian objection, vague and equivocal cases, the naturalistic fallacy and the fallacy of hasty generalisation. The analysis and arguments exposed the empirical gaps and prove the justifications as to why philosophical analysis is requisite for a study on free will rather than empirical analysis.

The final chapter (chapter five) comprised an overview (summary), recommendations and conclusions on the study.

Literature Review

This study centrally evaluates free will by assessing decision-making processes and its analysis by cognitive neuroscientists. The broad nature of the free will issue allows several scholarly contributions offering possible solutions to the free will debate. Scholars relevant to this study include the free

will debaters (Kane, 1996; Pereboom, 2003; McKenna & Pereboom, 2016), some cognitive neuroscientists (Kornhuber & Deecke, 1965; Libet, 1985: 1999: 2004, and Wegner, 1999: 2002: 2008), and some critics of the cognitive neuroscientists (Nahmias, 2002; Mele, 2009; Roskies, 2011; Radder & Meynen,2012, Radin, 2013).

The centre for assessment in most free will debates has not been whether humans have choices or not, rather the central issue is whether we cause our actions or our actions happen to us. Such analysis on free will and determinism has been extensively discussed by McKenna and Pereboom (2016). McKenna and Pereboom's book is relevant for this study as it holds diverse accounts on free will, determinism and moral responsibility. This literature is centrally used over many others because while other authors write on the debates of free will and determinism from a biased perspective, this book written by a compatibilist (McKenna) and a determinist (Pereboom). The compatibilists believe that we are simultaneously free and determined while the determinists also hold that humans are not free but controlled by some nature or some laws. Thus, these unidentical views seems to balance the biases involved in the discussions of other positions on the debate of free will and determinism.

The prominent arguer for free will is Robert Kane. In his book (Kane, 1996), *The Significance of Free Will*, Kane argues for free will as a libertarian. The Libertarian position holds that humans are free and our actions are up to us. Kane particularly argues for free will by postulation the theory of Self-forming Actions (SFA). The theory holds that with intentions, plans and desires in place, the self is able to go through a process of forming actions that

are purely inspired by the individuals' intentions. On the other hand, Derek Pereboom is a more plausible determinist. His book (Pereboom, 2001), titled *Living Without Free Will*, argues for determinism by first spelling out libertarians' arguments and developing critiques to show why human life is essentially determined.

Furthering the debates on free will, contemporary discussions include many scientists (cognitive neuroscientists). The scientists' analysis on free will seem to have gained attention because they use empirical and more advanced approach to analyse free will, and this empirical method makes practical sense to people. The first neurobiologists to have investigated on the plausibility of free will by assessing brain activities were Kornhuber and Deecke. Kornhuber and Deecke's (1965) investigation proved the electric potential in the brain during decision making. They called it the *Bereitschaftpotential* (BP). On their account, this electric potential occurs in the brain due to one's will or intention to act. This implies that the electric potential does not precede human will and the will stimulates all control in the body toward action. Contrary to the study in 1956, 1985 saw a revolution in intra-cortical studies as Benjamin Libet designed a test to establish the precision of either the electric potential or the will. Following Libet's studies (1985, 1999 and 2004), he calls this electric potential (RP) and his experiment proves that the RP occurs about half a second before the human will to act. Thus, the initiation of action is not of human willing, yet, the will is able to control the course of action through a window opportunity.

A sequel to Libet's investigation is Wegner's (Wegner, 2002: 2004: 2008) exposure of human cognitive limitations to action as he denies any

possibility of mental causation. Wegner's investigations were finalised with his co-author, Wheatley in 1999. Their study results show that human actions are purely caused by an unconscious human system. Therefore, the conventional belief that our thoughts/will causes human actions is a deception by the mind (Wegner, 2002).

The denial of human freedom based on cognitive and physical limitations has pricked some scholars to pay attention to studies and methodologies by Libet and Wegner (Nahmias, 2002). One of these critics is Alfred Mele. Mele (2008) exposes the inconsistency in both Libet's and Wegner's positions. The inconsistency is that while Libet claims that we are capable of conscious efficacy during a window opportunity in action, Wegner outrightly rejects conscious efficacy. Roskies (2011), Radder & Meynen (2012), and Radin (2013) critique Libet on the issues of backward referral in subjective timing, the misinterpretation of initiation in brain action, and the implications of time-reversed experiments, respectively. Also, Elzein (2020) critiques Wegner on the misinterpretation of the term consciousness.

This chapter has put forth a foundation to achieve the purpose of this study. The chapter entails the background, problem, thesis, methodology, purpose, objectives, organization and a review of relevant literature.

CHAPTER TWO

PHILOSOPHICAL VARIATIONS ON FREE WILL

Introduction

This chapter is a survey of philosophical views on free will. It aims to provide general knowledge of the philosophical problems of free will and an understanding of some free will arguments. It will focus chiefly on the philosopher's understanding of the problem of free will and the philosopher's need to recognise and respond to cognitive neuroscientist's views on free will.

The concept of free will is of philosophical relevance. The issue of whether one freely acts or not has been one of the primary issues philosophers have attempted to resolve. According to McKenna & Pereboom (2016), while others believe that we cause our actions, some think our actions happen to us. This issue has resulted in diverse conceptions of free will. Some believe that our actions are free and determined, but others believe that the two (being free and being determined) cannot co-exist in a possible world. One may believe in human freedom and be agnostic about the possibility of being determined. Alternatively, a person may believe we are determined but be agnostic about human freedom. Others believe that the world is characterised by a chance mechanism such that every happening is undetermined. So, humans are neither free nor determined.

In the domain of philosophy, the notions of free will and determinism have been the foundation for other emergent conceptions, namely; compatibilism, incompatibilism, hard incompatibilism, libertarianism, modest libertarianism, semi-compatibilism, impossibilism, illusionism, and revisionism (McKenna & Pereboom, 2016).

Definition of terms

There are some basic terms employed in the free will discourse that need to be well introduced to enhance better understanding. The first of them is free will. Free Will is the notion that a person can willingly act without any force or any external influences. This idea in philosophical discussions is called classical Libertarianism (Kane, 1996). The term free will is sometimes used interchangeably with freedom. For further clarification, having an understanding of free will as having the freedom to act in philosophical debate does not include other conceptualizations of freedom (like political freedom and so on). Free will is conceptually opposed to determinism. Determinism is the concept that happenings of the present are a consequence of past events, and the happenings of the present will as well cause the future. That is to say, humans have no control over their actions, events happen to us, and happenings are beyond our will. Moral responsibility is the status ascribed to human actions so that judgements could be placed on people's acts. This concept is what enhances punishment for actions. Hence, the idea of moral responsibility reminds people of the need to control and weigh their actions. The veracity of either free will or determinism will have varying results for our moral life and societal activities.

Another concept is indeterminism. Indeterminism is the belief that the world by nature is indeterministic (Balaguer, 2010). This means that the past, before its happening, was unknown and could not have been known. The present could not have been accurately predicted because things of the universe randomly happen, and the same applies to the future. The future is undetermined because what could occur can go beyond or conceptual abilities.

This universal randomness precludes both free will and determinism because happenings are beyond human control and also not determined. However, some philosophers appeal not to the broad concept of indeterminism. Instead, they believe that decisions can be characterised by some form of neuronal randomness (indeterminacy) even though they act freely.

The varying conceptions of free will had raised some contentious issues in the attempt of a solution to the problem of free will, and one of them is the compatibility issue (McKenna & Pereboom, 2016). The compatibility issue is featuring a fundamental question; Is free will compatible with determinism? The inadequate arguments by libertarians and determinists to provide a sufficient account of free will had philosophers developing different ideas on free will. One of the emergent positions is compatibilism. Compatibilists maintain that humans can simultaneously act free in a deterministic world. They accept the relevance of natural laws and their limitations on human control such that they can affect decision-making. Nevertheless, compatibilists argue that decisions could be freely willed. Hence, their belief that the universe is fundamentally determined makes William James classify them as soft determinists. Popularly, John Fischer is known for his view called semicompatibilism. Fischer's opinion holds that moral responsibility is compatible with determinism whiles being agnostic of free will in the compatibility equation.

Incompatibilism is a contrary view to compatibilism. Fundamentally, an incompatibilist opposes any kind of parasitism between free will and determinism. Two groups of philosophers constitute incompatibilists, and they are libertarians and determinists. Modern libertarians are incompatibilists

because of their radical opposition to determinism. To them, human actions are free, and determinism is false. Meanwhile hard incompatibilists are radical determinists, also known as hard determinist, who assert that the incompatibility between free will and determinism is true and free will does not exist. Originally, hard determinists argued that humans lack free will but for the reason that the universe is deterministic and determinism precludes free will. Randolph Clarke, a proponent of incompatibilism, introduces two variants of incompatibilism: narrow incompatibilism and broad incompatibilism. Narrow Incompatibilism is the conception that denies free will's compatibility with determinism but affirms a harmonious relationship between determinism and moral responsibility. Broad Incompatibilism is the view that both free will and moral responsibility are not compatible with determinism (Clarke, 2003).

Discussions on the forms of libertarianism are broadly segmented as non-causal and causal accounts (Clarke, 2003). The causal accounts of libertarianism are event-causal and agent-causal and they are often identified as agent causal libertarian accounts. It should be noted that "Agent-causal" libertarianism is that an agent possesses much control over his actions and is the substantive cause of decision making. Meanwhile, "Agent Causal" Accounts of Libertarianism involves the causal libertarian accounts that are agent-inclusive in decision-making. Thus, the term agent causal means the process of decision-making involves the agent such that the agent can control the possible result of a decision-making process.

Many of the accounts explicating the decision-making process with some form of indeterminacy divide on the timing of this neuronal

indeterminacy. The Valerian accounts hold that an undetermined act has indeterminacy occurring temporarily before the moment of decision. On the other hand, Non-valerian accounts locate indeterminacy at the moment of decision-making (Dennett, 2003).

The Free Will Problem

The issue of the existence or inexistence of free will is a universal phenomenon. The implications of the problem affect the very nature of our social life. One of the issues that make the free will notion worth discussing is whether one is to be praised or blamed for his actions. This is because our experiences, attitudes, wills, intentions, and perceptions direct our decisions and action. However, philosophers are divided in believing whether these motivations could be externally influenced or not. McKenna & Pereboom (2016, p. 6), a compatibilist and hard determinist respectively, defines free will as "the unique ability of persons to exercise the strongest sense of control over their actions necessary for moral responsibility." Human possession of control over bodily actions is highly doubted, so the contention continues. One of the reasons why some philosophers argue for free will is to defend the feasibility and need for human morality. Individuals can be praised or blamed for their actions if there is a moral responsibility; meanwhile, moral responsibility can be feasible only if agents have control over their actions and are capable of choosing otherwise. However, whether we are free or not is an inevitable conception within one's period of existence. Hence, a conceptual assessment will be feasible given that it is well-grounded in a metaphysical understanding of the problem that helps carve out the issue.

Our beliefs are the foundations upon which we formulate justifications for the notions we have on free will. Free will is a conceptual problem that is captured in the facet of deliberations on the nature of man. Our mortal experiences inspire this segment of internal deliberation by the self. These conceptions, freedom and determinism, are neither objective in nature nor autonomous emergent properties of the mind. In other words, freedom and determinism are not in themselves mind-independent objects (objective) or ideas that subsist on their own, instead, they depend on the body and its mental properties (conceptual autonomy and ontological dependency). So, the conceptions of freedom and determinism have no conceptual and ontological autonomy. The idea of free will is not conceptually autonomous because there cannot be a transcendent self that bears experiences and makes choices without the physical body. Indeed, the mind and body is a requisite for the conceivability of human free will status to be only when a person is with a body and mind. That is to suggest that one can only ponder on whether he is free or not when he or she is alive. I make this claim because to test whether our actions are free or not also assesses whether the motivations for our actions are influenced or self-initiated. But then, actions are physical happenings, and so the conception of free will cannot emerge as a mental state with a transcendental being when no physical interaction has taken place. From this notion, it can be easily inferred that the conception of freedom and determinism owe ontological dependency to the body because significant assessment depends on the examination of human actions (which are physical phenomena).

To begin with the discussions of the issues therein, given that free will and determinism could be held as independently true, could a human being still be morally accountable for his actions? Can an individual be free and determined at the same time? The following sections will engage the feasibility of compatibility or incompatibility of free will and determinism.

The Compatibility Issue

Compatibility in the discourse of free will and determinism gained prominence in the modern period. The viability of compatibility rests on the question: "Is determinism compatible with free will?" The issue of compatibility deserves some attention because if any argument cogently proves that the causally determined world could (to some extent) accommodate free will, it will automatically defeat the idea that determinism precludes free will. In other words, determinism will not render the conception of free will absurd. Therefore, compatibility clears free will of any threat by determinism.

Philosophers contend on the feasibility of free will and determinism's compatibility. A case of such contention is the one between Peter Strawson and Gallen Strawson. Gallen Strawson holds a view contrary to Peter Strawson's (a compatibilist) on the subject of compatibility because he, Galen, owes to an incompatibilist tradition. The line separating both views does not border on interests in human attitudes, feelings, praise, blame, and punishment. Gallen holds that strong free will (partnered with ultimate responsibility) is impossible whether determinism is true or false (Strawson, 1986), while Peter maintained that such feelings and an accompanying moral responsibility would not disappear given determinism were true (Strawson,

1962). Gallen holds that free will is neither compatible with determinism or indeterminism. Given the possibility of compatibility of determinism with free will and responsibility, Peter classifies the group of philosophers sharing such belief on the compatibility issue as optimists. While, pessimists are the philosophers believing that if determinism were true, then moral obligation and responsibility will not persist. Sceptics of human freedom like Gallen argue that free will and moral responsibility are not real.

Libertarianism

Libertarianism comprises two basic positions, classical free will and incompatibilism. The conventional argument of free will popularised by the classic libertarians holds that human beings are free beings and capable of decision making. Libertarian incompatibilists argue differently from classic libertarians by denying any compatibility between free will and determinism. An agent is required to have the ability to involve in the decision-making process and should be able to do otherwise to be libertarian-free. Mark Balaguer attempts to define libertarian free will as:

> the view that human beings possess L-freedom, where a person is *L-free* if and only if she makes at least some decisions that are such that (a) they are both undetermined and appropriately nonrandom, and (b) the indeterminacy is relevant to the appropriate nonrandomness in the sense that it *generates* the nonrandomness, or *procures* it, or *enhances* it, or *increases* it, or something along these lines (Balaguer, 2010, pp. 65-66).

Balaguer's definition of libertarian free will suggests that the individual is free and devoid of any fixated pattern or predictable line of choices. The agent goes through a spontaneous process of decision-making, of which the agent

yields control. Mainstream libertarianism argues that the self has free will as a result of our actions originating from the beliefs, intentions and desires of our will.

However, Randolph Clarke outlines a criterion to mark out an adequate account for libertarian free will. In Clarke's theoretical assessment for a conceptually adequate account of libertarianism, the account needs to satisfy four requirements (Clarke, 2003). The first of the requirements states that an appropriate account should present an intelligible account of the relevant phenomena. The second requirement has it that an adequate account ought to require things that are possible and logically sound. The third requirement is that an appropriate account necessarily has to provide us with a characterization of something that satisfies all the needs the account require to suffice the existence of a free will. Finally, the fourth requirement states that the conceptual assessment requires an indeterminacy that should not be superfluous. In the fourth requirement, the needed indeterminism ought to be of a kind and located such that, were it to exist, it would be unique in differentiating whether free will is tenable or not. Despite the numerous attempts to develop an adequate account of libertarian free will, most of the available accounts may satisfy the first and second criteria. But they may fail at providing a sufficient account of free will and proffering the appropriate kind of indeterminism needed. The discussion in the continuing paragraphs will be on the various libertarian accounts, beginning with the non-causal accounts then the causal accounts (event-causal and agent-causal libertarianism).

Non-causal Libertarian Accounts or Simple Indeterminists Theories (as titled by Robert Kane) argues that humans freely act on the central notion that our actions are uncaused and devoid of any internal causal structure. Unlike other libertarian accounts, the non-causal account does not acknowledge any causal system for decision-making. To non-causal libertarians, basic mental operations precede human actions. So, activities like moving your toe is a non-basic action but complex actions that are orchestrated by a basic mental process resulting in certain events that include the moving of the toe. Non-causal libertarians consider volitions as basic actions. These basic actions consist of an individual's will or attempt to move a particular part of the body.

Henri Bergson, one of the earliest proponents of non-causal libertarianism, believes that conscious human agency freely acts without any form of causal restriction or requirement. To him, even though happenings occur within time, human actions are not substantively dependent on time. Bergson's point of the irreducibility of a consciously geared action to a causal process is that this irreducibility will invoke physical concepts that do not apply to the conscious agency, and any possible attempt of reducing conscious actions to a causal process will be a mere metaphorical one (Bergson, 1910). Bergson claims that the mental is *sui generis* and is not subject to scientific theorizing, hence, not causal.

Hugh McCann and Carl Ginet are prominent non-causal libertarians who have attempted to sustain the non-causal libertarian account. Ginet and McCann believe that an event by an agent is a sum of non-basic actions with some internal non-causal features. Ginet (1990, p. 9), in particular, asserts that this inherent feature is an “actish phenomenal quality”. Some intrinsic

intentionality enhances this quality. When it seems to the agent to be immediately producing, making happen, or determining the event that bears this quality, McCann claims an uncaused intrinsic fundamental intention characterises those basic actions. In a decision-making case, McCann (1998, p. 163) asserts that one intends to decide as one willingly does. So, an intention to decide, A is based on one's desire of willing A. Notwithstanding that intentions are intrinsic to decision-making, according to McCann, intending is a case of decision-making, in its very nature - that is being an action the agent plans to perform. Fundamentally, McCann and Ginet are against any causal account of deciding and acting whiles they defend free actions that are spontaneous and aroused by intentions. Also, Ginet and McCann's accounts are non-valerian in nature; they locate indeterminacy that brings up spontaneous options at the moment of choice. An attempt to identify a view as either of the two is to locate the occurrence of indeterminacy in decision-making. The Valerian position assumes the occurrence of indeterminacy is momentarily before the moment of decision. In Chris Franklin's attempt to settle the issue of when indeterminacy occurs, he posits that the right place to situate the occurrence of indeterminism is between the non-actional mental states (potentially leading to actions like desires and beliefs that make up agent's reasons) and, decision and overt actions (Franklin, 2011, p. 202).

The causal libertarian accounts include event-causal libertarianism and agent-causal libertarianism. Even though all libertarian accounts try to bring on board the idea of agent-involvedness, let us explore the idea of agent causation to help differentiate causal accounts from non-causal accounts.

The causal accounts of libertarianism provide a structural account of the happenings that result in free choice. Their arguments maintain that the occurrence in decision-making is procedural and are agent causal. The event and agent accounts are causal because it is, first, presupposed that the account requires agent involvedness in its processes. In the agent causal accounts, agent-involvedness is the notion that agents' desires and intentions have some causal potency in influencing decision-making that results to free actions. Secondly, it should be a causal account (where an antecedent action, which is a cause, will result in a sequential action, an effect). Per these requirements, the two popular causal libertarian accounts (Event-Causal and Agent-Causal Libertarianism) qualify to be agent causal, but the Non-causal libertarian account fails to meet the second requirement.

Event-Causal Libertarianism, as well as Agent-Causal libertarianism, has a causal structure that explicates how human actions are free. Causal indeterminists/Event-causal theorists are, according to O'Connor, those philosophers theorizing that there are agent-involved and agent caused activities that produce undetermined free actions formulated based on reasons (O'Connor, 1995, p. 7). Event causal libertarianism centres on events leading to a free action by an agent. That is, agents involving events such as agents bearing certain desires, beliefs and intentions that cause the movement must be generated in an undetermined way such that the happening of a freely willed act will be the one which is agent-involving and events-caused only by prior events. So, an agent during decision-making will have a desire and belief, followed by an intention at a time and featured with indeterminacy. This form of libertarianism holds no reducibility to the agent but events (Balaguer,

2010). And it is believed that these appropriate events can lead to a morally responsible act.

Two popular Event causal libertarian accounts are that by Mark Balaguer and Robert Kane. In his *Free Will as an Open Scientific Problem*, Balaguer (2010) critically argues for event-causal libertarianism. Balaguer presents a kind of libertarianism with strong arguments that escape any entrapment of inadequacy for a material-immaterial relationship. That is, he subscribes to the thesis that identifies mental events with brain events (mind-brain materialism), thereby arguing that any causation involved in libertarian free will is solely event causation – empirically accountable. Balaguer's causation is aside from any Cartesian doctrine or any doctrine supporting reducibility to agent causation.

In Balaguer's view, most positions in libertarianism argue along the lines of indeterminacy – that there are undetermined multiple possible futures. Indeterminacy is conceptually featured on probabilistic laws even to the most basic level of nature. Balaguer's argument points to the fact that most arguments for free will may have a valid case if they feature the concept of indeterminacy for the agent's decision-making. Notably, Balaguer mentions that there lies a thin line between believing in a position that the whole of nature is indeterministic (indeterminism) and merely believing the feature of indeterminacy as libertarians require. Thus, Balaguer argues to prove an indeterminacy-enhanced appropriate nonrandomness while claiming that appropriate nonrandomness is what makes his account unique, but what makes other libertarian accounts incomplete (Balaguer, 2010, p. 8). Balaguer believes that there is an indeterminacy featuring in the human neuronal state

during decision-making that gives off undetermined possibilities which are not random. This *appropriate nonrandomness* does not take control of decision-making beyond man. Thus, the final decision is not a random given but the agent's choice. Balaguer argues that what burdens Libertarians is a gap between the assumption that human free decisions are undetermined and how the premise leads to a significant gain in appropriate randomness. Even though other accounts may have argued for free will with indeterminacy, the need for an appropriate nonrandomness is argued in a case Balaguer formulated – The Sylvia Case:

> In the Sylvia Case, Martians plant a chip in Sylvia's head, specifically to remote control her choices and actions. A flop to the function of this chip is that environmental noise is sometimes able to garble the signal from the Martian remote control such that at the time that the garbled signal reaches Sylvia's head, it causes her to choose not as the Martians want her to react, but she chooses or acts differently. Whiles in another situation, a specific signal hits Sylvia's head that is partially garbled and causes Sylvia to decide what the Martians remote-controlled her to choose, but this result is notably not causally determined. That is, the somewhat garbled signal might as well have caused her to choose differently (Balaguer, 2010, pp. 7-8).

Balaguer avers that the Sylvia case shows that the ordinary notion of free will may involve indeterminism, but that is controversial. Despite our views on the Sylvia case, it seems to Balaguer that the usual notion of free will does not require some sort of agent-involving nonrandonmess. That means a libertarian free will account that is in a deficit of indeterminism and an agent-

involving nonrandomness will be unappealing. Balaguer premised this notion on the diagnosis of the ordinary notion of the free will of the lack of indeterminacy and its appropriate kind of nonrandomness.

Aside from Balaguer's non-valerian account of event causation, Robert Kane presents a more complex account, a valerian one for that matter. Following the issues in the choice for a particular action, Kane (1996) expresses the idea of the 'effort of the will' as the difficulty to choose in a specific way given counteracting pressures and the results from the agent's motives and character. One has to possess the effort of the will (already characterised with indeterminacy) and sequentially undetermined choice formulated by the effort of the will in a decision-making process.

Kane shows how this indeterminacy occurs with a scenario where:

> An isolated particle approaching an atomic barrier but the particle's ability to penetrate the barrier is undetermined. The state of penetrability is unknown due to its unknown position and momentum whiles making its encroachment. The argument is, given that the choice (to overcome temptation) is likened to the penetrating event, the choice by the particle, one way or the other remains undetermined due to its preceding process and the potentiality of termination in it - meaning, the effort of the will (to overcome temptation) is indeterminate (Kane, 1996, p. 128).

The causal potency of the isolated particle during the decision-making period could be caused by the indeterminacy of the effort of the will. Additionally, Kane cautions readers not to misconstrue the notion that indeterminacy

happens after the effect of the will because they are concurrent – the effort remains indeterminate, while indeterminacy stays as a property of the effort.

Kane's description for a free and morally responsible choice requires the decision to fit the notion that the joint effort and its indeterminacy features indeterminacy as a property of the effort. Also, there ought to be some kind of free choice that is the choice's sufficient cause, ground or explanation. Kane purports that effort of the will from which the decision results are indeterminate, and following that, the decision becomes undetermined, and this secures free will and moral responsibility. According to McKenna and Pereboom (2016, p. 233), one concern for the Valerian type of Libertarianism is that the agent is not in control of this kind of indeterminacy. The freely executed act should have the agent at least some control, but indeterminacy is beyond the agent's control. And this brings us to some of the objections to event-causal libertarianism.

The first objection of the event-causal account is the argument of the diminishing agent by Pereboom (a hard determinist). This objection is an argument showing how the known agent in an event-causal account gradually metamorphoses into a zero referent (no agent to point to or vanishes) at the crucial point decision making needs to be initiated by an agent. The argument is expatiated as follows:

> A deliberative decision-making state has got two sets of motivations for different decisions; moral motivations for deciding 'A' and prudential motivations for deciding 'not-A'. Meanwhile, both motivations have the same weight of influence on the decision to be chosen. Also, the possible causally relevant events that can ensure the

> happening of these decisions are equally possible. And as the possible causally relevant events are unable to initiate a choice, it is requisite for the decision to be made, but there is nobody. This is because, since events only remain causally relevant in event-causal libertarianism, nothing settles the selection of which decision to occur. Surely, it is neither the agent nor anything about the agent that settles the decision, hence, the agent lacks control, one of the basic requirements for moral responsibility (Pereboom, 2014, p. 38).

The agent cannot be morally responsible for decision-making because according to the event-causal libertarian, the agent is not one of the relevant causes for decision-making despite the available motivations. The causal system for decision-making in an event-causal account does not allow the agent in the hotspot to choose. Thereby, the agent not being in control of decision-making.

Another objection to event-causal libertarianism is the luck objection. Luck is portrayed as the only reason for which a subject by accident or chance could end up making a particular decision which he/she supposedly desires or want. Luck could be responsible for such decisions when one reverts the event-causal process. This happens such that a nondeterministically caused action is accounted to have been partially made possible with an agent's input. Meanwhile, the event-causal libertarian considers all causes as event causes (Proceedings, 2014). Thus, in a possible world, a history of action in a nondeterministic way will eventually not point directly to an agent or preclude the notion of an agent as morally responsible for an action.

Identical accounts of the luck objection are made by Haji (2004) and Mele (2006a). In their account, they express a case of free will in an event-causal world (W) where an agent involving event (E) is caused by an agent's decision (D) at a time (T). Notwithstanding the unfolding events, the indeterminacy that characterises D allows the chance of a possible world (W*) before the decision. Following, this possible world (W*) has an account leading to an action with an exact antecedent event to T preceding E's causing D at T in W (but with the omission of D's occurrence). The omission of the occurrence of D in the other possible world (W*) makes D seem not a sufficient condition for event-causal accounts, and it dissociates the agent with moral responsibility. Moreover, the account of another possible event-causal world (W*) connotes an influence of luck in the chain of events (McKenna and Pereboom, 2016, p 237). So, the event-causal account for free will does not generate enhanced control in relation to that available causal determination.

The second causal libertarian account is agent-causal libertarianism. Agent-Causal Libertarianism is self-centred and a substance generated decision-making account of libertarian free will. Its tenets are enshrined in some core metaphysical commitments. Such that it is necessary that the agents possessing free will be a substance of a kind exceptional from the variety of entities whose existence, behaviour and history can be accounted for in event causes. Also, another metaphysical commitment is that the presence of free-agent should not be able to be generated from or reduced to events. One of the requirements is that free agents should be causally efficacious in making

events, precisely actions, by resources that do not include the agents being caused to cause those events (Clarke, 2003).

Agent-causal libertarians argue for (non-event) undetermined decisions and activities initiated by an irreducible substance (a *sui generis*). Also, they share beliefs in agent causation with non-agent-causation libertarians, particularly, causal indeterminist theorists (event-causal libertarianism). Different from event-causal accounts, agent-causal accounts escape the objections levelled against event-causal libertarianism by proposing the best alternative view. This alternative view holds that in decision-making, the agent ought not to be a mere participant, instead, the agent is the substance who possesses the causal power to cause a decision. That is an agent who owns the capacity to cause an intentional mental state to act in the absence of any causal determination and with a requisite control whether to make an event happen or not (O'Connor, 2009).

The insufficiencies inherent in event-causal accounts require modifications for a better account of libertarianism. Some philosophers like Ginet and O'Connor raise critical objections claiming that event-causal accounts cannot present a wholistic account for libertarianism. Ginet and O'Connor's claims are backed with the reason that with the joint concept of the agent causing and event causation as an integrated account, the event-causal argument is insufficient to result in agent causation (Clarke, 2003, p. 145). Hence, it is recommended by other libertarians that modification for a better libertarian free will account will be as follows:

1. Event-causal libertarianism will have to do away with the notion that all causes or events, for another idea that causes of (at least) actions originate from substances.
2. The substance causal account assumed in (1) permits the libertarian to accept the agent herself as the ultimate cause of his actions (rather than his causing being reducible to events taking place in his mind).
3. Finally, for an agency to be fundamental to event-causings, the agent himself will have to be given a reliable account rather than the usual compositional approaches that end up reducing him to the sum of his parts (Proceedings, 2014).

These modifications (which are comfortable for an agent-causal account of libertarianism) make the libertarian account more plausible than the original event-causal argument structure. The implication is that the application of these modifications is to help event-causal libertarianism escape the agent diminishing objection by Pereboom. If these modifications are accepted, the revised position will still be an agent causal one rather than the agent just participating in the causal process, the agent becomes the ultimate cause of the action. The event-causal account displaces its core tenet in the modification process. Event-causal account's evolving into an agent-causal account no longer makes actions reducible to events and overt for empirical enquiry. This required modification is a hard position for the event-causal libertarian to accept. Though some agent causal libertarians who are mostly agent-causal libertarians, suppose that's the best come back for event-causal libertarianism after the 'fatal' objection by Pereboom (2014). On a critical level, it seems the

idea of substance causation saves the causal libertarian position from multiple objections. But, is the idea of an irreducible agent sufficient to make a case?

Substance causation is believed to be that kind of causation that happens when a causal determinate (the originator or initiator of a cause) is believed to be a self-sufficient entity. The entity's sufficiency is such that its sustaining power and causal power is not reducible to anything or any other being than itself (O'Connor, 1996). In substance causation, it is believed that any effect that happens as a result of the actions by an unmoved mover, designated with 'a prerogative power' (Chisholm, 1964, p. 32), should be reducible to the self-initiating substance. The agent-causal libertarians propose a substance causal process from an irreducible agent (a *sui generis*). This irreducible substance is a notion from a Cartesian origin. Hence, the irreducible substance or prime cause could be conceived as the mind, spirit, consciousness or soul. It is from this substance that wills are formulated to cause actions propelled by intentions, desires, beliefs and decisions. Complementing the power to cause is the ability by the substance to control (direct or veto) the outcome of events after the causal chain has been initiated.

Charlie Dunbar Broad (a hard determinist) objects to the validity of substance causation on a metaphysical tangent. He asserts that a caused event will happen at a specific time, the cause that determined the timing itself must be dated, and that dated cause should be an event because only events are dated entities (Broad, 1952). From Broad's objection, the claim that an agent is a substance is not tenable. It is untenable because, in the causal process, all actions from the beginning of the causal chain to the end are events occurring within time. Thus, the agent's being is not excluded in time but

unconditionally timed. Solutions to this objection have been attempted by Lowe (2008).

Lowe (2008) presents a solution to arguments against the insufficiency of substance causation. Lowe argues for a 'Non-Cartesian Self' that has causal power. Thus, causation by a substance is ontologically rudiment. Broad's criticism will not hold any longer. Because the irreducible substance argued by Lowe possesses causal power, and itself is not reducible to an event such as time.

Another issue of interest beyond substance causation is the issue of indeterminacy in agent causation. If the agent is truly in charge of decision-making such that libertarians would want to argue for moral responsibility, then what is the need for indeterminacy?

Agent causation argues for agent-involvedness that could be either a partial or total involvedness. As seen from event-causal libertarianism, the agent is part of the causal process, and the regress of the action is pinned to the first event that starts the causal chain. This is what I call partial 'agent-involvedness'. In event-causal libertarianism, intentions and desires are mental events that happen to our brain and initiates a causal process with the participation of the agent. On the other hand, agent causation with agent-causal libertarianism is conceived as substance causation. This notion of substance causation reduces all actions to a prime cause, the agent, and by this notion, there is total agent-involvedness. In this kind of agent involvedness, the agent is the sole initiator of the action and has control over event – for the action to happen as he pleases or veto it. The test here is whether agent causation will suffice for free will without indeterminacy?

Indeterminacy in libertarian free will is the view that happenings are undetermined and characterised with a chance. It means that before an event occurs, whether an action in the process will result as action A, B, or C is undetermined. Undetermined choices cannot be predicted due to the probabilistic nature of indeterminacy. The availability of indeterminate options is because the indeterminism position holds that given the same past (same deliberations, same beliefs, same thought processes, same motives and desires), there could be different possible outcomes. Most libertarian arguments (Kane, 1996: Clarke: Balaguer, 2010) claim this indeterminacy for the intelligibility of free will.

However, there is the intelligibility problem of free will. The central issue of the intelligibility problem is whether the libertarian incompatibilists' free will requiring ultimate responsibility is feasible and can be reconciled with the modern scientific views of human beings or not (Kane, 2007, p. 23). The issue needs to be discussed because it is difficult to prove the assertion that if a choice is undetermined, then the agent involved is endowed with the ability to choose otherwise. The notion which many libertarians subscribe to is that free choice cannot be determined. So, when an agent is to make a choice, his choice is random and controlled such that it can result in varying possible outcomes given that he is presented with from his past, physical and psychological history up to the time he made a choice. Thus, most libertarians appeal to agent-causation, which does not reduce action to events or mental states but rather a substance.

Causal libertarians infer that since our actions are not determined, the agent makes choices and controls his decisions and the outcome of events.

This kind of agency is to help explain how actions could be initiated with both mental and physical events. However, this explanation requires the postulation of an agency beyond the natural flow of events that cannot credibly point to which decision an agent might take. But, according to Kane, this substance causation which is centred on the human agency ("extra factor strategies" - an 'agent- or immanent cause, a noumenal self, transempirical power centres, nonevent agent causes, prime movers unmoved), has raised some criticism (Kane, 2007, p. 25). Rather than providing a solution to the intelligibility problem, these extra factor strategies breed objection based on mystery or obscurantism or panicky metaphysics. Hence, the notion of agent causation is not compatible with indeterminacy and cannot suffice for free will. And one of the primary reasons is that libertarian incompatibilists oppose determinism in the absence of a valid account for claiming the availability of undetermined multiple choices.

The following paragraphs will make a review of the determinist position, delving into the scientific conception of the world, what it means to be determined and a hard incompatibilist (the determinist account).

Determinism

Determinism is a notion publicised by Laplace asserting that the current state of the world is a consequent of the past and corresponding cause for a future state that will follow. Believing this notion implies accepting its accompanying principles. The first principle is that the present is sufficient to determine the future. Secondly, with perfect knowledge of the present, the future is undoubtedly predictable to the exact. Thirdly, a complete understanding of the present is sufficient for a mental construction of the past.

Finally, the fourth principle holds that there is a single causal chain that began in an infinite past, guiding events or situations into the present and continually extends into the infinite future (Laplace, 1814).

The description above generally introduces determinism, however, there are variations in the concepts of philosophical determinism and scientific determinism. Philosophical determinism holds that the causal nature of happenings authorises predictions. Scientific determinism holds that the deterministic nature that characterises the nature of the universe does not include the predictability of their precision or outcomes (Martin, 2009). Thus, the concept of philosophical determinism, with its causal ties, has in it some likely inherent predictions. And these predictions are likely due to regularity associated predictions. On the other hand, scientific determinism denies any association with predictability and precision.

Determinism is discussed in fields like religion, philosophy, law and many others. To express something as deterministic means that the thing is a spatiotemporal being that bears one possible future. As a worldview, the determinist thesis could be defined as the notion that the world is bound to have only one physically possible future. To illustrate, let us consider the case that there is a canon bomb revolver with a canal of 12.2cm as diameter length. With every bout containing eight cannonballs (given that every cannonball in about has a diameter of 12cm), it is only possible that the cannon revolver will shoot just a cannonball at a time. Thus, in the deterministic world, knowing the past and the present, one can credibly predict a future.

In another instance, a picture of a deterministic world looks like the ensuing case. If a member of a marketing firm fails to show up for a

presentation at a trade fair, the absent person's past experiences, state of mind during the time of decision making has a direct implication on the results of her corresponding action such that there is one potential future or following events. To mean the world is deterministic is to capture all experiences (including behavioural attitudes and mental states) resulting in a particular possible future.

McKennna and Pereboom (2016) add to the determinist thesis asserting that it is a general thesis applying to the aspects of the natural order in any way. The amount of moisture in your eyes, the length of each hair on your head, and each state of your body at the moment are inclusively considered in accounting for the processes of action of determinism. Thus, the result of an action is the only result that can physically occur.

Sceptics broach by claiming that a definition of determinism is just a mere characterization of what things ought to be like, given that things were deterministic. That is, this simple characterization does not follow that the universe is deterministic (Fischer et al., 2007). Our conception of how determinism is does not point to its existence in the universe. However, an idea of such a characteristic makes us merely aware of what a deterministic act will result in. According to Fischer et al., whether determinism remains a belief or not (excluding its application in the world), there are important reasons to deliberate on the compatibility of free will and determinism.

Broadly, the determinism thesis has its implications on the free will debate. Could it be true that all candidates of free actions are determined? Is/Are there some form of control(s) beyond the agent's control or beyond the agent's causal reach?

In exploring the versions of determinism, it is important to keep in mind the general thesis of philosophical determinism for a better understanding. The discussion will include; theological determinism, physical causal determinism, metaphysical entailment determinism, and causal determinism.

Theological Determinism is the view that God (the highest power of the universe) is responsible for causing all events that occur as he wills it to be. God's causal determination is such that as he determines from his will, it remains physically impossible for any other result to occur than he expects. God is consciously aware of how the world works such that nothing happens as a surprise to it. And no different effect can happen aside from what he expects because he has total control over the physical world, and what he causes happens. For instance, if it is God's will to save Emmanuel from a plane crash, no matter how Emmanuel could plan or organise himself, he cannot die from the plane crash. Other philosophers refer to this version of determinism as Fatalism – that we are eternally doomed to the life God has destined for us.

Physical Causal Determinism is a version of determinism conceived to be that all events are consequents of a physical cause, so it is untenable to conceive of a physical cause without the following event. But this view of causal determinism had to be modified as the understanding of the world evolved. The development of quantum mechanics made researchers realise that not all causes could potentially result in an effect. For example, a machine that calculates causal potency would let us understand that some causal powers are very minute and insignificant such that one may perceive as if

these minute causes do not exist at all. The development in quantum mechanics has exposed philosophers and scientists to a fundamental indeterministic causal relation that focuses on the probability of an effect occurring after a cause rather than stipulating its occurrence based on credibility. Thus, the modified position holds that a physical cause causally necessitates every event. And this reformulation shows a logical consequence in a deductive manner. Such causal relation is what most neuroscientists project as neurobiological determinism. Thus, since the brain is the seat of consciousness, all the activities that are consciously possible are reducible to the brain.

The next version of determinism is metaphysical entailment determinism. The kind of controversies and sceptical notions (on the existence of causation) on causation by philosophers have made some philosophers abandon causation for metaphysical entailment determinism. This form of determinism makes an account of the processes of how things occur without any reference to causation. It works with the condition that if 'a' and 'b' are propositions that inform the state of the world during specific instants, then the conjunction of 'a' with any proposition expressing the totality of the laws of nature entails the proposition 'b' (van Inwagen, 1983). With this version of determinism, propositions a and b with both contents help us understand the world. Hence, their presence in the equation are requirements for understanding the entirety of the laws of nature. Such that given that 'a' is true, conjunction with any other proposition should entail 'b' being true. This logical relation of entailment is what ensures that only one future is physically possible because the condition expresses the world as it should be at a time.

According to McKenna & Pereboom (2016), though metaphysical entailment determinism might be an adequate account for determinism, the theory is not an intuitive means to address the numerous issues in the free will debate. This theory includes other crucial metaphysical issues viz; the notion of the entire state of the world during a time, that the subject should be apprehended to specify "the state" are all and only the temporally non-relational facts, and the notion of a law of nature. The more reason why it is not engaged in the free will debate is that this version of determinism does not temporarily privilege the direction of past to future, the theory is neutral on this issue. Meanwhile, to engage in the free will debate, it is feasible to assume that a person in a present state is not any free than a person assuming his past different from what it is.

From the versions of determinism, McKenna & Pereboom (2016) think determinism should express the simple thought that given the past and those laws, there is only one possible future. And they define determinism as, "Facts about the remote past in conjunction with the laws of nature entail that there is only one unique future."

Causal Determinism is a form of determinism that holds that necessarily, any action is consequent to an earlier or initiating event. This kind of determinism means that any event that we observe is an effect of a particular cause. This assertion leads to an infinite regress of all events to a prime cause. Kane cites Sobel in defining causal determination as to the case that "every event has a cause, that is, an event takes place at some antecedent time or times" (Kane, 2012, p. 102).

The notion of determinism is not strange or a ridiculous one, but it remains the philosophers' job to pass judgement on the veracity of this notion.

To some, it could be conceptualised as an ordinary idea in human life, but is determinism one of the quintessential elements of the world? Is determinism in the world?

Whether determinism is in the world or not is debatable, but undisputedly, some natural factors are constant and act as determinants. These natural constants are guiding principles in this world that remain determinants to other activities because of the dominant power they possess in intercepting the will. Analogously, determinism is nothing than conception as free will is. Determinism remains a philosophical lens with which people get to understand the world and embrace the comfort of it. Determinism is not an object of reality, so individuals either accept or deny it. However, for those who believe in it, their perceptual experiences have made it more evident to their understanding and apparently, they believe determinism is a mechanism that is a feature or principle for the way the world works. It is essential to note the difference that having natural constants (like gravity, gradient, magnetic fields) in the world does not imply that determinism is in the world or the world is determined.

The chapter has significantly clarified the central positions on the free will debate (libertarianism and determinism). The compatibilist and incompatibilist accounts that emerged as an attempt to address the compatibility issue of free will is the subject to be engaged in the subsequent discussion.

Compatibilism

Most philosophers today vouch for compatibilism as more of them share in the dualist orientation (the belief in both physical and immaterial

reality and their possible interaction). Compatibilism, according to Fischer (2007), is a doctrine conceived that both the notions of freedom and moral responsibility to patch with causal determinism (notably, a kind of causally necessitated event from the past, of which human behaviour is slavish to) in the physical world. One of the tenets of compatibilism is that determinism is more fundamental in the compatibility equation with free will. Since compatibilism does not entail any determinist threat to free will, moral responsibility and agency are allowed in the discussion. So, the idea of praise or blame is permissible because it is presupposed that human will can potentially cause actions and, consequently, one can be judged based on moral responsibility. On the bright side, the compatibilist account saves human moral life, hence, making the account more appealing.

The compatibilists' argument for free will is that the compatibility between human freedom and determinism is true. This idea of "reconciliationism", as Dennett (1984) calls it, is grounded on the assumption that there exists a causal or determinist connection between humans' will and action. And most compatibilists, otherwise known as soft determinists, claim that freedom is depicted as and when we are not caught up with any physical constraints that influence our actions. It is believed that actions have equivalent motivations if they are not physically caused or not caused by chance, and the will is one of these motivations. Defenders of the freedom of the will create an understanding that they seek an unrestricted, unbiased, and uninspired will which is ultimately generated by the agent to cause an action. With the determinists' understanding of free will, it is believed that a self-generated will is a constituent of the causal chain, and if this is true, then we

could claim to be free. The compatibilist will not hesitate to accept the assumption that individual decisions are caused by a chain of events so long as the individual is not physically restricted or influenced.

To the compatibilist, regardless of the point of compatibility, the justification for a person to be considered morally responsible is dependent on the state where his will, for which he acted, is determined by reasons. Notwithstanding the notion that his reasons determine the compatibilists' act to free will, others may be curious to find why isn't compatibility with indeterminism rather than determinism. This quest is to inquire if there could be a kind of compatibilism with indeterminism.

Compatibilists mostly adhere to a notion that guides their claim to determinism. The notion is that if indeterminism is true and human actions were directly caused by chance, there would not have been any moral responsibility. Hence, compatibilists are comfortable with determinism. Compatibilists hold a causal account of the event on the condition that self-initiated will generated from reason, desires and motives are included in the causal chain of events.

Dennett's work titled *Giving Determinists What They Say They Want* discusses the compatibilists' argument for determinism rather than indeterminism. Dennett puts out some thought-provoking questions that inure indeterminism as an inadequate concept for compatibility. The questions bother on issues including:

- Whether one agrees that there is some physical indeterminism in the universe

- If quantum mechanical indeterminacy ordinarily has no observable effect on physical structures, in other words, the determinists try to establish that the world is adequately determined.
- The Intelligible Problem: given that indeterminism only presented to the agent veritable possible alternatives for thought and action, if it did not mar the efficiently determined will in a plausible way if it does not directly cause any action, is such freed and the element of unpredictability acceptable?
- Whether one could agree that the efficiently determined will, making its selection from among such unpredictable thoughts or actions, can be held morally responsible for its choices? (Dennett, 1978).

The compatibilists manoeuvre their path in defence of moral responsibility, thereby declining the possibility of indeterminism. One of the core reasons is the preclusion of moral responsibility by indeterminism. As indeterminism is strongly characterised by chance that is beyond human control, one could not be simultaneously free when moral responsibility depends on the agent's ability to consider other options in decision making.

Arguably, I opine that there is some form of indeterminacy in the world because determinism does not acknowledge certain realities are attached with events. Precisely, according to Martin (2009), determinism is inefficient in offering a reverse account into the past of the process of radioactive decay, but then the probability equation of quantum mechanics, which is based on indeterminism, rather provides an accurate account. However, there are some views on incompatibilism, and they are that of Dennett and Fischer. Interestingly, Dennett does not totally abandon indeterminism but claims that

the process of decision-making features some form of indeterminacy like that of the libertarians.

Defending free will, Dennett argues for a Valerian model of decision making. The Valerian model is the concept that indeterminacy occurs before decision-making. In decision-making, as accounted by Dennett (2003), there is an undetermined choice coupled with this indeterminacy earlier on. This state of uncertainty and chance presents alternative production possibilities that are guided by determinism to finalise a decision.

In *Brainstorms*, Dennett makes an account of how the decision-making process occurs. In his view, we are sometimes presented with a degree of undetermined series of considerations produced by a consideration-generator mechanism during a crucial decision-making time. Among these considerations present to us are some of which may be outrightly side-lined because they are irrelevant in that circumstance (consciously or unconsciously). The remaining considerations available to the agent constitutes a reasoning process. Reasonably enough, the available considerations majorly serve as predictors and explicators of individuals' final decision (Dennett, 1978, p. 295).

Dennett claims his account of free will explained in the decision-making procedure, for some reasons, is instead what the libertarians sought. Dennett (1978) holds that this free will account will be the appropriate account libertarians try to articulate. His point is that selecting, rejecting, and weighing considerations in an intelligent manner is remarkably unique with the feature of intelligence. Also, this account puts indeterminacy in the appropriate place for the libertarian. And from the biological engineering view (inspired by

Dennett's interest in human biological makeup), Dennett further argues that it is more efficient and rational (in the end) that decisions should happen this way. Another reason that supports Dennett's claims that the model provides some account of our important intuition, maintaining that we are the authors of our moral decisions. The last reason that strengthens Dennett's case is that the model he postulates points to the multiplicity of decisions that surround our moral decisions and further point to the processes in several instances of our ultimate decision as to find the appropriate way to act (Dennett, 1978, pp. 295-7). Thus, Dennett's account may be more appealing and better than the libertarian accounts, but I do not claim that it may not be marred with any inconsistency or criticism.

The second compatibilist to be discussed is John Martin Fischer, but he prefers to be known as a semicompatibilist because he particularly conceives of free will. The semi-compatibilist posits the idea that moral responsibility and determinism are compatible, despite free will being compatible or not (Fischer, 2007).

Fischer maintains that our freedom is dependent on the notion of moral responsibility. That means humans require the "control condition" to validate moral responsibility. According to Fischer, it is the case that some philosophers do not differentiate between freedom and moral responsibility (Fischer, 2005a). And the reason for Fischer's claim is that when some philosophers attempt to answer the question of free will and moral responsibility, they begin by tackling arguments on moral responsibility before making a return to begin analysis on the notion of free will. Fischer states that the conception of freedom is not independent of the analysis of moral

responsibility. By placing moral responsibility first, these philosophers consider freedom to be whatever conditions involved in selecting and acting in a manner leading to moral responsibility.

Arguably, there is a similarity between Fischer's semi-compatibilist view and Clarke's (2003) idea of narrow incompatibilism (the belief that free will is incompatible with determinism, but moral responsibility and determinism are compatible). The point of similarity here is that both accounts (the semi-compatibilist and the narrow incompatibilism) accept determinism as true while acknowledging its harmony with moral responsibility. Rather, while semicompatibilists claim that free will may or may not be incompatible with determinism, narrow incompatibilism is certain with free will's incompatibility with determinism. Semi-compatibilists are stuck with an agnostic position on free will and argue that moral responsibility is possible even when determinism is asserted as a truism.

There is an issue of contention between Dennett and Fischer. It started as Fischer critiqued Dennett for not making any attempt to reply to the main argument of the incompatibilist thesis (the consequence argument). The consequence argument has it that happenings of the present are consequents of the past, hence, the future will also be a consequent of the present. However, from our discussion on Dennett and Fischer, fundamentally, both agree that moral responsibility is possible, but their views diverge on the issue of compatibility between free will and responsibility. While Dennett maintains that free will and determinism are compatible, Fischer disregards free will and does not appeal to its compatibility with determinism.

Dennett (2005) claims there are many versions of the consequence argument and that he (Dennett) could not respond to all. Meanwhile, a co-authored book chapter by Taylor and Dennett (2001) presented a defence to the traditional version of compatibilism and explored the notions of possibility and causality. This line of argument was motivated by the view that incompatibilism, the belief that free will is incompatible with determinism, subsists on misconceptions of the concepts of causality and possibility.

The dynamism here, on the issue of causality and possibility is that given that determinism is true, compatibilists' notion of possibility and causality permits agents to claim that "I could have done otherwise". Meanwhile, the claim will be false considering the incompatibilists' conception of possibility (requiring that, given the exact past, something could have happened).

Notwithstanding the dynamism presented from both views, that Fischer requires Dennett to tackle a particular Consequence Argument (Basic Argument). Fischer's argument holds that given that determinism is true, antecedent happenings to one's birth and other incidents after one's birth are all consequences of natural laws (Fischer, 2003). Then it follows that occurrences are not dependent on or up to us.

In his review of Dennett's *Freedom Evolves*, Fischer (2003) claims that the consequent argument rather gives us good reasons to reject the existence of free will on the establishment that determinism is true. In Fischer's view, the nature of determinism to preclude free will is the convincing assertion that may have led Dennett to avoid a good attempt at the consequent argument. To Fischer, considering the natural fixed laws, if the world is determined, then an

agent who has within his power to carry out an act will do so as an extension of the actual past (Fischer, 2005b, p. 432). In other words, holding determinism as true, with an unchangeable past, there is only one continuous flow of events that is bound by fixed natural laws. Thus, if determinism were true, there would not have been a world with a multiplicity of options – we could not have done otherwise.

In his reply to Fischer's defence to the consequent argument, Dennett (2005) clarifies that it is quite impossible to dismiss the consequent argument, but he (Dennett) simply rejects those consequent arguments with inadequate concepts on causality. With relevance to the argument Fischer brings on board, Dennett does not accept the fixity principle Fisher locates in nature (as part of the natural laws). The allowance of the fixity principle implies that the flow of events from the past is what is directly passed on to the last of our electrons. Dennett rejects this principle because it is an unmotivated insistence (Dennett, 2005, p. 454).

The issue remains a matter of disagreement for none, neither Dennett nor Fischer, is right. But it is from different perspectives they conceive of the intelligibility of free will concerning the consequence argument. At this point, let us zoom in on other accounts that hold that human actions are up to us and that we can do otherwise.

Incompatibilism

As there are compatibilist philosophers who believe in the chemistry of free will and determinism as a remedy to the free will debate, there are philosophers who also disagree with any compatibility between free will and determinism. The argument in favour of incompatibilism has two premises

pointing to two groups of incompatibilists. One of the premises is that "The existence of alternative possibilities (the agents' power to do otherwise) is a necessary condition for acting freely, or acting of one's own free will." The second premise reads, "Determinism is not compatible with alternative possibilities (it precludes the power to do otherwise)." From these premises, the resulting conclusion is that acting on one's free will is not compatible with determinism (Kane, 2012, p. 20). However, constituting this argument are two groups of philosophers; libertarian incompatibilists and hard incompatibilists.

Libertarian incompatibilists such as Kane falsify any compatible relationship between free will and determinism. They primarily uphold that the availability of alternative possibilities facilitates agent to be able to execute freely willed activities. For instance, Kane accounts that the agent in many situations is bothered with moral conflicts. These moral conflicts are due to conflicting decisions from varying motivations. According to Kane (1996, p. 74), agents either act with motivations either from the effort of the will or moral requirements. The actions produced by the effort of the will he calls self-forming action (SFA) whiles. This suggests that the self-forming actions genuinely caused by the agent, and they come with several competing reasons as motivations to this action. Broadly, Kane asserts that for one to satisfy the condition for moral responsibility, it is required that the agent be ultimately responsible. That means no other causa or thing should be responsible for the agent's action but the agent himself (p. 35). Conclusively, Kane's account for free will is not compatible with determinism. Taking into consideration the fact that as the condition before decision-making presents to the agent some alternative possibilities and the requirement for the agent to be ultimately

responsible for their actions, Kane's conception of free will is an incompatibilist one.

The second premise of the incompatibilist argument is backed by determinist philosophers arguing for hard incompatibilism. Hard Incompatibilists argue against alternative possibilities because the notion of an agent being able to choose a different path to action is the hope of many free will arguments (from both libertarians and compatibilists). Hard determinism traditionally holds the argument that if determinism is proven true (of which they think it is), then there is no free will.

Hard Incompatibilists argue against alternative possibilities because the notion of an agent being able to choose a different path to action is the hope of many free will arguments (from both libertarians and compatibilists). The argument is as follows:

1. For one to act freely, it is requisite for there to be alternative possibilities (an agent's power to do otherwise);
2. Determinism precludes the power to do otherwise; hence, it is not compatible with alternative possibilities (Kane, 2012, p. 9).

This second premise of the incompatibilist argument denies any notion of free will by libertarians and compatibilists. The second premise talks about determinism precluding the ability to do otherwise. The Consequence Argument, by van Inwagen (1983), is the determinist argument for incompatibility.

The classic version of the consequent argument by van Inwagen holds that:

Given that determinism is true, then human acts are consequences of natural laws and events during the remote past. Nonetheless, it is not up to us the

occurrences before our birth; and neither is it up to us what makes up the laws of nature. Thus, the consequences of these happenings (including our current acts) are not up to us (van Inwagen, 1983, p. 16).

The implication of this consequence argument is clearly outlined that our presence in time can in no way alter what the past holds or the laws of nature. Similarly, if determinism is true, the happenings (the past) before our birth and the laws of nature wholly entail our current actions. Thus, there is less we can do to change what our current state is. Upon these established notions, if determinism were true, we could not have had the ability to choose otherwise.

Free Will and Modern Science

The world today is more appreciable of knowledge backed by scientific works or empirical truth. This conception of any workable standard is in line with Karl Popper's falsificationism - that for any theory to be workable, it needs to be testable and must have passed a falsification process. The argument of free will in contemporary times has gained popularity beyond metaphysical debates. Rather, free will is thoroughly examined by neuroscientist and psychologists (Nahmias, 2002; Mele, 2008; McKenna and Pereboom, 2016). The examinations by the neuroscientists and psychologists are dominating because they are compelling. These researchers are faithful adherents to a belief that the human person is fundamentally physical, and even those who permit the existence of a mental self-attribute the mental self to be of a property of the body. Thus, to these researchers, knowing the person stems from knowing the body first. So, while the neuroscientists examine neuronal activities and their limitations, psychologists examine the cognitive limitations of human freedom. These works include researchers such as

Benjamin Libet and Daniel Wegner, whose works seem to threaten the conventional notion of free will. The pool of evidence being stored is gaining more attention and creating some threat for free will. Thus, Nahmias mentions the need for philosophers to respond to the claims made by these researchers.

Some philosophers have attempted some response neuroscientific and psychologist's works on free will. However, amidst these attempts, there has not been a central work on the theses of Libet and Wegner. Philosophical attempts to respond to these researchers have not been mutually made, constituting Libet and Wegner only. These attempts are either individual assessments on Libet alone or Wegner alone. Works that cite them simultaneously do so, along with other psychologists and neuroscientists. Mele (2008) mentions the pool of evidence by neuroscientists and psychologists and attempts a response in the next calendar year with his book titled *Effective Intentions*. In the following paragraphs, the review will entail the philosopher's interests in tackling the claims of Libet and Wegner. By this, I seek to establish that whiles Mele remains the philosopher to have attempted a critical study on Libet and Wegner, Mele does this by focusing his analysis on intentions. Rather, in this study, I attempt a respond by examining their claims based on initiation and control.

Philosophers that have expressed concern about Libet and Wegner's works include Balaguer, Kane, Baggini, Nahmias, Mele and Dennett. Baggini (2015) expresses the neuroscientific joy to have a line of evidence that seem to launch a threat on the existence of free will, and he presents some other experiments in neuroscience that emerge from Libet's experiment. Libet's uneasiness to accept that his experimental results is due to the threat on free

will, of which Baggini alarms the philosophers to respond. Kane (1996) tries to incorporate Libet's experiment into his concept of SFW. Thereby not denying the experimental result, which does not yet prove the inexistence of free will, rather, Kane tries to congruent his theory and Libet's experimental result. Balaguer (2010), on the other hand, attempts a defence for libertarian free will due to the seeming threat of Libet's argument. Hence, Balaguer, due to his scientific approach to free will, tries to cohere Libet's experiment with the case of event-causal libertarianism. Nahmias (2002) writes on the epiphenomenal claims of Wegner and its appropriateness. However, Nahmias acknowledges Libet's work as the foundational justification to Wegner's claim of the illusion of the will. Mele (2009) critically examines Libet and Wegner's by particularly defending the effectiveness of intention in manifesting through a causal process. Mele's analysis was centrally on intentions. Also, Dennett (2003) writes on both Libet and Wegner. Dennett, however, finds his views very identical to that of Libet and Wegner. Libet's findings interest him but totally agrees with Wegner's claim to the illusion of the conscious will.

Broadly these philosophers and some others have touched on Wegner and Libet in some respects. However, the continuous argument in this study will be a focus on Libet and Wegner on the issue of initiation and control.

Conclusion

The debate on free will remains contentious because there is not a standard (true) account accepting or denying free will. However, its acceptance or denial is dependent on the validity of the various arguments or positions and its suitability with personal beliefs. In this chapter, there were other philosophical positions on the plausibility of free will (such as

illusionism, revisionism and others) that were not discussed because the chapter was shaped to approach the free will discourse by looking at it from the compatibility issue.

The chapter has discussed the common positions in the free will debate by introducing the free will problem with the compatibility issue. Particularly, the discussed items in this chapter include the free will problem and its metaphysics, the compatibility issue, the prime groups that began the free will debate (libertarianism and determinism), and the two groups of respondents to the compatibility issue (compatibilism and incompatibilism).

From the discussion in this chapter, the issue of decision-making is centrally a significant subject to check the veracity of human freedom. So, an examination of the process of decision-making may justify if humans are influenced or not. Popular interest in the compatibilist and causal libertarian accounts have got philosophers investigating what motivates/causes human decisions and how it occurs. For this reason, the next chapter will explore the cognitive neuroscientist and psychologist's investigations and position on the free will issue.

CHAPTER THREE

COGNITIVE NEUROSCIENTIFIC EXPERIMENTS AND THE FREE WILL DEBATE

Introduction

This chapter explores the accounts of cognitive neuroscientists and psychologists on the debate on free will debate. Scholarly works by Benjamin Libet and Daniel Wegner are the focus of this exploration. I commence this chapter by discussing Libet's inspiration and the first model of his (Libet) experiment, then I address Libet's investigation briefly. Before discussing Wegner's work, I show how Libet's work supports Wegner's claims. Finally, the chapter makes a philosophical review of Libet's and Wegner's works.

The Brain Prior to Libet's Experiment

Hans Helmut Kornhuber and Lüder Deecke are credited as the first to have completed a significant time-reversed experiment on the human brain. Their curiosity inspired this ingenuity to know what happens in the human brain before an action takes place. Their innovativeness led them to discover that electric activities occur at a considerable time prior to human action. The electric activity was named readiness potential (RP) but was published as the "*Bereitschaftspotential*" (BP). This view shows that BP is the electrophysiological representation of planning, preparation, and initiation of volitional acts (Kornhuber and Deecke, 1965). To Kornhuber and Deecke, BP occurs because one intends to act. This definition suggests that a freely willed act has brain activities such as this electric potential occurring prior to the action. Therefore, the intention will precede an electric potential. However, a test was required to justify the precision of intention to an electric potential.

In Kornhuber and Deecke's findings, it was evident that the electric activity occurs about 550 milliseconds prior to bodily movements (Kornhuber and Deecke, 1965). Upon this discovery, John Eccles, a neurobiologist, asserts that a person has to be conscious of the intention to act ahead of the readiness potential. So, in the 1980s, this speculative claim became the idea that Libet decided to put to the test. The numerous tests conducted by Libet had results bearing denting implications on the conventional conception of free will. Also, Libet made a popular discovery that we are capable of unconscious decision to act well before we think we have decided to act (Libet, 1999). Libet's discovery means that a brain could initiate action (in an unconscious state) before awareness of the action.

Such notions expressed by Libet in the preceding paragraph make one wonder what goes on in the human brain before an action is initiated. Are our actions spontaneous, or is there an organised structure to initiate and control movements? Is the brain responsible for our actions?

The Neuroscientific Approach to Action

The conception that the mind is distinct from the brain is still a contentious issue. According to studies from Phrenology, scientists believe that the mental faculty is an exact reflection of the brain's compartment. Such that a critical study on the brain reflects the various mental states and their relations (Cieri and Esposito, 2019). This reductionist ideology of identifying mental functions to brain structures, that is, the localisation and reduction of the mind to the brain - was abandoned for a more appealing conceptual study of the time founded by Alexander Luria. Luria's neuropsychology was

initiated with the main aim of denouncing the conception of reductionism in psychology (Luria, 1973).

The coming into force of neuropsychology due to dialectic in the mind-brain studies featured a thin line of difference between psychology and neuroscience. Luria's neuropsychology postulations include other complex mental activities that seem irreducible to the brain (Luria, 1973, p. 12). Hence, there is a known relationship between consciousness and neural networks. However, the studies circulating between neuroscience and psychology, directly or indirectly, articulate a conception that the mind may not be a reflection of brain activities. So that reductionism becomes a redundant thesis. Underlying conceptions like these are somewhat the pillars to the belief that a conscious will has efficacy on the brain states.

Consequently, the position follows that decision-making is initiated by a conscious will and not the brain or supposed readiness potential in the brain. Recall that Libet's findings oppose the concept of attributing causal efficacy to the conscious will. First, an explainable account of a neurological action will be a good foundation for understanding the various experiments in this chapter of the study.

The central nervous system is perceived as part of the biological makeup responsible for bodily movement. An appropriate field of study that can make us understand the inner workings of the brain is neurology. It will be of great help to know how cognitive neuroscientists perceive brain actions and the investigative techniques they use in brain studies. Thus, the ensuing paragraphs will give us an insight into the neuroscientific views of how bodily actions occur. This insight will consider the neuroscientific experiments in this

study and a closer look at the methods used in conducting the various neurological tests.

Over the period, development in neurophysiological works has helped us better understand the activities that occur in our spongy brain cells. The techniques used by neuroscientists to check for neurological representations of initiation to bodily activities include; Regional Cerebral Blood Flow (rCBF) technique, Position Emission Tomography (PET) scan technique, Electroencephalogram (EEG) scan technique, Magnetic Resonance Imaging (MRI) scan technique, Magnetoencephalogram (MEG) scan technique and Functional Magnetic Resonance Imaging (fMRI) scan technique (Libet, 2004, pp. 21-3). These machines study the stimulus reaction in the brain for neuroscientists to make their projections.

The rCBF technique involves measurements and mappings of local changes in radioactivity as a reaction to an injection of a relatively appropriate dose of a radioactive compound into the cerebral blood supply. The PET scan technique involves injecting positron-emitting radioactive substances in a mild form into the bloodstream rather than electromagnetic radiation. A voluminous number of small devices fixed on the scalp function as detectors of the positrons. The EEG scan technique is an electrophysiological process to record electrical activities in the brain, measuring voltage fluctuations from ionic current in the neurons. The MRI scan technique uses strong magnetic fields, magnetic gradients, and radio waves to generate images of the body's organs. It is thereby showing quantitative changes in various atoms (such as oxygen and carbon) associated with the neural functions. The MEG scan technique is a method whereby a small magnetic field is generated by an

electrical current. The fMRI scan technique assesses brain activities by studying changes in blood flow. The fMRI procedure works at a concurrent state of the cerebral blood flow and neuronal activation. Thus, when a brain area is in use, blood flow to that region also increases. Our actions and their occurrence are better understood with the aid of these machines.

The neurophysiologist, Roger Sperry, does not conceive motor cognition's entailment, that is, perception and action, as mutually exclusive. In his view, the two form the underlying logic of the nervous system (Sperry, 1952). Perception and action are interwoven such that action is a means to perception, whiles perception is a means to action. During action and perception, neuronal triggering is enhanced by electric activities that the neurons use to send signals.

Let us deepen our gaze by narrowing into the neuronal signalling activity called action potential. The action potential helps us understand what is meant by the neural structure ranging from action to perception. The action potential, the electric activity in a neuron, is responsible for the sensual signalling awareness from the afferent nervous system all over the body to other connected neurons.

The spongy brain is a network comprising about 86 billion neurons that have their compartments and their functions. Specific to decision-making, interactions with the environment makes one’s body receive sensations with nerve cells connected from all parts of the body (afferent nervous system) to the central nervous system (the brain and the spinal cord). Now the brain, the fundamental part of the central nervous system, is for integration (the mid-state between Sensory Inputs and Motor Output). During integration, the

brain's complex activity is to complete the process of perception and follow with the action process. Thus, the interneurons (association neurons) are responsible for sharing information between the sensory neurons in the Somatosensory Cortex and the motor neurons in the Motor Cortex.

The parietal lobe of the cerebral cortex is in charge of the environment's action and reactions with senses. In the parietal lobe, the Somatosensory cortex allows sensory information into the brain, whiles the motor cortex is in charge of sending instructions to motor nerves (as part of the bodily mechanical process to action). It could be speculated that the point of decision-making, whether to act or not after one becomes conscious of action from the environment, occurs in-between the somatosensory cortex and the motor cortex. Meanwhile, whether decision-making is just a reflex from brain action or the conscious being initiates it is the central issue to be discussed.

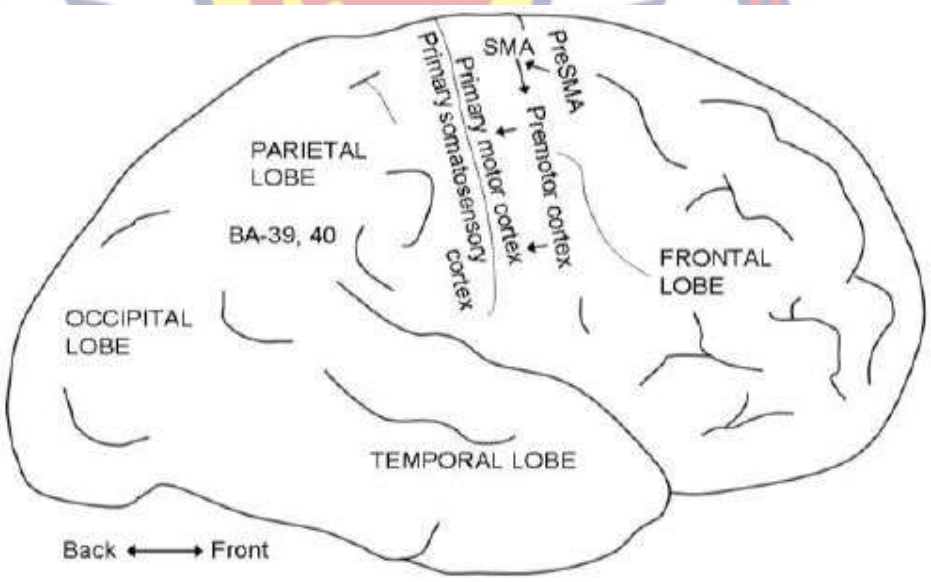

Figure 1: The brain's cerebral cortex, viewed from the right side. SMA: supplementary motor area. BA: Brodmann's area. (Clark, 2013)

Considering human nature, Libet (1999: 9) opines that there has been an explanation gap between the physical phenomena and the subjective phenomena. It is the point of reaction in the brain that the neuroscientist investigates to make judgements on decision-making, whether decisions are self-originated or determined by some factor or undetermined. The positions on this have significant bearings on the conception of free will. The brain's parts responsible for receiving sensory inputs and the motor-sensory are interrogated to test the validity of free will. With a fair understanding of the mechanical procedure for action from a neurological perspective, let us acquaint ourselves with Libet's experiment.

Libet's Experiment

Libet's experiment was motivated by the curiosity to test the veracity of the claim that conscious human decision-making has no initial brain activity prior to an agent's conscious intent to act willingly. In his experiment, Libet (1985) participants were asked to act freely when they intend to flick their wrist (at their timing) and report the precise time with which they became conscious of their decision (to flick their wrist). The participants, per subjective-timing of a spot moving in a circle of an oscilloscope screen, were recorded to have articulated an average timing of intention about 200 milliseconds (W) prior to bodily movement. Aside from the participant's timing, Libet simultaneously recorded electric events with the EEG scan in the brain, capturing the brain state prior to and during the event. The EEG scan (with an active electrode on the participant's scalp) recorded microvolts of electric potential around the Supplementary Motor Area (SMA) about 550

milliseconds prior to the flicking of the wrist and 350 milliseconds prior to participant's intention timing, concurrently (Libet, 2004, pp. 125-8).

There in the brain is an exhibition of a spontaneous process of action before one's awareness. That is to say, the implication of this unaware cerebral process on free will is that on the issue of decision-making and its initiation, the conscious self is not in control of decision-making. It should be noted that Libet made several tests, about forty trials, where he required the participants to do spontaneous acts but not pre-planned acts. To have attained willing and spontaneous acts appropriate for the experiment, the experiment case presented above is what Libet deems reliable amongst the forty trials. What makes the experimental result in the above description appropriate is the type of RPs identified with two groups of acts. The first is the Type I RPs – which has recordings from participants who pre-planned to decide looking at the oscilloscope (though they were advised not to). Moreover, the second is the Type II RPs – which has recordings of participants who spontaneously acted without pre-planning (Libet, 2004: 130). Thus, the RP results presented in the experiment described above are Type II RPs.

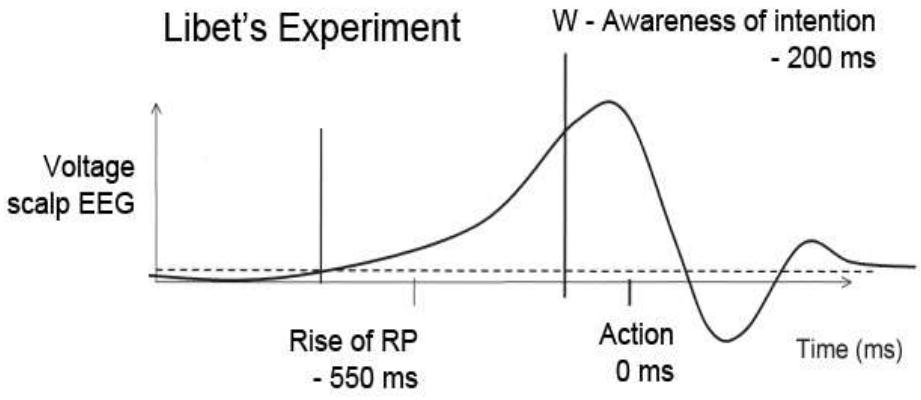

Figure 2. Doyle, B. (www.informationphilosopher.com retrieved on June, 2019)

A Discussion on Libet's Experiment

The brain is either in a conscious or unconscious state. Studies on man's nature show that the brain can operate in both states, either at different times or simultaneously. Since Kornhuber and Deecke's experiment and Libet's experiment are both investigations based on voluntary acts, agent-participation is required in the experiment. Distinct from Kornhuber and Deecke's claim of intention coming ahead of brain action, Libet's discovery shows that the human brain is, somehow, able to initiate, via its mechanistic means, an action prior to the agent's awareness (Libet, 1999).

Libet's evidence shows that the introspective report on awareness by participants was recorded about -200 milliseconds to the action. This evidence implies that individuals can be aware of their intentions and possibly decide to act during -200ms to the action only. Although this discovery is intriguing, Libet's experiment proves this claim with three essential procedures that are simultaneously engaged. These procedures are the recording of the time of awareness from introspective reports of participants, readings from the EEG scan from the scalp of the participants and EMG scan readings focused on muscle movement in the wrist. The RP I group of reports had readiness potentials recorded with the participant's pre-planning intention from -1000ms to about -550ms. The RP II group of reports comprised results from participants who spontaneously acted without pre-plans, so readiness potential was recorded from about -550ms to about -200ms (Libet, 1999: 51).

Libet's discovery is a possible answer to his speculation that there could be unconscious brain activities before voluntary acts. This means that

before one is certain to want to act, there are brain initiated spontaneous activities leading to one's voluntary act.

To make Libet's findings more straightforward for understanding, I present them in an argumentative structure:

1. Evidence from the EEG scan recorded on the supplementary motor area and EMG scan recordings from the wrist and participants' subjective-timing have results showing the occurrence of readiness potential about -350 milliseconds to one's awareness to act.
2. Libet records that the presence of the RP shows the brain's spontaneous initiation of action process in an unconscious state (which will eventually manifest if not curtailed).
3. Since the RP presence is presupposed to precede even simple actions such as flicking the wrist, then, humans are incapable of initiating positive voluntary acts.
4. Therefore, the concept of the conscious will's efficacy in decision-making is not feasible to initiate positive voluntary actions.

The argument above illustrates how Libet reaches the conclusion of denying humans any ability to initiate a positive voluntary action by the conscious will. The first premise points out the various methods Libet employs in his experiment. Using the EEG scan technique to read electric activities in the brain, the EMG scan technique is used to read muscle reaction in the wrist and simultaneously, the claim of awareness by the participants is recorded from the oscilloscope screen. The second premise states Libet's actualisation that the readiness potential automatically initiated in the brain precedes hum an awareness of action. Consequently, premises three and four indicate that with

such simple actions as flicking of the wrist showing unconscious imitation in the brain, according to Libet, humans incapable of initiating positive voluntary actions.

Not to claim that the human person is incapable of voluntary action, Libet's findings make us understand first the limitations with voluntary human acts and, secondly, the antecedent brain activities preceding bodily movement.

However, Libet gives an operational definition of a voluntary act in his experiment to be the function of an individual's subjective will within specific parameters. To Libet, a voluntary act should be produced from within, the subject's initiation to act should not be externally be forced or restricted (directly or indirectly). Also, the individual's subjective conviction to be acting freely such that they can either choose to begin acting or not begin (Libet, 1993, pp. 269-70). Although our bodies sometimes perform spontaneous unconscious activities, they are different from conscious activities. Voluntary actions are conceived to be knowingly done; thus, they are surely conscious activities. On the other hand, an unconscious activity is one that the body is mechanically adjusted to due to its immediacy in our subconscious operations. An example could be the unaware act of breathing or the unintentional act of touching down our foot when waking from the bed. Deecke (2012, p. 410) argues that we are capable of unconscious acts, and we still own those acts because our unconscious state is no different self but one of the constituents of one's self.

Conscious activities are activities that entail one's awareness. So, when a person consciously carries out an act, we mean it was an intentional activity performed by the individual. Conscious activities are not necessarily free

because they could be influenced. Consider the case of a father trying to raise a ransom fund in exchange for his kidnapped daughter. Thus, a willed act is believed to be the kind of activity that is genuinely generated from one's intention, and a typical case is choosing a hairstyle to trim. It is more appropriate to sample the case of willed acts to root out the initiator of decision making, considerably simple acts (Libet, 1993).

From the previous experimental trials by Kornhuber and Deecke (1965), subjects were limited about 6 seconds in choice during the self-paced acts (Libet, 2004, p. 124), so, to help attain a higher feat, Libet opens up the agents' choice to decide to be a spontaneous one. Different from Kornhuber and Deecke's experiment, Libet considers inquiring when the conscious will to act occurred concerning the brain's readiness to act represented by the RP.

The primary request that the various participants were to respond to was to make a voluntary act of flicking their wrist whiles reporting the time they were aware of deciding on the oscilloscope clock. The oscilloscope is just like a standard clock but has a count of 60 seconds with a black spot moving along its circumference like the second hand of a wall clock. The issue here is on voluntary actions. Their experiment could have been organised with involuntary actions, and it will have corresponding results different from Libet's. However, in this case (Libet's experiment), the participants are free to decide when they want to flick their wrist. The alarming results that seem to convey that our mind has long deceived us that we consciously initiate our actions make one question some of the procedures. Such questions may be: how does Libet arrive at his results, why are the EEG and EMG scan technique appropriate, and why the reliance on introspective reports?

Libet claims that the EEG and EMG scan techniques are appropriate for his experiment for a reason. Libet (2004, p. 23) opines that the rCBFs, PET and fMRI scan techniques make the scientist the location in the brain where neuronal activities may be tied to the various mental operations. Moreover, the results produced by these techniques make us oblivious of outcomes such as the local patterns of brain activities, frequencies of firing and other neuronal activities. Insufficiently, the evidence presented does not communicate the timing in the relationship between changes in the nerve cell activities and mental function. So, there is inequality in a relational change in brain activities against the change in conscious awareness of a particular event. Libet further mentions that vital changes in nerve cell activities can occur in milliseconds. The changes in the nerve cells' metabolic energy will take these techniques seconds late to capture these changes in measurable amounts. Hence, the primary quest of Libet to settle whether intention occurs prior to cerebral initiation of a voluntary act or not cannot be settled by these techniques.

At this point, we have a good understanding of why Libet prefers the EEG and EMG scan techniques. However, there is a need to clarify the need for introspective participants' report. In Libet's experiment, the rationale for involving introspective reports is to help check the timing of the act of flicking the wrist. Why does Libet rely on the report by the participants?

Introspective reports by participants are proclaimed conscious subjective experiences. Conscious subjective experience points to that internal feel generated from a person's experiences. This experience only remains transparent to the first person even though it could be reported to another person (Libet, 1993, p. 272). A typical example is whether the pedestrian felt

any pain when the car tyre rode on his shoe. Such incidents bear an introspective feel on the subject's experience such that the subject is the point of verification. Even with neurophysiological machines, readings could show an action potential pointing to a signalling receptor from the afferent nerve cells from the pedestrian's foot. Nevertheless, the machines cannot tell us whether the pedestrian felt the pain. This implies the need for a subjective acclamation of an internal experience.

It is popularly conceived that the reality of conscious experience is tied to one's neuronal makeup because consciousness subsists on the existence and function of a brain (Libet, 2004, p. 19). Libet (1993) admits that the nature of conscious subjective experience makes it inaccessible to a third party. Moreover, this implies that a test on conscious subjective experience will have the subject as the introspective reporter of inner qualitative feels. The observables during the experimental process are outer qualitative experiences, and those are verifiable.

Several researchers hold reluctancy to the usage of introspective reports as scientific proofs due to it being bias-prone and possibly erroneous (Libet, 1993). However, Libet proceeded with his test, including introspective reports, based on an assumption. Libet assumes that any variance developing from an introspective report and external observer's reports could be reduced to an insignificant difference. This reduction could be achieved by opting for more fundamental kind of experiences which do not include emotional content, so, the test results could be reliable.

The covert nature of conscious subjective experience has been an issue worth investigating for the philosopher and the neuroscientist. Investigative

attempts to demystify the relationship between the mind and the brain, according to Libet (2004), will not produce a reliable solution to knowing the mind-brain relationship unless scientists unravel the means by which they can have accurate introspective reports. Libet considers a negative act to withdraw action as the only human possibility for free will. This act of consciously withdrawing from an unconscious initiated action or vetoing on an action timeline is what he calls free won't.

Vetoing

The vetoing concept is the power of decision-making without recourse to any substance. In Libet's experiment, there is a vetoing issue on the course to complete a spontaneous voluntary act. Vetoing opportunity is that one can (with immediacy) decide not to act. This meaning of veto suggests that albeit the already unconsciously initiated spontaneous act yet to outplay, the participant can still decide not to act.

In Libet's experiment, the timing prior to -200ms is no conscious period for the participants. However, from Libet's results, participants averaged conscious awareness about -200ms. According to Libet (2004, p. 137), about 150ms between the period of awareness (about -200ms to action) and -50ms to action is the free period opportunity for an individual to veto an act. Libet asserts that an absence of any veto decision and any plan on what to decide from the onset of Type I RPs (about -1000ms) to -50ms will eventually result in a spontaneous act initiated by the brain (p. 138). Thus, vetoing on the decision timeline remains the only window of opportunity for an individual to perform a free act.

Having acquainted ourselves with Libet's experiment, let us discuss Wegner's work, as Libet's discoveries inspire Wegner's position.

Wegner's Analysis

In Wegner's publication, *The Self is Magic*, he claims that our minds enchant us, and consequently, that makes us feel like we are uncaused causes (Wegner, 2008, p. 226). Broadly speaking, Wegner thinks that the problem of free will is due to a deception of our minds. This deception by the mind, the thought of having a conscious will, obstructs our understanding of the scientific, psychological, neural and social origins of our thoughts and behaviour (p. 226). So, we remain ignorant whiles believing in our minds' deception.

The earlier occurrence of the readiness potential before conscious intention in a voluntary act is a supportive premise to Wegner's argument on assessing free will. Wegner's (1999, p. 481: 2002, p. 54) neural evidence alluding to the position that we are under the illusion of the conscious will is culled from Libet's (1985) work on the timing of the readiness potential. This neural evidence stipulates that the beginning of a voluntary act seems to be an initiated unconscious cerebral process. Meanwhile, it is the conviction of many others that we can will for certain actions to happen in our conscious states.

As conceptualised by many, the conscious will is the conviction that a person believes that their conscious self genuinely and freely causes their actions. However, according to Wegner, the conscious will is nothing but a mere feeling (Wegner, 2002, p. 3). In a more radical sense, to illustrate the non-effect of the conscious will, Wegner avers that human action is a kind of

magic (Wegner, 2002: 2008). That is to say, the claim that human actions are like magic means that those activities which we observe are caused, and it's causal process goes beyond our observation and understanding. Thus, the process of action falls beyond our awareness. Moreover, as we remain oblivious of this process, we see actions simply caused by our will.

Wegner (2002, p. 66) based his claim on a complex causal process in David Hume's argument on causation's non-evidentiality. Particular to bodily actions, there are more complex micro activities that go on in the body's mechanism, which we may be oblivious of or may not understand. That is to say, our minds make us feel we cause things to happen when we are unaware of the causal nature of the human body. "Our actions are an astonishing realm of events that bend to our desires when so much of the world does not" (Wegner, 2008, p. 226). This view suggests that our actions seem to fall in line with what we often wish for, but in an actual sense, the world does not function following what we believe and expect it to be. The actions that follow from what we intend is deceptively thought by our minds to be caused by our will. This conviction is an illusion we live with, caused by our minds.

By Wegner's description, the conscious will is a force of the mind, a title that denotes the causal link between our human minds and actions (Wegner, 2002, p. 3). By this description, Wegner indicates that we wrongly assume that our feel of consciously willing an act is the same as the mechanism responsible for the causation of the action. This belief mars people's thought into the deception of their minds, which can be referred to as an illusion of control. The illusion of control is when people feel that they are doing something when they are not (p. 9). In his example, to illustrate the

illusion of control, Wegner uses a toy store scenario. Wegner says he chanced upon a video game display in a toy store, so he started fiddling the joystick. On the screen, a monkey was jumping over barrels as they rolled in its direction, so, promptly, he involved himself in controlling the monkey to hop until there was a pop-up, “Game Start”, on the screen. For a short moment earlier, he was self-convinced that he was the one in control of the monkey’s movement on the screen (p. 9). This illustration is just a figment of the illusion our minds plague us. Our actions, then, are presented as an initiation by our conscious will.

The belief that our thoughts precede our actions makes people believe that their thought causes their actions. According to Wegner and Wheatly (1999), causal interaction is contentious between the perceived conscious will and the micro-mechanisms synchronising thought to behaviour. Based on a couple of evidence from other works, including Libet (1985), Wegner and Wheatly aver that the experience of conscious will is not a direct indication of a causal relationship between thought and action (Wegner and Wheatly, 1999, p 482).

Theory of Apparent Mental Causation

Wegner’s conception of illusive experience of the will led to the formulation of the Theory of Apparent Mental Causation. The theory of apparent mental causation states that conscious will is experienced when people interpret their thoughts as the cause of their action (Wegner and Wheatly, 1999). The notion that there is some level of uncertainty that makes our causal claims erroneous is a rationale assuring this theory's feasibility. The Humean influence on Wegner makes his (Wegner) claim a contradictory view

from the conventional belief of the will. People usually believe that the will is a causal force that yields human actions.

On the other hand, Wegner, in his analysis, discusses the will, as perceived, as the "interpretation of the apparent link between conscious thoughts that appear in association with action and the nature of observed action" (Wegner, 2002, p. 65). This description suggests that when the nature of action follows precisely what is expected to be caused by the conscious thought, then it is perceived that the will is in causal action. However, to Wegner, our thoughts' causal insufficiency causing actions is due to the unobservable nature of causation. Moreover, this could mean that anything could cause anything. If so, then even our conscious thought and its associated action could be caused by a third variable that may be unknown to us.

Drawing on the assertion that we are oblivious of the causal process involved in the occurrence of our actions, this theory dwells on the claim that consciousness does not know how conscious mental processes operate (Wegner, 2002, p. 67). The unawareness of consciousness of its procedural operations is fascinating. However, Wegner explains by illustrating that when one answers a quick calculation from his mind (like 2 times 4) the answer pops up without any awareness of how it happened. Therefore, the conscious will does not remain an immediate perception of the relation between thought and its resulting act. Instead, the conscious will is a feeling based on the causal inference an individual makes about the data that beholds consciousness. This causal inference falls between a person's thought and the observed act.

Wegner (2002) hypothesises that there is an unconscious path to human action that may be devoid of our awareness. This unconscious path of

causal interactions is what causes both our thoughts and action. The possibility of a third variable in the causal relation between thought and action makes the role of the unconscious path a plausible one. Furthermore, this is based on the claim that there may be or may not be an actual path from our thought to action. Since any causal path between thought and action cannot be perceived (p. 67), it is the perception of an apparent path that generates the experience of will in us. This perception of an apparent causal path to action is a manipulation of the mind. This apparent path of mental causation makes people convinced that our will causes our actions when we experience our conscious intentions resulting in an expected voluntary act.

An individual is sufficiently convinced of the experience of the will on the availability of three conditions; priority, consistency and exclusivity (Wegner and Wheatly, 1999, p. 483). These three factors are necessary to feature with an individual's thought concerning the action for one to bear the experience of the will. In the case where action happens when there is an intention, but no decision has been made yet, there will be the absence of will (example: just when you are about to open a door left ajar, then it opens further, there would not be any feeling of your will causing the opening). When a conscious thought is to cause an expected act but something other than the expected moves, there will be no claims to a wilful act (for example; you open your wardrobe to pick a shirt, and something falls out). Also, the absence of causal connection between thought and action, where there may be external factors instead causing the action, there will be no sense of will (example: trying to close a dry opened tap and suddenly, it starts flowing, one would not perceive any causal feel of the will, p. 483). Thus, the existence of

the perception of apparent mental causation between thought and action needs to happen prior to the action, be consistent with the action, and not be attached to other potential causes.

The priority, consistency and exclusivity principle are requirements for the perception of the experience of the will. The priority principle is expressed along with a certain window of opportunity (Wegner, 2002). There is the perception that the thought ought to come up within a short period before the action occurs. That is the period before the experience of the will that is believed to cause the action (p. 70). This suggests that for the conscious thought to be perceived as the cause of the action, the event cannot start too soon or too late to the timing of the expected effect's occurrence. Thereby, the experience of the agent's perceived will to have a causal relation to the action manifests just before the action. "Thoughts that occur too far in advance of an action are not likely to be seen as the cause of it" (p. 71). Having the thought of giving a colleague a gift and then, you withdraw such thought, however, you eventually find out the next day is the same colleague's birthday and you had to contribute with the group to get her a gift. Such delay in the thought will not make one feel the experience of the will as the cause of the action of gifting her.

The consistency principle has it that actions follow from thoughts, and such causal relation is meaningful for people to have the experience of the will. This principle is validated in apparent mental causation due to the association the potential causes (the thoughts) have with the actions. The relation between thought and action makes people assume consistency. This consistency convinces people to believe their conscious will to be of a causal

potency, thereby making the agents perceive the will's experience. Thought and action are perceived to be related such that it's supposed causal relation makes it semantically impossible not to hypothesise the causal power of thoughts (Wegner, 2002, p. 79). Intentions, beliefs and desires are conceived as constituting the motivations to the conscious will. Thus, as an operative principle in a self-caused act, consistency depends on cognitive process such that thoughts occurring before the act, when compared to the act, are subsequently perceived to be caused. So, when a person does what he thought he is going to do, there will be consistency between thought and action, enhancing the experience of the will (p. 79). Rather, inconsistency will occur when people think of one thing and do otherwise. This does not make their act wilful.

The exclusivity principle is to assure the agent of a self-causal influence. People sometimes tend to ignore a potential cause when other causes are available. When one's thought does not seem to appear as the exclusive cause of one's action, there is no strong feel of a conscious will. Apart from the experience of the conscious will as a potential cause, other potential causes may be our internal and external alternatives to intention (Wegner, 2002). The internal alternatives have causal tendencies laying to the side of one's conscious will, and they have their way somehow, manifesting during the state of uncertainty or spontaneously. The external alternatives to intention may include other people or external forces that impinge on us even when we think of the action in advance. These external alternatives are beyond one's control. Sometimes the external alternatives interfere in one's thought and expected action such that the conscious will is lessened when one

becomes aware of some external force that could also be potential causes to the action.

The three principles (priority, consistency and exclusivity) are the factors that secure an individual's experience of a conscious will. Moreover, by this, the conscious will remains a feeling that is assumed to have a causal influence due to the experience of the will.

In the absence of the experience of the will (which, to Wegner, is an illusory feel of the efficacy of the conscious will), an unconscious process that causes our actions remains. This idea of unconscious causation and control is described as automatism. Automatism is where a person is acting, but there is no feeling of doing (Wegner, 2002, pp. 8, 99). The fundamental understanding to describe automatism is an action devoid of conscious willing. He believes that in our conditional states of acting, certain factors possibly cloud our experience of conscious will, which results in automatism. Some of these factors could be of unconscious causes, intentional causes or external causes. For instance, the individual could be acting and be oblivious of the intention of the act. There is a case where persons are unable to notice the completeness of an action. People could wrongfully assume causal inference due to immersion in thoughts unrelated to exhibiting effect. One can intentionally suppress their thoughts such that they will be blinded to the feel of will. Additionally, the individual could fail to conceive the consistency of tying thoughts and action such that it makes their perception of the action seem unwilled. Also, people sometimes accept suggestions from people and involuntarily act on those suggestions - hypnosis (pp. 131-3). These cases suggest that the absence of the feel of will could be intentional, unconscious or external. Hence, the

suggestion alludes that automatism makes it possible to execute some acts without our conscious will. Automatism's plausibility tends to support the theory of apparent mental causation in the terms that there may be an unconscious system that causes our actions and not the causal inferences we make from the perception of the will.

The entirety of Wegner's position is a strong denial of mental control in the nature of its (the conscious will) capability to cause action. Thus, the conscious will, as we infer as a causal power, is an illusion. The views of Libet and Wegner have much impact on the conception of the freeness of human. Their arguments seem to be convincing that humans may not be free after all.

The Relevance of Libet and Wegner's Work on Free Will

As discussed by Libet and Wegner, the advancement in the free will debate seems to support a sceptical position of free will. Libet's discovery of an unconscious cerebral process has considerable implications on free will. Similarly, Wegner's analysis of the experience of the conscious will also has severe implications on free will.

There are two primary issues found in Libet's and Wegner's contribution to the debate on free will. They are; the issue of initiation and the issue of control. The issue of initiation in the free will debate is to find what or who starts the causal process of action. The solution to this issue, if appropriate or valid, might end the free will debate because the issue of initiation is one of the primary issues in discussions of free will. Unlike the issue of initiation, the issue of control is secondary. The issue of control is contention on whether we actually control the things we believe we are doing.

The dialogue below will help us understand Libet's and Wegner's views on free will with regards to looking at the issue of control and initiation.

Libet: Knock! Knock!

Wegner: Come in, Libet.

Libet: For a second, I thought the door was automatic as it surprisingly opened after I had thought to open it.

Wegner: Do not bother, I was opening it while you were about entering. Well, how have you been?

Libet: Hmm! I have doubts about my feelings; I cannot say whether I am really ok or not. I know my subjective experience could be drawing to my awareness of my immediate feelings. But I could be mistaken too.

Wegner: At least, you are alive.

Libet: Ha-ha.

Wegner: I have also wondered whether we are the ones in control of the things we do when we think we are doing them.

Libet: You mean to say it could be that we are conscious of the control of our bodily actions when, indeed, we are not in control?

Wegner: Exactly!

Libet: Well, I can confirm that there are cerebral activities that occur prior to our intentions to act.

Wegner: Yes, I agree. This unconscious cerebral process, I believe, may be responsible for controlling our actions. I just do not believe that we could be certain with the causal mental process leading to actions. Because, at certain times in our conscious state, we are oblivious of our mental operations. Mental

activities just happen, and we immediately know them, but we do not know how. We are not in control.

Libet: Is that really so?

Wegner: Yes! Our conscious feel of willing has no surety. Our minds put us to the deception that we are free; meanwhile, it is the assumed force of the will that makes us feel like our thoughts produce our actions.

Libet: Wow! That is intriguing. I beg to differ. Even though our voluntary acts are preceded by some unconscious cerebral processes that seem to end in the execution of an act, we can still control the outcome of events. There is a window opportunity that allows the conscious self to veto an act by either continuing the act or not. However, whether we are free or not, we do not know. Nevertheless, I think we should believe ourselves to be free since it will not be permissible to reduce our beingness to a robotic state.

Libet and Wegner remain sceptical of the reality of human free will. Libet has an optimistic attitude to human freedom, and the fact that humans can veto their decision points to a chance of human influence. However, Wegner appears with a pessimistic attitude, where he sees the self to be in a deceptive state with an unaware lack of control.

Wegner's illusory claim on the conscious will points to an epiphenomenal feature of humankind. This is such that the conscious will has no causal potency. While Wegner argues for a theory of apparent mental causation that describes human's deception on their will's causal influence, Libet argues that such a theory on free will should be investigated and passed through a falsification process as recommended by Karl Popper.

The discussions on free will in this chapter by Libet and Wegner has been alarming by far as they contradict the conviction many people hold of their actions (Mele, 2008). Libet's and Wegner's argument intends to expose our lack of initiation and inadequate control often when we strongly believe we act freely. Their remarks, already, seem to deny the conventional notion of free will any plausibility. The next chapter will expose the fallouts of Libet's and Wegner's positions and discuss the philosophical implications of their accounts.

CHAPTER FOUR

A CRITIQUE OF COGNITIVE NEUROSCIENTIFIC ARGUMENTS AGAINST FREE WILL

The cognitive neuroscientists' analyses of free will appear to produce evidence to support the nonexistence of free will. Free will sceptics propel the claim of the nonexistence of free will in modern studies (Gazzinga, 1998: Smilansky, 2000: Pereboom, 2001) by justifying their conclusions upon Libet and Wegner's contributions to the free will debate. Libet proves the limitation in the brain's activities by showing the pre-occurrence of the readiness potential about -500ms to the awareness of a voluntary act. Wegner's claim to a deception of the mind illustrates the cognitive limitation we have in performing free acts. This deception makes us feel our will has causal potency on our actions. However, it appears that their arguments are marred with some methodological errors.

The objections to be mounted against Libet's and Wegner's argument include the Husserlian objection, the naturalistic fallacy, and the vague and equivocal objections. The Husserlian objection is a critical stand against the scientific community and its search for truth. Husserl disagrees that there could ever be any accurate scientific truth as genuine as the reality itself. That is to say, no matter how accurate a scientific process may be projected to be, there is no way that the scientific community can observe a reality devoid of human biases (Nietzsche, 1967; Husserl, 1970). This phenomenological objection to objective scientific knowledge makes us understand that the nature of the thing in itself is beyond our physical grasp. Hence, for scientists to study such object, they employ their perceptual abilities in their studies,

which eventually results in various human biases. The Humean version of the naturalistic fallacy is assistive in outlining an objection to Libet and Wegner. Hume's naturalistic fallacy features an is-ought fallacy. For the vague and equivocal cases, certain concepts and terminologies presented in Libet's and Wegner's arguments are vague and put readers in a situation of not having a clear understanding of the concept in discussion. In other cases, such unclear meanings result from multiple usability of particular words to cause equivocal errors. In the subsequent paragraphs, I have discussed how this naturalistic fallacy features in both Libet's and Wegner's works. Moreover, I will discuss the fallacy of hasty generalisation committed by Libet.

Libet factualises his belief that readiness potential precedes the will. He arrives at this conclusion after his experiment proves the occurrence of the readiness potential prior to the participants' call of awareness. Moreover, Wegner concludes on the inefficiency of the will after his analysis, which was premised on the discovery of Libet. Wegner believes that the conscious will is an illusory feel and unable to cause the body to act. Thus, both claims by Libet and Wegner have implications on the concept of free will. Despite the possible implications, the consequent discussions will feature as a critique of Libet's and Wegner's positions.

The Husserlian Objection

The conclusions of both Libet and Wegner are centred on observations. In the case of Libet, these empirical studies involved the recording of readings from an EEG and EMG scan and recordings from participants' responses. Also, Wegner used a theory based on experimentation that studied human actions and drew conclusions that infer the conscious will's incapability of

causing any effect in the brain or any part of the body such that it will result in action.

The Husserlian tradition makes us understand, from a realist position, that there exists a world out there that its ontology is not contingent on conscious awareness. However, our conscious awareness through our perceptual abilities helps us bridge the epistemic gap between the object out there and our existence. According to Husserl (1970), despite our epistemological ability to know the object out there, the conception of the object out there is not identical with the object itself. No matter the effort we put in to know something, there remains a specific transcendental part of the thing that is either covert to our knowledge, or our studies are not yet there to uncover such features of the object. An example could be the primary substance that sustains the existing object in various forms of reality. Such detail of an object seems perpetually hidden from the knowledge of humankind. In our perceptual process to acquaint with the object, several factors add to make our perceptions of the object out there relative. It will be an observable truth for three people to affirm the identification of furniture as a chair, but other descriptions of the chair that make up the chair may not be the same as asserted by all three people. Some may differ their description with variance in colour identification, height, comfortability, quality and others. Such variations may be influenced by unaware factors, including posture, size, position, and time among others. This is to say what people collectively observe is not conceptualised the same way. People tend to conceptualise things differently, and such conceptions are not verifiable by another person because their mental realities are not physical realities.

Sometimes, people can conceptualise a more accurate nature of how a thing is but fail to communicate their conception. The scientific arena is no exception to these anomalies. Measurement values and other scientific observations are not as accurate as of the thing in its actual self.

In this study, both Libet and Wegner engage in experimental processes that premise their claims. Libet tests on the presence of readiness potentials (RP), its timing and efficacy during voluntary acts, while Wegner formulates the theory of apparent mental causation – in an attempt to establish our ignorance of an unconscious system responsible for our actions and not the conscious will.

Let us put forward the fact that some values determined in Libet's experiment are not accurate and precise, hence, the rationale behind the usage of ranges when measuring and not specific values. The complex nature of human makes it quite problematic to make inferences that reflect precisely the human state of nature. Even then, I identify two issues in Libet's experiment that make his experiment prone to erroneous results. The first is the inaccuracy of the participants' subjective reports, and the second is the identification and purpose of RPs. Both issues bother on cases that deal with conscious experiences that are covert to the third person's knowledge unless with the participant's aid (on subjective report of awareness) or the aid of a machine's readings by electrodes (on the reading of RPs).

The participants' subjective reports were among the three key sources of information (aside the RP recordings from the electrodes and the EMG recordings from the wrist muscle) during Libet's study. The significance of the subjective reports of awareness can be traced to the unexpected change of

results as some people spontaneously acted and others pre-planned when to act. However, there is a chance of having different results than the actual if some micro-seconds are lost by the participants' failure to capture the timing and report it as it is. Per the constant flow of time, I cannot entirely agree that the oscilloscope screen time was captured as it was in exactness. That is to say, at the period that the participant realised that they were aware of their decision, the state of realizability happened at a spot that might not have been accurately captured. The participants were to state precisely the point in time when the self initially realised their awareness to act to have a more accurate report of the commencement of the state of awareness. I think this period's reporting might have captured some time lapses that will not make an accurate presentation of the commencement of conscious awareness as Libet requested of them (the participants).

In addition, I do not believe a dissociated self in the body as Libet's request may imply. Libet's request to the participants was to report individual relative times when conscious awareness of decision-making commences. This nature of demand, as I comprehend, is to make them stay consciously alert, monitoring their unconscious selves till the point when the unconscious self (the unconscious cerebral process) is coupled with a window opportunity (veto) to allow the conscious self to act. The demands of this exercise are counter-intuitive as it requires one to be aware to understudy their unawareness. For the conscious self to monitor the unconscious self is as though to be in a room and be absent simultaneously. When the body is in an unconscious state, it is conceived that the state of consciousness is absent. Concerning a temporal act, the conscious and unconscious state cannot be

concurrent and lasting during a specific period. One cannot be conscious and unconscious at the same time. So, the timing of the raw experience to be communicated to Libet is lost as he requires the participants to produce a time report of when they were consciously studying their unconscious state.

Libet's time-reversed experiment is prone to some mistakes leading to inaccurate results. There is an issue with the backward referral in timing. Despite the measured ratings of electric potentials, an attempt to conclude in conjunction with subjective timing of awareness defies the credibility of the experiment's accuracy. The backward referral in the timing of the conscious subjective experience is dubitable. It is dubitable because, in Libet's controlled experiment, the participant indicates the point on the oscilloscope screen when they became aware of their decisions. However, at the point when the participant is to act voluntarily based on consciously deciding, then I think it becomes a planned voluntary decision rather than a spontaneous voluntary one. The decision becomes planned because the participants have been directed that they are supposed to act in a period. The participants, then, find themselves in a state of preparedness to decide. Therefore, in my view, the case of Libet distinguishing between Type I RPs and Type II RPs (Libet, 2004, p. 131) is not relevant because the case he (Libet) considers as Type I RP (pre-planned decisions) are the same as the Type II RP (spontaneous decisions). The difference in their times (Type I RP – 1000ms and Type II RP – 550ms) is a mere delay in decision. All the decisions in Type I and II RP experiments are pre-planned. Also, the participants' indication of timing on the oscilloscope screen is dubitable. It is dubitable because since awareness is a cognitive state, there could be the case that a participant may be aware but

unable to identify on the screen the exact time of awareness quickly. This is a case of sensual ineffectiveness and its corresponding delay in timing. This objection stems from the general understanding that the information from sensory organs to the central nervous system involves some time difference which may be enhanced by some internal delay or certain environmental obstructions (Radin, 2000).

The third issue, the identification and purposes of RP's, is critical because the RPs (electric potentials) are signals that come as triggering initiated from the peripheral nervous system carrying information. These RPs are electric activities, and the information they carry cannot be observed. RPs are connected as they trigger through the spongy cells of the neuronal network. A challenge for Libet's investigation is his inability to perform an intracortical reading due to the health risks involved. Instead, Libet appropriately goes with outer brain readings performed with the electrodes of an EEG scan. Nevertheless, for the search, readings and purposes of RP's, there could be some implications due to the outer reading technique. One, the RPs are just electric signals, and they do not have individual names. So, this technique observes only the area that the RP occurs to identify the RP. Two, we lack the technology to sample individual RPs to know their content or purpose. Rather, all that we observe is a series of event, so we eventually interpret what RPs are and their purpose with what we observe.

The purpose of Wegner's experiment, which was conjunctly authored with Wheatley, was to prove the apparent mental causation responsible for deceiving others of the causative power of their conscious will. However, in their experiment, it was proven that two paths seem to lead to action, but in

actuality, only one does. The seeming path to action, which eventually and regularly fails, according to Wegner, is initiated as an unconscious path that eventually generates our thought. This thought that the individual believes in leading to action (due to the experience of the will being generated by this thought) is believed to cause the body to manifest the action. Moreover, as I reiterate, Wegner and Wheatley (1999) radically oppose the belief in mental causation. Hence, the conscious will is causally impotent. Instead, what they call the actual path to action is a pure unconscious process that does not involve any mental involvement. Here, the point of my objection is on the matter of an unwarranted causal inference made by Wegner and Wheatley. That is, the internal causes that eventually lead to action are not observable, rather, the series of events are observed. Thus, the unobservability of causation does not create a sufficient ground for the claim of an unconscious causal path over a conscious path to action. In Husserlian terms, since we are genuinely and naturally excluded from observing a causative power, there are no sufficient grounds to claim an unconscious process's efficacy in denial of a conscious one.

Vagueness and Equivocal Cases

Libet's discussion of initiation is vaguely expressed. On Libet's account, the initiation of action is due to an unconscious cerebral process that precedes awareness. The point of contrast is not to deny the unconscious cerebral process, rather contest that the unconscious cerebral process initiates a voluntary free action that bears several meanings (Radder and Meynen, 2012). Hence, there is a vague issue at hand. According to Radder and Meynen (p. 4), the claim of an unconscious brain process that initiates a free

voluntary act can be interpreted as the initiation by the readiness potential as a cause, necessary condition, correlated event, or regularly preceding the event. To claim that the readiness potential is the cause of free voluntary acts means that out of nothing (devoid of willingness, intentions and awareness), the readiness potential can bring forth activity in place as an originator or a force. The conception of a readiness potential with its autonomy and acting as a force is ridiculous. Such force is conceived (by Libet) to bring forth (out of nothing) a chain of effect, creating a voluntary free act. The conception of the readiness potential as a force portrays the readiness potential as a causal substance, which is likely to lead us to a regress problem of creation. Also, considering the readiness potential as a necessary condition does not suffice for varying cases of voluntary acts. If the readiness potential operated as a necessary condition to voluntary free acts, why do individual acts undergo vetoing by the conscious will, and why aren't all actions of equal energy and nature? A kind of necessary condition tying readiness potential to voluntarily free acts ought not to yield varying consequences. If the readiness potential is perceived to be correlated to voluntary free acts, it does not imply a necessary connection. They both could be properties of some other unidentifiable cause. An assumed inference between the conjunction of the presence of readiness potential and a voluntary free act is not enough to claim a causal flow (one initiating the other).

Nevertheless, it is not proven that the occurrence of a readiness potential is the only thing that precedes a voluntary free act. Finally, perceiving the readiness potential as a regularly preceding event is not sufficient to explain the readiness potential as an initiator because they could

be both (the readiness potential and will) affirmed to occur in the human biological system leading to action. Thus, a pre-planned intention could be the drive actualising the action while the readiness potential occurs. However, it is counter-intuitive to concur that the readiness potential spontaneously develops, and it is mostly right in predicting what we intend to do. The accuracy rate with which we can perform in our means as expected leaves it unconvincing that a random and spontaneous event could be an accurate initiator leading us to our actions. Therefore, aside from this, the vaguely pointed readiness potential by Libet as an initiation event, as Radder and Meynen claim, the readiness potential alone is insufficient in causing a voluntary free act.

The nature of some philosophical concepts found in Libet's work needs critical attention. Their philosophical nature does not allow them to be concretely expressed for testing. These concepts include free acts, the efficacy of the will, and vetoing. While, there are no boundaries ultimately expressing what a free act is, the efficacy of the will does not avail itself for verification. And vetoing as an act of the will is affirmed possible, but its metaphysical nature does not mutualise with the science. For free acts, participants' quest to demonstrate a free act is not overt for empirical testing. Even though the test is on the quest to find proof of free will or not, its evidential approach is veiled to the cognitive assessment procedures. Such cognitive assessment procedures that occur prior to actions are non-empirical. Hence, an empirical inquiry method to unravel such immaterial states with tools and enquiries of physical assessment sounds absurd. In the case of an attempt to examine the efficacy of the will, because the will is a non-physical phenomenon, it does not operate in

the physical realm. Our will (which generates from our consciousness) operates as the person in John Searle's Chinese room; we do not know the mind, but we experience the mind as the machine of the Chinese room functions well without us knowing the one in there. Some operations occur in the other realm, which remains unobservable, but then, we see a wave of effect in bodily actions. The idea I present here is not on any theory of the mind-body problem. Rather, I imply that the will cannot be identified as a physical substance because it cannot be empirically appreciated nor measured. Therefore, such concepts that are non-factual fall beyond the neuropsychologists' assessment (like Wegner and Libet), so an assessment of the concepts will not discuss their issues with the appropriate techniques. On the acclamation that certain cognitive statements could be dubitable, a report on the state of awareness could be misinterpreted. Could it be that the participant rightfully indicated the accurate time of awareness or indicated the time of awareness when her mind prompted her of the intend to indicate the time of awareness? Initiation is not accessible and assessable even though there is a physical point at which an act begins but is not the initiation point. The phenomenon of initiation in decision-making is not accessible and assessable to an observer. Even though there is a physical point at which an act begins but is not the initiation point because the initiation point is internal to the conscious self. Moreover, contrary to Libet's experimental results, Mele (2009) asserts that intentions could be unconsciously made and hence, one does not necessarily have to have conscious intentions.

The inability to indicate the point of initiation could be due to some methodological problems in Libet's experiment. According to Pockett (2006),

the EEG and EMG scan techniques fail to identify the specific area of the brain that initiation takes place. This claim is legitimate because, given the readiness potential, Libet asserts that the action is initiated by unconscious brain activity. However, Libet fails to indicate the brain area where the initiation takes place. Pockett rather suggests that some invasive, intracortical method might be appropriate, but due to its unethical processes, they are not recommended. The rationale behind Pockett's suggestion could be due to the inability to find the brain area by external examination from the scalp. Also, other recent reports recorded by Pockett suggest that a subcortical study of the cranial readiness potential signals during the moment of decision-making have a presence of different readiness potentials.

There is also the problem of the misappropriate use of words. Mele identifies this problem by claiming that Libet uses the terms; decision, intention, want, wish, and desire interchangeably. Mele intends to clarify people's misconception of equating wanting to do something and deciding to do it. Mele asserts that the two are not the same. According to Mele (2006b), believing to decide A makes one form the momentarily mental action of an intention to A. So, when one decides to have a desert, the individual develops the intention to stop at one. Here, Mele claims that the intention of making the stop at a desert is different from the mere wanting of a desert. From Mele's claim, we can realise that wants to seem more of an urge while the intentions feature like a self-determined motive to act. Libet's readiness potential, to Mele, is more likened to the urge, want or desire. The want, urge or desire comes after the formed intention (Mele, 2009). Therefore, Mele defends that our intentions form the essential part of having free will by associating the

readiness potential to wants, so the readiness potential occurs after a person's intention.

I cannot entirely agree with Wegner's conception of an illusive conscious will due to non-clarity associated with Wegner's use of the term "consciousness". The vague use of the term consciousness impairs the meaning of various claims. David Chalmers avers that we (humans) seem to have much innate knowledge of consciousness than the world, but we comprehend the world better than consciousness (Chalmers, 1996, p. 3). The inaccurate comprehension of consciousness is a challenge for most students of consciousness. Often people refer to certain states as conscious without an appropriate characterisation (Elzein, 2020, p. 6), and Wegner is no exemption. In Wegner's *The Illusion of Conscious Will*, he vaguely describes several mental states as "consciousness" without individuating the form of consciousness in the discussion (Wegner, 2002, pp. 17, 21, 28, 57, 60, 139, 163). It may be observed that in his frequent use of the term "consciousness", he intends to talk about awareness, rightly described by Chalmers (1996, p. 211) as access consciousness. Several mental states can be categorised. Elzein (p. 6) mentions that phenomenal, access and intention/representational content consciousness are the most acknowledged. Phenomenal consciousness includes mental states such as raw feels, qualitative states, like qualia, which characterises our subjective feel with directly sensible qualities. Access consciousness deals with informational consciousness, and this functions with immediacy to awareness, so only the individual can report being in such a state. The intention/representational content consciousness consists of our intentions, desires, wants, plans and others (Chalmers; Elzein).

Misrepresentation of these categories will generate ambiguities, and this is exactly what Wegner does. For instance, Wegner (2002, p. 60) creates an equivocal chain in the last two paragraphs as he ambiguously uses the term consciousness four times. In these instances, consciousness represents access consciousness, phenomenal consciousness, intention/representational content consciousness and the collective idea of consciousness, respectively. Wegner's equivocal use of the word consciousness makes it unclear to outline the kind of consciousness that he argues to be epiphenomenal or be lacking causal efficacy. Thus, this unclarity adds to make Wegner's argument unacceptable.

Another objection to Wegner's thesis is that he misinterprets the self to be of different entities. This understanding of his seems to inspire his thought of a conscious state and unconscious state of a person as though they were of parallel entities. In Wegner's line of thought, he seems to be strongly convinced of the unconscious cerebral causes of our conscious processes such that he does not present the conscious self and unconscious self as a wholesome entity constituting the self. In some cases, Wegner claims that we are sometimes oblivious of the mental operations that produce certain thoughts (Wegner, 2002, p. 67). Such claims projects dissociated identities in a person. Wegner projects the idea of the self as a witness, observer or a mere perceiver of unconscious bodily activities. Wegner seems to focus his studies on what a conscious will is from a cartesian purview, and with this understanding, he can conclude that the conscious will is an illusion (Spaak, 2009). But such conception of the self by Wegner depicts a cartesian ghost in a machine. However, there is no dissociation with identities. There are no multiple identities at all. Moreover, what is supposedly thought to be dissociated is a

person's presentation of different mental states. We can understand that the self is both a conscious and unconscious being. Even though it is believed that intentions, will, plans are sometimes manifested in a conscious state, it does not preclude the idea that our unconscious states are different from us. The will can manifest in an unconscious state (Deecke, 2012), and the same does happen with our intentions (Mele, 2009).

The Naturalistic Fallacy

Libet and Wegner's attempt to factualise free will is the first problem leading to the naturalistic fallacy. Free will is not an objective reality, rather, it is a subjective reality that is value-based. Its subjective nature and mystery is the more reason free will is a philosophical issue. The conception of free will is universal, for it applies to all, hence, people share relative views about this subjective reality. People live knowing the problem of free will but can choose to either believe in it or not.

Libet has doubts about human freedom due to his scientific research, and Wegner adheres to the position that human nature is causally determined. Therefore, we ought not to be regarded as free agents. This view commits the naturalistic fallacy.

Since free will is a core feature of human morality, all issues pertaining to free will affect our conception of morality. The attempt to use naturalistic standards or determinants to define free will drives us to commit a naturalistic fallacy. Free will, which is a value-based concept, is agreeably a social construct. However, just as we may appreciate or trivialise the concept of money, the same applies to free will because they are societal constructs. Money, for instance, has evolved over ages depending on value, purpose and

comfortability. Before, money was cowrie, gold and other items, till it evolved to coins, then paper, and now the world today deals with electronic money. Similarly, the concept of money could be appreciated or not depending on society's values and conventions. Humankind naturally does not need the concept of money nor free will for survival. Nevertheless, both money and free will are essential societal concepts that man is required to embrace to fit in society.

The usage of objective empirical standards to judge free will indeed run into a naturalistic fallacy. From Libet's studies, the timing, occurrence and evidentiating of an RP in conjunct with the claim of awareness and flick of the wrist is sufficient evidence to doubt human freedom. Wegner, on the other hand, avers that human ought not to be ascribed freedom due to the body's conscious path that causes unconscious thoughts to actions and our inability to prove mental causation (which Wegner also fails to disprove). Therefore, according to Wegner, going by our causally determined biological makeup, we are not free. There lies an inconsistency as a natural concept is used to judge a social concept.

Fallacy of Hasty Generalisation

Libet could be charged with committing a fallacy of hasty generalisation. Libet examines a simple wrist movement's case to affirm a claim that readiness potential precedes conscious intentions. Apart from the error of plotting a non-empirical phenomenon based on an empirical enquiry, the case of simple wrist movement is not enough to generalise his affirmation for all forms of movements. A counter-argument may be that the experiment was severally conducted, so there is much evidence to affirm the claim.

However, such a counter is illegitimate because, rather than assessing various forms of bodily movements with the readiness potential, Libet focuses his experiment only on the movement of the wrist. The movement at the wrist alone is insufficient to affirm the claim that the readiness potential precedes conscious intentions in all forms of bodily movements. This objection implies that, given that Libet's claim of the RP's precedence is legitimate, it does not preclude the option that there may be some other bodily actions that have conscious intentions earlier than readiness potential.

This chapter has discussed some critiques of Libet and Wegner's theses. These critiques come in four arguments: the Husserlian objection, vague and equivocal cases, the naturalistic fallacy, and hasty generalisation's fallacy. The uncertainty, unclarity, and fallacies distorting the reasoning patterns of Libet and Wegner's arguments make their theses not wholesomely acceptable.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

Overview

The aim of this study has been to fundamentally develop a critique of Libet and Wegner's studies on human activities. Libet's and Wegner's position on the issue of free will was driven by the fact that the will is the ultimate cause of our actions. Broadly speaking, I have argued that even though cognitive neuroscience may examine human actions to make an assessment or judgement on the freeness or limitedness of the human being, this field of study (cognitive neuroscience) is not the appropriate field to determine whether we have free will or not.

Summary

While Libet establishes a significant work to prove the unconscious initiation of action in the human brain, Wegner absolutely casts the conscious will (commonly believed by free will advocates to cause free act) as a figment of the brain and the mind's illusive manifestation. However, some critiques including the Husserlian objection, vagueness and equivocal cases, the naturalistic fallacy, and the hasty generalisation fallacy, make Libet's and Wegner's claims not tenable. Aside from these philosophical gaps that expose the incompleteness of the cognitive neuroscientific attempt to resolve the mystery of free will, Libet's and Wegner's works have immensely added to the study of our biological system and the actions we perform. Their theses purport that we are neurobiologically determined. Thus, our neurobiological makeup only permits the possible thing that humans can do. And if this neurobiological determinism were true, then the brain is in control and not the

self, then the illusoriness that Wegner claims is highly probable, then we can as well accept that the readiness potential which is realised to precede the will cause the will. These compelling arguments by cognitive neuroscientists do not allow any tolerance for the conventional notion of free will. The conventional notion of free will (Libertarianism) is critiqued by Pereboom to be either engaging in mysticism or panicky metaphysics. Libertarianism is seen as impossible because it seem to face the puzzle of a dualistic interaction (the self and the body). Libertarians posit the self as the immaterial part of a person which is a substance and hence, the problem is how the immaterial cause the material. The insufficient explanation by Kane (1996) other Libertarians have made the scientific explanation of human freedom appealing. The scientific approach states the material entity as the substance which has the immaterial part as a possible emergent entity. Thus, free will ceases to be the uncontrolled operation of one's conscious will. Due to the obvious conclusion that the body is a substrate to the conscious will, there is the need for the redefinition of the concept of free will. Such a change has pricked others on the need to rethink the concept of praise and blame, and this involves the neurobiological examinations involved in peculiar actions that require praise or blame.

Conclusion

The non-tangibility of free will does not make it rational to employ an empirical technique in investigating it. Free will is a philosophical problem. In spite of the fact that actions could be assessed to clarify our understanding of free will, one cannot conclude with reliance on empirical studies only. This is because, aside from external factors contributing to the performance of an

action, there are internal factors, including conscious and unconscious ways, that empirical studies may not adequately study. An immaterial phenomenon that is mysterious cannot be demystified by the operations of a contrasting realm (material realm). Also, the nature of the assessment of free will should be quite synonymous with that of consciousness. The conceptual approach to consciousness thrives more in demystifying consciousness rather than the empirical approach because the subject of investigation (consciousness) is immaterial.

A likely objection to the advocate for a conceptual approach to the problem of free will is that there may not be an immediate solution. However, such problems that are of an immaterial phenomenon are not easily understood via empirical assessment. Their solutions are beyond the tests of the brain, the nervous system, and other physical parts of the human body. Empirical studies would have been the best attempt for a solution to the mystery of free will if there were a possibility to embody the problem such that it no more remains a conceptual problem but an empirical one also.

Recommendation

Philosophers are to critically pay attention to the scientific community's attempts as they proffer solutions for philosophical problems. As Dennett (1984) claims, there is the need to carve out the problem in the most appropriate way in the search for a solution. It is the philosopher's work to express the relevance of his works and the nature of the problem involved. Thus, possible solutions to perennial problems should have appropriate solutions from philosophers.

To the neuroscientists and psychologists, even though science-based works seem to be appealing, it does not necessarily imply that it is the right way of solving every problem. Nevertheless, good experiments such as Libet's and Wegner's are not redundant but essential in helping us gain knowledge of an immaterial phenomenon such as free will. The empirical approach is not totally redundant because the free will phenomenon is embedded in human actions. So, I recommend that the neuroscientists and psychologists present their ideas for philosophical analysis in assessment of a philosophical problem.

Certain phenomena are claimed not to be objectively embedded in reality. These non-objective realities, when situated in human societal discourse, are referred to as a social construct, and free will is no exception. The claim of objectivity means the phenomenon can exist as an independent reality without the awareness of any mind. The question arises that if the human person is unable to observe a particular reality even though it is sometimes experienced, does that mean it is not real? The concept of free will may be perceived as a social construct, but a metaphysical assessment of free will makes us understand that free will is the phenomenon arising from awareness in our actions.

So, the issue of existence or non-existence of free will has implications on certain societal systems that are facilitated on the count that the human being is free and could be blamed or praised. Such systems include our legal and justice systems, business systems, religious systems and so on. If the conscious will is indeed an illusion, then there will be zero chance of being free. If the world is to adhere to the position that we were completely

determined, then the deterministic principle will result in major changes in our conception of the world. In the absence of blame or praise, the human world will be inevitably chaotic. Hence, the need for the survival of human society and its' development requires a reconceptualisation of free will.

A careful study of Libet's and Wegner's contributions to the argument on free will yields a need to reformulate the understanding of free will. The human will is realised not to be an ontological autonomous entity. The will remains an emergent feature of human consciousness. Thus, it is likely for most people to be attracted to the idea of Neurobiological determinism. That is to say, every action that is humanly possible emerges from a neurobiological system, and futuristic actions are necessary consequents of past and continuous events. So, any activity of man is produced by a conscious neuronal makeup. This deterministic position implies that for every decision made, there in the neuronal constituents of the brain is a mapping that can be traced with precision, synaptic networking and electric potential causal patterns that lead to every action. Furthermore, it implies that the meaning and understanding of the several activities we make are accessible and assessable by focusing our studies on the electric potentials that occur in our synaptic networking. However, it does not seem philosophically possible, and there is no adequate technology to tell the true meaning or entailment of a precise neuronal electric potential and its precise future movement and causing in the synaptic networking of the human brain. The meanings we can get from an analysis of electric potential are an interpretation of our understanding. Also, the heavily dense nature of the synaptic networking in the brain makes it

almost impossible to credibly predict the continuous journey of electric potential in a synaptic network.

Our scientific and technological limits to decipher the randomness and spontaneity in the brain, coupling with the hidden entailment of an electric potential, makes it difficult for me to accept the determinism in neurobiological determinism. If science were to make an attempt to make projections of the electric potential in the synaptic network by employing the Schrodinger equation of probabilities, science would still face critical challenges. These challenges will persist because the inaccessible intracortical examination will curtail the search to obtain the accurate length, width, mass of sub-cortical entities.

Rather than neurobiological determinism, I proffer that human freedom may be understood to occur in a biological system featured with some indeterministic feature. This is what I call neurobiological freedom. This neurobiological freedom is the freeness that is produced from intra-cortical interactions of the neuronal network. Fundamentally, the activities occur in a human biological system. However, the randomness and spontaneity involved in the patterns of the electric potentials are complex. Such neuronal complexities are possible due to the constant growth of neurons, the regeneration of other neurons and other neuronal activities. Moreover, neuronal formulations imply more density for the synaptic network. In this neurobiological system is the operation of a conscious process that results in action, but its meaning falls beyond the knowledge of both the individual and the researcher, observer or scientist. Thus, this activity of the conscious-self operating within the neurobiological system is the metaphysical entailment

that travels with randomness and spontaneity across the synaptic network. Without the biological system, no human activity can be possible and similarly, no human activity will be possible in the absence of consciousness.

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