

# FACTS AGAINST SPECULATIONS: UNDERSTANDING PATRICIA CHURCHLAND'S NEUROPHILOSOPHY

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## INTRODUCTION

“The more informed our brains are by science at all levels of analysis, the better will be our brains’ theoretical evolution”

*-Patricia Churchland (1986)*

Discourse in philosophy about how human being could attain knowledge, right from the medieval period to the modern period has witnessed scholars making references to the ‘intellect’, the ‘mind’ or the ‘soul’. A radical change in this linguistic reference was challenged by Gilbert Ryle with his analysis of ‘ghost in the machine’. It appears to be a primitive way of thinking, especially in our age, to still hold on to the view that there is an invisible and immaterial substance, other than the brain, that influence human or regulate human feelings, decisions and means of knowing. Meanwhile, within the tradition of philosophy, idealists and rationalists (along with religiously inclined scholars) will prefer to be consistent with their metaphysical heritage and postulations by challenging any materialistic reduction of a human person to just a material being whose movements, actions, and phenomena surrounding him could be explain simply in empirical terms.

Furthermore, a quick glance at the history of ideas, one would recall a moment (starting from David Hume down to the emergence of logical empiricists/positivists and linguists) in which a brutal war was launched against metaphysical ideas, leading to a periodical triumph of science. Though this tension was resolved by scholars like Thomas Kuhn, Karl Popper, Paul K Feyerabend and most post-modern scholars, yet it creates two camps among the scholars of science and philosophy – as the academic protector of metaphysics. On one hand, we have those who felt that in spite of the inadequacy of science in its empirical approach to the study of human being and the universe, and archaic terminologies and ideas inherited by philosophers (specifically metaphysicians) from the antiquity down to the present, a compromise could be

reached in which both inquiries could enrich one another. While on the other hand, we have those who felt that such compromise could result to the purge of philosophical ideas (along with their metaphysical postulations) from sphere of intellectual inquiry. Research into the works of Philip Kitcher (in his engagement with evolutionary and molecular biology and psychology so as to give a philosophical portrait of scientific enterprise), Richard Tarnas (in his deployment of astrological ideas in his philosophical interpretation of history) and Patricia Smith Churchland (in her attempt to inter-marry neurosciences with philosophy) has shown the fruitfulness of accepting the tenet of the first camp.

Patricia Churchland, in her books, specifically in *'Neurophilosophy: Toward a Unified Science of the Mind-Brain'*, noted that philosophical problems were once thought to admit of a priori solutions – a contemplation unfettered and uncontaminated by the grubbiness of empirical facts. This dogma, she argued resulted in an anti-intellectual and scoffing attitude toward science in general – an attitude that was changed through Quine's and Sellars's works that portrayed philosophy as being continuous and at best with the empirical sciences. She argued that since the mysteries of mind-brain function have been the concern of philosophy, cognitive psychology, artificial intelligence research, and neurosciences, and they must work together in unraveling those mysteries.

Thus, she recommended that philosophers need an understanding of what progress has been made in neuroscience so as to sustain and constrain theories about such things as how representations relate to the world, whether representations are propositional in nature, how organisms learn, whether mental states are emergent with respect to brain states, whether conscious states are a single type of state, and so on. This will prevent philosophers from remaining 'boxed within the narrow canyons of the commonsense conception of the world' or from 'heroically plumping up the pillows of decrepit dogma'<sup>1</sup>.

This essay therefore focuses on Patricia Churchland contribution to this interdisciplinary approach towards gaining a holistic understanding of our human nature and realities surrounding us, with specific reference to the perceived framework needed for the development of a unified theory of the mind-brain. A critical engagement with Churchland's ideas seems to show that a serious progress could be attained by contemporary philosophers in their engagement with longstanding questions concerning the mind, will, soul or consciousness, and intellect – ideas upon which discourse in metaphysics, epistemology, and ethics built their postulations and theories.

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<sup>1</sup> Neurophilosophy, p. 3

## PATRICIA CHURCHLAND'S NEUROPHILOSOPHY<sup>2</sup>

In her books, 'Neurophilosophy: Toward a Unified Science of the Mind-Brain' (1986), '*Brain-Wise: Studies in Neurophilosophy* (2002) and *Braintrust: What Neuroscience tells us about Morality* (2011), Patricia Churchland's goal was to provide a unified, integrating theory of how the brain works. She aims at creating a bridge between philosophy and neurosciences in spite of their conceptual differences. She felt that understanding of the nature of human being, either as social or rational being, must be backed up with real data from evolutionary biology, neuroscience, and genetics, or else such explanations will be taken as mere opinion.<sup>3</sup> In other words, the object of discourse for philosophy and science is the nature of man and things in general. She felt that neuroscientists, philosophers of science, and historians of science are addressing same questions.

Considering the following traditional philosophical problems: Are mental states identical to brain state? Are mental states reducible to brain state? What sort of business is reduction? What are emergent properties and are there any? What, if anything, is special about subjective point of view? Are conscious experiences physiologically understandable? What are representations and how can a brain represent the world outside itself?<sup>4</sup> It is this same question that will be empirically phrased by neuroscientists thus: How is colour vision produced? How does the brain learn and how does it store information? What are representations and how does a brain represent the world outside itself? Is the human brain more complicated than it is smart?<sup>5</sup> All these are questions about the brain and the mind (or the mind-brain).

Patricia Churchland began her neurophilosophical project when she noticed the possibility of linking those large-scale philosophical questions about human mind with developments in the perspective of neuroscience and theories of brain evolution, as exposed by the recent developments in biological sciences (giving us details of brain circuitry). The presupposition seem to portray scientism (the belief, or a sort of delusion, that science can explain everything or do everything) as she noted<sup>6</sup>. Meanwhile, she argued that scientific enterprise does not aim to displace the arts or humanities.

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<sup>2</sup> It should be noted that she not the first to equate the mind with the brain. She took a leap from Hippocrates and Francis Crimson.

<sup>3</sup> C.f. Patricia Churchland, *Braintrust*, p.3

<sup>4</sup> Neurophilosophy, p.2

<sup>5</sup> *Ibid*

<sup>6</sup> *Ibid*, p.3

Being a naturalist and a materialist, Patricia Churchland believed that the mind is simply the brain<sup>7</sup>, and we can understand it better by learning from Neuroscience about the Nervous system and various cognitive functions. In *Neurophilosophy*, she began with an exposition of the science of the nervous systems, and gave an historical survey that portrays the works of anatomist and physicians such as: Galen (200 B.C)<sup>8</sup>, Descartes (1598 – 1650), Jan Swammerdam (a Dutch biologist, 1637-1680), Francois Magendie, Charles Bell (1774 – 1842), Johannes Muller (181 – 1858)<sup>9</sup>, Helmholtz (1821 – 1894)<sup>10</sup>, Camillo Golgi (1843 -1926)<sup>11</sup>, Santiago Ramon y Cajal (1852 – 1934)<sup>12</sup>, and C. S Sherrington (1857 – 1952)<sup>13</sup>.

She exposed the modern theory of Neurons as propounded by Rudolf Virchow (1856), and explained how neuron works. She also exposes three discoveries in neuropharmacology (i.e., the study of chemicals that affect neurons) and their impacts in extending our understanding of the Neurons. The first and second discoveries were made in the 1950s, and it led to the production of drugs that cured several mental diseases such as schizophrenia and Parkinson's disease<sup>14</sup>; while the third discovery was made in the late 1970s<sup>15</sup>.

In chapter 3, she gave us a basic understanding of functional neuroanatomy in order to enlighten on how populations of neurons are configured.<sup>16</sup> She then ventured into an explanation of the functions of the entire nervous system<sup>17</sup> by exposing findings in neuropsychology and neurology<sup>18</sup>. She entered into a philosophical interrogation of scientific endeavour by asking questions such as: Can we develop a science of animal behaviour, human behaviour included? What will be the role of neuroscience in such a science? How can neuroscience and psychology be integrated?<sup>19</sup> She tried to provide answers to these questions by drawing wealth from the ideas of philosophers of science down the history: Aristarchus (3 B.C)<sup>20</sup>, Plato (429 -347 B.C)<sup>21</sup>, Descartes (1596 -1650)<sup>22</sup>, Classical Empiricists ( John Locke, George Berkeley, David Hume, John

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<sup>7</sup> C.f. Patricia Churchland, *Neurophilosophy*, p.ix

<sup>8</sup> *Ibid.*, p. 15

<sup>9</sup> *Ibid.*, p. 18

<sup>10</sup> *Ibid.*, p. 22

<sup>11</sup> *Ibid.*, p. 27

<sup>12</sup> *Ibid.*, p. 29

<sup>13</sup> *Ibid.*, p. 30

<sup>14</sup> *Ibid.*, p. 68

<sup>15</sup> *Ibid.*, p. 69

<sup>16</sup> *Ibid.*, p. 99

<sup>17</sup> *Ibid.*, p. 147

<sup>18</sup> *Ibid.*, p. 171

<sup>19</sup> *Ibid.*, p. 239

<sup>20</sup> *Ibid.*, p. 240

<sup>21</sup> *Ibid.*, p. 242

<sup>22</sup> *Ibid.*, p. 243

Stuart Mill and Auguste Comte)<sup>23</sup>, Kant (1724 -1804)<sup>24</sup>, Peirce (1839 -1914)<sup>25</sup>, Gottlob Frege (1848 -1925), Bertrand Russell (1872 – 1971)<sup>26</sup>, Logical empiricists and positivists<sup>27</sup>, and Karl Popper<sup>28</sup>.

She presented an elaborate discourse on the major revisions in the platform features of logical empiricism and tried to show the implications for the mind-body versus reduction controversy. Since the underlying assumption of her neurophilosophical project is a reductionist theses, she explore various arguments concerning the questions whether mental states and processes can be reduced to brain states and processes<sup>29</sup> or whether mental states are reducible to neurobiological states<sup>30</sup>. She exposed and responded to several arguments against the reductionist program, especially those based on folk psychology<sup>31</sup>. She then delve into the theories of brain functions<sup>32</sup>, and argued that folk psychological categories and concepts such as memory, learning, and consciousness needed to be replaced by more adequate ones<sup>33</sup>.

She considered the relationship between science and humanism. Having shown that neuroscience matters to philosopher on the premises that metal processes are brain process; that the theoretical framework resulting from a co-evolution of neuroscience and psychology is bound to be superior to folk psychology; and that the knowledge, in great detail about the structure and organization of nervous systems, is necessary for an adequate theory of the mind-brain, she concluded that neuroscience needs philosophy because ongoing research must have a synoptic vision which only philosophy can give.

...a synoptic vision, transcending disciplinary boundaries but informed by the relevant disciplines, testing the integrity of the governing paradigm and investigating alternatives, is philosophy. At least, it is one very traditional way of doing philosophy. But this sort of philosophy is not an a priori discipline pontificating grandly to the rest of science; it is in the swim with the rest of science and hence stands to be corrected as empirical discovery proceeds<sup>34</sup>.

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<sup>23</sup> *Ibid.*, p. 244

<sup>24</sup> *Ibid.*, p. 247

<sup>25</sup> *Ibid.*, p. 249

<sup>26</sup> *Ibid.*, p. 251

<sup>27</sup> *Ibid.*, p. 252

<sup>28</sup> *Ibid.*, p. 259

<sup>29</sup> *Ibid.*, p. 277ff

<sup>30</sup> *Ibid.*, p. 315ff

<sup>31</sup> *Ibid.*, p. 349ff

<sup>32</sup> *Ibid.*, p. 403

<sup>33</sup> *Ibid.*, p. 481

<sup>34</sup> *Ibid.*, p. 482

At this junction, one would be tempted to ask whether neuroscience has affected the expected revolution that Patricia Churchland foresees about thirty years ago or whether discourses in epistemology and philosophy of mind transfigured by recent discoveries on how brain learns, theorizes, knows and represents. Well, we can excuse her on the basis of her humble remark about science:

...science is not on the brink of explaining everything about the brain or evolution or genetics. We know more now than we did ten years ago; ten years hence we will know even more. But there will always be further questions looming on the horizon.<sup>35</sup>

Patricia Churchland also realized that her contribution to the deployment of findings in neuroscience to resolve philosophical questions will be limited because many questions in neuroscience and behavioral genetics are still unanswered<sup>36</sup>. Meanwhile in her book, *Brain-Wise: Studies in Neuroscience*, she used her findings, over the years, in neuroscience and molecular biology to interrogate discourse in all branches of philosophy. To be specific, in *Braintrust*, she showed that a materialist's understanding of the human person will not hinder the postulations of moral behaviour and norms.

Well, Patricia Churchland resurfaced, sixteen years after this initial discourse on neurophilosophy, with a new book titled '*Brain-Wise: Studies in Neurophilosophy*'. She identified several developments in brain-mind studies and interaction among disciplines such as molecular biology, experimental psychology, and several fields of neuroscience. She acknowledged the triumph of neurophilosophy and their successes in accounting for the nature of consciousness, freewill and the self<sup>37</sup>. She felt she could deploy the wealth of neurophilosophy to resolve those traditional topics in philosophy.

It was a surprise to still find Patricia Churchland remarking, after sixteen years, that neuroscience is still an immature science as it has not yet attain the fundamental explanatory principles governing the brain function. In *Brain-Wise*, she has to make deploy findings in molecular biology<sup>38</sup> to sustain our initial presumption in neurophilosophy – one wonders whether the inquiry still deserves being called 'neurophilosophy' or a 'cross-disciplinary study of the mind-brain.

From a dualist perspective , it could be argued that the brain, being a separate and distinct entity from the mind, cannot be studied so as to gain information about the mind. Furthermore, even if the brain is the

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<sup>35</sup> *Braintrust*, p.4

<sup>36</sup> *Ibid.*, p.10

<sup>37</sup> *Brainwise*, p. viii

<sup>38</sup> *Brain-wise*, p.ix

same entity as the mind, what neuroscientists portray is simply a structural understanding of the brain while philosophers focus on its functions.

## CONCLUSION

As we accrue credits to Churchlands' invention of the idea of Neurophilosophy (with special reference to Patricia Churchland who acts as the family spokesperson), we acknowledge the need for a guideline on how such interdisciplinary exchange of ideas could be possible without undermining the presuppositions and basic foundation of any of the disciplines. If philosophers could adopt the findings of neuroscientists in resolving traditional controversies on the notion of mind and consciousness, it would be worthwhile for quantum physicists, amidst the challenges posed by the measurement problem in quantum mechanics, adopt metaphysical insights to enrich their discourse. It's obvious that philosophers are suspicious of scientists on the ground that they could still be acting and relating with philosophical ideas under the influence of the 'outdated and discredited positivist ideas about what science is and about the nature of theories, meaning, and explanation'<sup>39</sup>.

Patricia Churchland's assumption that in situation when philosophy and science are working the same ground, evidence should triumph armchair reflection<sup>40</sup> seems to undermine in spite of the methodological differences and variation in epistemic features, on no ground should findings in science be considered superior to that of philosophy. The ideas transmitted to us, about the nature of human mind and consciousness, from philosophers like Aristotle, Aquinas, Descartes, Locke, Berkeley, Kant, Hegel, William James, Edmund Husserl and many other philosopher, cannot be waved away simply as armchair reflection in preference for form of ongoing researches in neuroscience. It pertinent to mention, at this junction, that some neuroscientists as well as philosophers believe that a unified theory of the mind-brain is an unattainable ambition. Meanwhile, Churchland's neurophilosophy might be seen to be an effort to obey the spontaneous mandate of philosophers to engage in conceptual, descriptive analysis of discourses in science in order to display their relevance in a scientific and technologically oriented age.

If we agree that knowledge progresses and various human inquiries improve our understanding of the nature of the universe and the place of man in it, it will be logically consistent to align with emerging scientific disciplines that come up with new findings and replace them with our old ideas. Why we might be reluctant

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<sup>39</sup> *Ibid.*, p. 4

<sup>40</sup> *Ibid.*, p.4

in doing so is because the insight we have about the progress of knowledge in the so-called inquiry that claim to deliver facts other than mere philosophical speculations. Considering various theories exposed in Patricia Churchland's work, one realize that they are not saying the same thing about the brain and we could find out many years to come that none of them is correct –probably return back to beliefs and information obtained from previous philosophical speculations.

Furthermore, attack on philosophical understanding of the nature of knowledge and consciousness was based on the ground that there are some noble findings in neurosciences and molecular biology that shows that what philosophers calls the mind is just simply the brain. Meanwhile, proponents of this position need to realize that contemporary philosophical discourse on knowledge and consciousness transcends their so-called factual findings. For instance, materialist explanations of consciousness, as expounded by Patricia Churchland, would be confronted with the philosophical problem of qualia. And in such situation, Churchland and other reductionist will appeal to further research in science – a sort of ‘to be clarified in future’. In 1986, Patricia Churchland's excuse of not being able to defend her neurophilosophical stance on the ground that neuroscience was still a relatively young science. The question now is, what progress has neurophilosophy made after twenty-nine years of progress in neurosciences

Let examine the statements: “Let the ‘brain’ investigate the ‘brain’”; “Let the ‘mind’ investigate the ‘mind’”; and “Let the ‘mind’ investigate the ‘brain’”. It's only the last statement that makes more meaning on the ground that our notion of the ‘mind’ is not simply a reference to that massive mounds of cells that works together to give us a rich representation of the world – it goes beyond that. Even if we ignore the idealists' notion of the mind as being a spiritual or non-physical substance or effect, quantum physics is another empirical basis for asserting the error of the materialist reduction of the ‘mind’ to the brain.

To conclude, it will be recommended that philosophers should try to provide answers to questions such as : What sort of business is *reduction*? What conditions should be satisfied in order that *identifications* of phenomena can be made? How we to understand in a general way what representing are *is*? How are we to access the prospects of a *unified account* of mind-brain function? How might language relate to the world? This would enrich us and make us to stand on our feet in our interaction with development in Neurosciences (Neurobiology, Neurophysiology, Neuroanatomy, and Neuropsychology), development in Psychology (their discourse on mental Processes: Memory, Visual Perception, Cognitive and Subcognitive Processes), and development in Computer Science and Computer Modeling of Networks (and their discourse on Information Processing, on the nature of computations and representations). We need to know that philosophy cannot be seen in our own age as simple an a priori discipline.