

David Armstrong's Materialist Theory of the Mind: A Philosophical Interrogation

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Abstract

The Mind-body problem became more explicit and complex in modern times with Descartes' mind-body theory of interactionism. Within the materialist approach, Gilbert Ryle criticized Descartes' mind-body interactionism thesis and proposed analytical behaviourism as an alternative that viewed mental states in terms of behaviours. However, this theory failed to adequately explain mental states like consciousness and sensation, consequently, U.T Place and J.J.C. Smart introduced the Central State Theory to identify these mental states with brain processes. Armstrong was however, dissatisfied with their version of Central State Theory because they restricted their theories to mental states related to conscious experiences and sensations. In deviation, Armstrong was of the opinion that all mental states could be reduced to the central state of the nervous system. To achieve this, Armstrong blended Descartes' idea of an inner state with a redefined Rylean concept of dispositions. This position of Armstrong has been commended mainly because it provides an elegant explanation for mental causation and its consistency with scientific evidence from neuroscience. Nevertheless, it has been criticized, amongst other things, for its failure to account for qualia and also because it faces the problem of multiple realizability. Despite these criticisms, the findings of this article suggests that Armstrong's theory continues to be of significant relevance in contemporary society, mainly because of its potential utility in fields such as neuroscience, artificial intelligence, and mental psychotherapy. His theory has also created new insights into the mind-body problem and the various approaches to resolving the agelong problem. The analytic approach has been adopted for this paper.

Key Words: Mind-body problem, David Armstrong, Monism, Dualism, Brain

Introduction

The 'mind-body problem' is the challenge of explaining how the mind and body interact. What is a man? Is he only his physical body? Does he have a spiritual aspect? Are mind and body distinct or identical? If distinct, how do they interact? Are mind and brain the same? These are some of the puzzles that perplex us when we try to grasp the intricacies of man. These questions which jointly constitute the mind-body problem lie at the heart of philosophy of mind. The mind-body problem is therefore, a philosophical puzzle about the nature and relation of the mind and the body. It stems from Rene Descartes' 17th century view that the mind and the body are two different substances that can exist separately. However, this raises the question of how they can causally interact with each other.

Different philosophical theories have attempted to answer these questions in various ways. Two main categories of such theories are dualism and monism. Dualism holds that there are two distinct kinds of substances or entities in the world: material and immaterial. The mind belongs to the immaterial category, while the body belongs to the material category. Monism holds that there is only one kind of substance or entity in the world, either material or immaterial. The mind and the body are either both material or both immaterial. This view was first supported in Western philosophy by Parmenides and later by Spinoza. There have been some monist ideas of the mind, such as idealism and materialism. Materialism or physicalism, is a view that matter is the basic thing in nature and everything, including mind and consciousness, is caused by matter. This idea is different from idealism, which says that everything is made of mental ideas or thoughts. Within materialism are other theories like behaviourism, functionalism, identity theory or central state materialism which says that mental states are the same as physical states of the brain or nervous system.

Behaviourism is a materialist theory of mind that rejects the idea of the mind as an object. It says that having a mind means behaving or having dispositions to

behave in certain physical ways. Gilbert Ryle is a key supporter of this theory. He thinks that the mind is not a 'mysterious internal realm' like Descartes' spiritual substance, but just part of the physical behaviour.

The focus of this essay is on the theory of mind with particular reference to central state materialism. Its major proponents include: Herbert Feigl, Paul Feyerabend, U.T. Place, Hilary Putnam, J. J. C. Smart and David Malet Armstrong. Amongst these central state materialists, we shall dwell on David M. Armstrong's version, which combines elements from Descartes' dualism and Gilbert Ryle's behaviourism. Armstrong argues that mental states and processes are nothing but physical states and processes of the central nervous system, but that they also have dispositional properties that explain their causal relations with behaviour. He also contends that there are no good philosophical reasons for denying that humans are entirely physical beings. It is left to be seen in this paper the extent to which Armstrong's theory is formidable and relevant in contemporary times.

Materialist Theories of Mind

The bid to resolve the mind-body problem successfully led to the emergence of two main materialist theories of mind, namely: behaviourism and the central state theory or identity theory of mind. These materialist theories made tenable and viable by the radical advancements in science, have today become popular amongst contemporary philosophers in responding to the problem of how the mind and body interact. Furthermore, in these theories, the mind is no longer seen as a spiritual entity or as an entity distinct from the body, but rather the mind is explained in purely physical terms. In what follows, the behaviourist and central state theory of mind will be examined with reference to the types and also their proponents after which a groundwork for understanding David Armstrong's theory of mind would have already been laid.

Behaviourism

According to Raymond Osei, behaviourism, as a philosophical theory of the mind sprang from one of the cognitive sciences – psychology.¹ Moreover, in the 19th century, psychology was seen as the science of conscious phenomena. Here, man was studied by analogy and by examining his thoughts and feelings through a process called introspection.

Behaviourism came about as a reaction to the 19th-century idealist approach of psychology. Behaviourists considered the concept of consciousness to be mysterious, elusive and too hard to understand or define. In addition, they argued that 'consciousness' was neither a definable nor a usable concept; that it was merely another word for the 'soul' of more ancient times. Similarly, they rejected the idealist approach of introspection as being too subjective and prone to discrepancies between individual researchers, which could result in conflicting results. To avoid this issue and ensure objectivity in the study of human beings, behaviourists chose to focus on observable actions or behaviours instead. There are two types of behaviourism, namely, logical behaviourism and psychological behaviourism.

Psychological Behaviourism: Psychological behaviourism is attributed to John Watson and Burrhus Skinner. It tries to explain mental phenomena in terms of the relation between observable behavioural inputs (the stimuli) and outputs (the responses to the stimuli). John Watson is the founder of behaviourism. His 1913 paper “Psychology as the behaviourist views it” is the manifesto of early behaviourism. Watson declared that psychology is a purely objective science that aims to predict and control behaviour, and introspection has no role in its methods. Watson rejected the idealist method of introspection and detailed his inquiry on what psychology should be – the science of behaviour, which he called 'behaviourism'.² Burrhus F. Skinner, taking a departure from the thought of Watson Skinner, aimed to give psychology a scientific status by studying the link between

1. Raymond Oseyi, *The Mind-Body Problem in Philosophy: An Analysis of the Core Issues* (Ibadan: Hope Publications Ltd, 2006), 87.

2. John Watson, “Psychology as the Behaviourist Views It.” *Psychological Review* 20, no. 2

behaviour and environment. He was of the opinion that human actions were responses to stimuli and could be predicted and controlled through environmental study.³

Logical Behaviourism: Logical behaviourism, which is also called analytical or philosophical behaviourism falls under the monist school of thought on the mind and explains mental states in terms of behaviour, unlike psychological behaviourism which explains human behaviour in response to stimuli. Logical behaviourism is called “philosophical” to distinguish it from the kind of behaviourism that is done in psychology. It is called “logical” or “analytic” because it expresses the thesis of behaviourism in terms of the logical relation between mental terms and behavioural terms.

Logical behaviourism, according to Raymond Osei, is therefore a “thesis that tries to explain how it is possible for sentences that contain mental terms like 'thought', 'belief', 'image' or 'memory' to be translated into public observable behaviour.”⁴ From the foregoing, we can infer that philosophical behaviourism is a thesis that claims that we can analyse mental concepts in terms of concepts that relate to the body, and in particular, the concept of 'behaviour'. This thesis is often attributed to the British philosopher, Gilbert Ryle.

The Logical Behaviourism of Gilbert Ryle

Gilbert Ryle was a British philosopher, principally known for his critique of Cartesian dualism. According to Julia Tanney, Ryle, in his book, *The Concept of Mind*, is thought to have accomplished two major tasks. “First, he was seen to have put the final nail in the coffin of Cartesian dualism. Second, he was said to have suggested as dualism's replacement, the theory called analytical behaviourism.”⁵

3. Alane Lim, What is Behaviourism in Psychology? www.thoughtco.com/behaviourism-in-psychology

4. Oseyi, *The Mind-Body Problem in Philosophy*, 87.

5. Julia Tanney, “Gilbert Ryle”, *The Stanford Encyclopaedia of Philosophy* (Summer 2022 Edition), Edward N. Zalta (ed.),

Ryle was in some ways influenced by Ludwig Wittgenstein, who held that many philosophical problems were caused by the misuse of language. Thus, it is no wonder that Ryle adduced that philosophers like Plato and Descartes, misused ordinary language and created an unwarranted dichotomy between mind and body. As earlier noted, Descartes saw the mind to be an immaterial substance and the body to be a material substance, yet he also asserted that the mind controlled the body in some way. Ryle criticized this idea as the 'ghost in the machine' fallacy.⁶ Ryle questioned how a non-physical mind could impact a physical body, and his critique aimed to expose the mistake behind this philosophical puzzle.

Ryle argues that considering the mind as a non-physical entity embedded in the body is a 'category-mistake', which involves mistakenly attributing properties from one class to concepts of another class.⁷ Descartes committed this error by conflating the categories of mind and body. He failed to recognize that the terms 'mind' and 'body' belong to distinct categories. To clearly explain what he meant by category mistake, Ryle gave an illustration:

A foreigner visiting Oxford or Cambridge for the first time is shown a number of colleges, libraries, playing fields, museums, scientific departments and administrative offices. But yet asks; 'but where is the University'? He makes a category mistake. The visitor treats the university as if it were part of the category of buildings, rather than what it actually is: a collection of institutions.⁸

Similarly, Ryle argues that people also make category mistakes when they try to explain the mind as if it were a separate entity from the body, when in fact the mind is the result of the activities of the brain.

6. Gilbert Ryle, *The Concept of Mind* (New York: Routledge, 2009), 6

7. Joseph Omoregbe, *Philosophy of Mind: An Introduction to Philosophical Psychology* (Lagos: Joja Educational Research and Publishers, 2001), 29.

8. Ryle, *The Concept of Mind*, 6

Ryle does not expressly give an account of what the mind is. However, he asserts that the mind, like the concept of university as illustrated above, is a construction out of some more basic kind of things. These basic things are what he calls mental states. Hence, he asserts that just as explaining what colleges are, is enough to explain what university is, so too, explaining mental states, is enough to explain what the mind is. Thus, as noted by David Chalmers, when a person has been told about thinking, imagining, believing, knowing, desiring choosing and so on, but still asks “what is the mind?”, Ryle asserts that he will be making mistake of thinking that the mind is an entity different from what he has been told.

Consequently, according to Napoleon Mabaquiao, Ryle asserts that to talk of mental states and processes is to talk not only of actual behaviour, but also of 'dispositions' to behave in certain ways. For him, “behaviours are actual when they are currently being exhibited, whereas they are dispositional when they are yet to be exhibited by someone who is inclined to exhibit them.”⁹ Ryle also maintained that mental concepts have no meaning on their own and only derive their meaning from observable behaviour.¹⁰ In other words, mental states can only be understood in relation to how people act or are likely to act.

Furthermore, Raymond Osei opines that in giving an account of dispositions, Ryle defines dispositions as how something will behave under certain circumstances, without attributing them to inner states.¹¹ Mental concepts are therefore dispositional and not causal, and it is a mistake to see them as denoting categorical causes. When we say someone has a certain disposition, we mean that certain conditional sentences are true of them, such as 'if I am about to go out, then I will pick my umbrella.'

9. Napoleon Mabaquiao, *Mind, Science and Computation* (Quezon: Vibal publishing House Inc, 2012), 25.

10. Ryle, *The Concept of Mind*, 93

11. Oseyi, *The Mind-Body Problem in Philosophy*, 92

Ryle's analytic behaviourism faces multiple objections. Osei notes that Armstrong, one critic, argues that if we want to explain dispositions in a way that aligns with the common-sense notion that mental states cause our actions, we must view mental states as enduring and see dispositional concepts as having categorical bases with causal functions.¹² Again, Shanjendu Nath posits that Ryle's theory of analytical behaviourism fails to adequately explain states of consciousness which are expressed in our everyday statement. In addition, it fails to explain higher mental processes like imagination and sensations.¹³ Hence, some critics opt for a central state theory of mind that will be able to give a materialist conception of these states.

The Central State Theory

Even while behaviourism was dominating philosophy of mind in the early part of the 20th century, a different sort of materialist view was already emerging, one that identified mental states not with behavioural dispositions but instead with physical states of the brain. According to David Armstrong, this Materialist theory is what the American philosopher, Herbert Feigl calls the Central-state theory. This theory came into existence as a reaction to the inadequacies of behaviourism.

Cognitive science has been important in exploring the mind since philosophy of mind became a distinct discipline. The identity theory, like philosophical behaviourism, was affected by psychology. Neuro-scientific progress in the 20th century strongly impacted philosophers of mind, who saw the identification of particular mental states with particular brain states as a scientific breakthrough, similar to discovering that lightning is an electrical discharge or that heat is molecular motion. Many of the publications at the time attested to this new theory of the mind – the identity theory or the central state theory. According to Amy Kind, the rise of identity theory owes almost entirely to the publication of three

12. Oseyi, *The Mind-Body Problem in Philosophy*, 92.

13. Shanjendu Nath, "Behaviourism as a Precursor of Identity Theory of Mind." *International*

ground-breaking articles: “Is Consciousness a Brain Process?” by Ullin Place (1956), “The Mental and the Physical,” by Herbert Feigl (1958), and “Sensations and Brain Processes,” by Jack Smart (1959).

For the purpose of this article, only the central state theory or identity theory as espoused by Ullin Place and Jack Smart will be aptly discussed. This is because their theories form the basis for understanding David Armstrong theory of mind. However, as regards the identity theory of Feigl, it suffices to state that his theory recognised the states of direct experience of conscious beings as identical with certain aspects of their neural processes.

U.T. Place

Ullin Thomas Place was a British philosopher and psychologist. According to Paul Livingston, in 1956, Place offered what would become known as the identity theory: the theory that, as a matter of scientific fact, consciousness is a brain process. Place began his discourse by indicating his sympathy with Materialism. He could not bring himself to accept Descartes' and Hume's view, that the mental was a distinct realm from the physical. Although he sympathized with modern materialism, he argued that it was somewhat inadequate since it was behaviouristic. Hence, he opted for a new theory.

Place's identity theory was an attempt to fix the flaws of analytic behaviourism. As Armstrong pointed out, Place agreed that some mental concepts could be explained as dispositions to behave, but argued that others, such as consciousness, experience, sensation, and mental imagery, required some inner process explanation.¹⁴ However, Place did not adduce that these inner states implied dualism. He proposed a materialist account of inner-mental processes.

Place challenged the traditional philosophical arguments which claimed

14. Ullin Place, “Is Consciousness a Brain Process?” *British Journal of Psychology* 47, no. 1 (1956): 48-49.

that it was a mistake to consider consciousness as a brain process. He further disagreed with the idea that two unrelated expressions cannot both accurately describe the same thing, which was the basis for this argument. To support his view, he used Bertrand Russell's analysis of the 'is' of composition and argued that consciousness is indeed identical to a brain process.

As Joseph Ekong notes, for Place, the 'is' of composition is seen in statements like 'his table is an old packing-case' or 'Lightning is an electric discharge'. These statements are contingent statements, and are verified only through observation. In the first example, being a table does not necessarily mean being a packing-case. It just happens that in this situation, it is the case that the object is both a table and a packing case. Thus, for Place, the thesis 'consciousness as a brain process' should be understood in terms of the 'is' of composition.

Place argued that in order to establish the identity of consciousness and certain processes in the brain, it would be required to show that the introspective observations reported by the person can be explained by processes that happened in his or her brain. However, he said that this is hindered by what he calls 'phenomenological fallacy'. To express what he meant, Place wrote:

Suppose that somebody has a green after-image. [You can get one by looking intently at a red surface for a while, and then transferring your gaze to some white surface. A portion of the white surface will look to be more or less green.] In the case of the green after-image report, there is no green object in the subject's environment corresponding to the description that he gives. Nor is there anything green in his brain. So, the after-image cannot be identical with the brain process.¹⁵

Place maintains that the above argument is guilty of 'phenomenological fallacy',

15. Place. "Is Consciousness a Brain Process? 44-50

Which is the mistake of supposing that when someone describes his or her experience, he or she is describing the literal properties of mental states.

Commenting on the above, Jullian Leslie affirms that Place thinks that we should stop assuming that we only know what is in our minds, and start thinking that we experience things and events in the world rather than in our heads.¹⁶ Only then we can agree that brain processes and what we say about our mental processes are related. Thus, according to Armstrong, Place maintained that seeing a green after-image is not having something green. Instead, “when we describe the after-image as green... we are saying that we are having the sort of experience which we normally have when and which we have learned to describe as looking at a patch of green light.”¹⁷ It is this experience Place contends, that is to be identified with a brain process.

J. J. C. Smart

According to Steven Schneider, John Jamieson Carswell Smart, popularly known as Jack Smart was a British-Australian Philosopher. He is known to have further developed the identity theory of mind in his paper “Sensations and Brain Processes”. His theory was inspired by the identity theory proposed by Ullin Place. Like Place, Smart also applied his theory to mental concepts that analytic behaviourism could not explain well, such as sensations, mental imagery, and experience.

As remarked by Shanjendu Nath, Smart argued against two ideas. One, that physics can explain everything except sensations and consciousness. Two, that the mind and the body are different things; one spiritual and one physical. He used

16. Jullian Leslie, “Broad and Deep, but always Rigorous: Some Appreciative Reflections on Ullin Place’s Contributions to Behaviour Analysis.” *Behaviour and Philosophy* 29 (2001): 161.

17. David Armstrong, *The Mind-Body Problem: An Opinionated Introduction* (New York: Routledge, 2018), 7

Ockham's razor to reject them. Ockham's razor is a principle by a 14th century English logician, William Ockham. The principle states that entities must not be multiplied beyond necessity.¹⁸ Smart rejected these views because for him, they were multiplying entities beyond necessity.

According to Amy Kind, Smart's goal was to establish the identity of sensations and brain processes. He understood this identity as the identity between the referents of two descriptions that denoted the same entity. For instance, expressions such as “the Morning Star” and “the Evening Star”, which designate the same object - the planet Venus. The sense of the former is something like “the first celestial body visible in the morning sky,” while the sense of the latter is something like “the last celestial body visible in the evening sky.”

In order to firmly establish the identity of sensations to certain brain process, Smart went on to examine how sensation reports could be fitted into an adequate physicalist picture. According to him, when someone says “I have a yellowish-orange afterimage,” dualists view this as a report of something Psychological, while logical behaviourists like Ryle see it as a report of behavioural tendencies. However, Wittgenstein's view is that such reports of sensations are more like expressions, similar to crying or laughing, rather than descriptions of events. In other words, Wittgenstein opines that these reports do not describe anything at all.

As noted by Armstrong, contrary to the above claims, Smart argued that when one says things like “I have a yellowish-orange after image”, he is saying something like this: 'There is something going on which is like what is going on when I have my eyes open, am awake, and there is an orange illuminated in good light in front of me, that is, when I really see an orange (Armstrong, 1981).¹⁹ Smart's point is that a yellowish-orange after-image is not the same thing as a brain process.

18. Nath, “Behaviourism as a Precursor of Identity Theory of Mind” 2

19. David Armstrong, *Nature of Mind*. (Brighton: The Harvester Press Limited, 1981)

But it is a way of talking about a process, and that process happens in the brain.

David Armstrong's Theory of Mind

David Armstrong's theory of mind, which is the Central State theory of mind is quite unique as it tries to give a comprehensive materialistic account of all mental states; a feat that prior materialist theories of mind failed to achieve. By synthesizing two diverse views of mind – Rene Descartes' dualism and Gilbert Ryle's analytic behaviourism, Armstrong gives a new touch to the identity theory or central state theory. Banking on the modified theory, Armstrong uses a causal analysis and an empirical identification to present a materialist account of mind. In what follows, an attempt will be made to expose Armstrong's central state theory, making reference to his account of the nature of mental states, nature of dispositions, the movements of his central state theory and nature of consciousness.

David Armstrong and the Authority of Science

As earlier noted, Armstrong was interested in the mind-body problem, and being a materialist, was determined to resolve the problem by giving a complete analysis of man in purely physical terms. This he thought would be possible only through science. Indeed, Armstrong argued that the achievements recorded in the sciences pointed towards the possibility of explaining man in purely physical terms. He contended that scientists and philosophers who resisted this idea, did so because of their philosophical or moral or religious prejudices. Armstrong further noted that in the future, new evidences and new problems may come to light that will make science reconsider the physico-chemical view of man. However, he maintained that the drift of scientific thought in present times was clearly set towards the physico-chemical hypothesis.

Moving forward, Armstrong posed these questions: why should we concede science a special authority to decide questions about the nature of man? What of the authority of philosophy, of religion, of morality, or even of literature and art? Why

do I set the authority of science above all these? Why this "scientism"? His answer was simple – that science, despite its occasional mistakes provided the only tool to achieve intellectual consensus about contentious issues. He maintained that other non-scientific disciplines were yet to achieve such consensus.²⁰ Consequently, Steven Schneider remarks that, Armstrong decided to ply the route of science to address the mind-body problem which had lingered on for years. Adopting straight away the scientific view that humans are nothing more than physico-chemical mechanisms, Armstrong declared that the task for philosophy was to work out an account of the mind which is compatible with this view. He therefore embarked on the journey to formulate an account of the mind that would be compatible with the materialist's view of science.

David Armstrong's Concept of a Mental State

The early precursors of the identity theory or central state theory – U.T Place and J.J.C Smart, developed their theories solely for mental states such as conscious experiences and sensations. They opined that these mental states could be reduced to specific brain patterns of neural activity in the brain. However, when it came to other mental states such as beliefs or desires, they took a more behaviourist approach. In contrast, David Armstrong sought to provide a general account of all mental states, since he was of the opinion that all mental states could be reduced to the central state of the nervous system. Similarly, Armstrong asserted that Place and Smart's identity theories could not be applied to all mental states because they were primarily concerned with identifying the specific neural activity or brain state that gave rise to a particular mental state. In other words, they were interested in the stimulus that caused mental state. For instance, Smart wrote:

When a person says, 'I see a yellowish-orange after-image', he is saying something like this: 'There is something going on which is

20. David Armstrong, "Epistemological Foundations for a Materialist Theory of the Mind." *Philosophy of Science* 40, no. 2 (1973): 180.

like what is going on when I have my eyes open, am awake, and there is an orange illuminated in good light in front of me, that is, when I really see an orange.²¹

Here, the having of an orange after-image is explicated in terms of the stimulus: an orange acting on a person in suitable conditions. Place used a similar approach. Thus, their approach did not account for the response that followed from a mental state. In other words, their approach did not explain how mental states could causally interact with the physical world. In contrast, Armstrong's central state theory focused on both stimulus and response. He maintained that mental states were caused by central states of the nervous system but that mental states also had causal efficacy in producing behaviour, which he considered was the response.²²

In the light of the above, Armstrong asserted that “the concept of a mental state essentially involved, and was exhausted by, the concept of a state that is apt to be the cause of certain effects or apt to be the effect of certain causes.”²³ However, this conception of Armstrong did not arise just like that. It was greatly influenced by Descartes' dualism and Gilbert Ryle's analysis of dispositions.

The Movements of David Armstrong's Central State Theory

According to Stephen Mumford, Armstrong's central-state theory involves a two-stage argument or rather two distinct 'movements'. Armstrong maintains that the first step involves a logical analysis of mental concepts. This is a conceptual thesis. It is also called the Causal analysis of mind. It does not entail, but neither does it exclude, materialism. The second step of the argument is to identify these inner states with physico-chemical states of the brain. This is a contingent or scientific identification, and it yields Central-state Materialism.

21. Jack Smart, “Sensations and Brain Processes.” *The Philosophical Review* 68, No. 2. (1959): 142.

22. Armstrong, *Nature of Mind*, 20

23. Armstrong, “Epistemological Foundations for a Materialist Theory of the Mind.” 180

Causal Analysis of The Mind

Thomas Nagel notes that in Armstrong's causal theory, the concept of a mental state is the concept of something that is essentially the cause of certain effects and the effect of certain causes. What sort of effects and what sort of causes? Armstrong maintains that the effects caused by the mental state will be certain patterns of behaviour of the person in that state. To get a general idea of how Armstrong went about the causal analysis of mental states, it is pertinent at this point to examine his causal analysis of some mental states.

Purposes

According to Armstrong, the state of purpose is a mental state that is characterized by its causal role in bringing about behaviour. Specifically, he argues that the state of purpose is the state that causes an organism to engage in behaviour that is directed towards a particular goal or end. For example, if a person is hungry, the state of purpose causes him to engage in behaviour that is directed towards obtaining food. However, Armstrong notes that this is not the whole story. For him, a purpose is only a purpose if it works to bring about behavioural effects in a certain sort of way. He opines that we may sum up this sort of way by saying that purposes are information-sensitive causes. In other words, purposes direct behaviour by utilizing perceptions and beliefs. In the light of this, Armstrong posits that the mental state of purpose is a complex state that involves both perception and belief. Thus, for Armstrong, an account of purposes must rely in part on an account of perception and belief.

Perception and Belief

In Armstrong's view, perceiving is closely tied to behaviour. According to Armstrong, perceptions are “nothing but the acquiring of true or false beliefs concerning the current state of the organism's body and environment”.²⁴ Likewise,

24. Armstrong, *Narure of Mind*, 57

as noted by David Rosenthal, Armstrong opines that perceiving involves acquiring abilities to discriminate among different current states of our body and environment, thereby enabling the pursuit of objectives in accordance with those current states. These acquired abilities are beliefs. Since they are beliefs about current states of one's body and environment, they are perceptual beliefs. The acquiring of such beliefs is perceiving. Thus, Armstrong contends that by utilizing perception to identify the relevant features of the environment, an agent is able to direct its behaviour towards achieving its purpose.

Emotions

Armstrong opines that emotions can be explained in terms of the causal relations between our mental states and physical processes in the brain and body. He argues that emotions are caused by the bodily changes that accompany them. For example, we may experience a racing heart and sweating palms when we feel afraid. Hence, for Armstrong, bodily response is not simply a byproduct of the emotion but is instead an essential component of it.

More so, Armstrong argues that emotions can be explained in terms of their adaptive functions. He suggests that emotions serve to direct our attention and behaviour toward important stimuli in our environment.²⁵ For example, fear may motivate us to avoid potentially dangerous situations, while joy may motivate us to seek out pleasurable experiences.

The above, presents an idea of the means through which Armstrong went about the causal analysis of all mental concepts. According to Raymond Osei, the purpose of Armstrong's causal analysis of the mind was to elucidate the meaning of the term 'mind'.²⁶ Armstrong's conceptual thesis construes the mind as that which stands and operates in the causal chain between stimulus and response. However,

25. David Armstrong, *A Materialist Theory of the Mind* (New York: Routledge, 1968), 209

26. Oseyi, *The Mind-Body Problem in Philosophy*, 109

the causal analysis does not disclose the ontic nature of the mind.²⁷ Thus, for Armstrong, since the ontic nature of the mind cannot be fleshed by a conceptual analysis alone, the question then is to consider what empirical grounds sustain the identification of mental states with brain states.

The Identification of Mind and Brain

The second step of David Armstrong's argument for his central state theory involves a scientific identification. Consequently, Armstrong opened this discourse by noting that this empirical step in his argument had already been defended at length, by a number of writers such as Ullin Place and Jack Smart. For instance, in the identification of the mind and brain, Place used the following as his model statement: "Lightning is an electric discharge". He opined that the 'is' in the statement was the 'is' of composition. In other words, that the terms on either side of the 'is' referred to the same thing. Finally, Place maintained that just as "Lightning is an electric discharge" so too 'consciousness is a brain process'.²⁸ However, Armstrong maintained that Place's model statement was inadequate as it failed to capture the point about causal role.

Thus, Armstrong being influenced by the Australian Materialist, Brian Medlin, went on to assert that the statement: "The gene is the DNA molecule" was the sort of model that the Causal theory required. Indeed, Armstrong noted that just as mental states are states of the person defined solely in terms of causal relations to the objects or situations that bring the mental states about and the physical behaviour that constitutes their expression, in the same way, genes are defined solely in terms of their causal relations to hereditary characteristics. These hereditary characteristics could be said to be the 'expressions' of the genes and for Armstrong, there are good theoretical scientific evidence to identify genes with the DNA molecule at the centre of living cells.

27. Armstrong, *The Mind-Body Problem*, 355

28. Place, "Is Consciousness a Brain Process?" 45

Armstrong's final submission is that once it was affirmed that the concept of a mental state is the concept of a state of the person apt for the production of certain sorts of behaviour, the identification of these states with physico-chemical states of the brain was, nearly as good a bet as the identification of the gene with the DNA molecule.

David Armstrong on the Nature of Consciousness

Finally, to end the account of his central state theory, Armstrong considers an objection to his view of the mind; an objection which he says is shared by a good number of philosophers. Thereafter, he proceeds to show how the objection can be met. Armstrong asserts that the objection to his theory is that his view of mind as an inner principle apt for bringing about certain sorts of behaviour, would be a satisfactory account of the mind from an 'other-person' point of view, but will not do as a first-person account. To neutralize this objection, Armstrong makes special reference to the mental state – 'perception' and building on his causal analysis of this mental state, he posits that we should consider consciousness as an awareness (perception) of inner mental states by the person whose states they are. In other words, consciousness is a further mental state, a state 'directed' towards the original inner states. To buttress this point, he writes:

If I perceive a physical situation, then we have an inner mental state 'directed' in a certain way towards a certain physical situation. Now, if I am aware, not only of the physical situation, but also of the fact that I am perceiving, then we have a further mental state 'directed' in the same sort of way towards the original mental state. And if this further mental state, which qua mental state is simply a state of the person apt for the production of certain behaviour, can be contingently identified with a state of the brain, it will be a process in which one part of the brain scans another part of the brain. In perception, the brain scans the environment. In awareness of the

perception another process in the brain scans that scanning.²⁹

Stemming from the above, Armstrong notes that consciousness, or experience, then is simply the self-scanning system of the brain.³⁰ Put differently, it is an awareness of our own state of mind. According to Armstrong, the technical term for such awareness of our own mental state is 'introspection' or 'introspective awareness'.

In the final analysis, Armstrong claims that consciousness of our own mental state may be viewed as the perception of our own mental state. He maintains that, like other perceptions, it may then be conceived of as an inner state giving a capacity for selective behaviour, in this case, selective behaviour towards our own mental state.

Assessing David Armstrong's Theory of the Mind

Having considered the contents of David Armstrong's theory of mind, we can assert that Armstrong made a considerable effort to tackle the long-standing mind-body problem that had eluded philosophers prior to him. His account of the mind, however plausible has faced several criticisms. Therefore, this section aims to present both the arguments in favour of and against his theory of mind, as well as to explore its relevance to contemporary society.

In Support of David Armstrong's Theory of The Mind

David Armstrong's theory of mind is considered to be one of the most influential and sophisticated theories of mind proposed in the 20th century. In this context, it is worth examining some of the key arguments in support of his central state materialism.

One of the strengths of Armstrong's Central State Materialism is that it is supported by contemporary neuroscience, which has demonstrated that mental states and processes are correlated with specific patterns of neural activity in the

29. Armstrong, "Epistemological Foundations for a Materialist Theory of the Mind", 178

30. Armstrong, *The Mind-Body Problem*

brain. For example, studies have shown that different emotional states such as fear, happiness, and anger correspond to specific patterns of neural activation in certain brain regions. This suggests that mental states and processes are not independent of physical states and processes in the brain, but are instead rooted in them as Armstrong has opined.

Another strength of Armstrong theory is its simplicity. Armstrong's Central state theory offers a simpler explanation of the mind-body problem than other theories, such as dualism or idealism. By reducing mental states to physical states in the brain, Armstrong's theory eliminates the need to posit a separate, non-physical realm of existence for mental states. This is consistent with Ockham's razor, which states that the simplest explanation is usually the best one.

Another strength of Armstrong's theory is that it provides a compelling explanation for how mental causation can occur. Mental causation is the idea that mental states can cause physical events in the world. Early proponents of the central state theory like U.T Place and J.J.C Smart did not address this issue. They simply identified mental states with processes without showing how mental states can cause physical events in the world. Conversely, Armstrong's theory provides an account of how mental causation can occur. For example, in Armstrong's theory, when I want to pick up a pen, my desire to pick up the pen causes a specific pattern of neural activity in my brain. This neural activity, in turn, causes the behaviour of my arm moving in a certain way. In this way, mental causation is reduced to physical causation. Thus, in the theory, mental events are simply a subset of physical events, and their causal powers are explained in terms of physical processes.

Furthermore, according to Armstrong, Central state materialism avoids the interaction problem, which is the difficulty in explaining how mental states and processes interact with physical states and processes in the brain. Dualism, for example, posits that mental states and processes are separate from physical states and processes, which makes it difficult to explain how they interact with each other.

Armstrong's theory on the other hand, explains that mental states and processes are simply the result of physical states and processes in the brain, and therefore there is no need to posit a separate realm of existence for mental phenomena.

Thus, as noted by Stephen Mumford, in Armstrong's theory, there is the unity of mind and body. The mind and body are parts of a unified whole as the mind is identified with some part of the body. However, the mind is not identified with body parts such as the feet or the navel, but it is identified with those parts that biologists pick out as the central nervous system.

The Downside of David Armstrong's Theory of The Mind

Despite the contributions made by Armstrong to the philosophical discourse about the mind, his central state theory has been criticized by different philosophers on different grounds.

First, Hilary Putnam avers that Armstrong's central state materialism is faced with the problem of multiple realizability. Multiple realizability refers to the idea that the same mental or physical phenomenon can be realized by different underlying physical or biological and non-biological systems. For example, in Armstrong's theory, pain is viewed as a particular pattern of neural activity in the brain. However, Putnam argues that this is not the case because pain could also be realized in other physical systems that do not have brains, such as a computer simulation of a brain or a robot that is programmed to respond to harmful stimuli. This implies that pain is not just based on the physical features of brain activity, but rather comes from a more general functional structure of the system.

Another objection to Armstrong's central state theory, is its inability to adequately account for qualia. Qualia, are the subjective qualities of conscious experience; they are often described as the 'what it is like' of an experience, such as the way a particular colour looks or the way a certain taste feels.³¹ Armstrong did well in accounting for consciousness in his theory; he saw it as “perception or

31. Frank Jackson, “David Malet Armstrong (1926–2014).” *Routledge Encyclopaedia of Philosophy*. <https://www.rep.routledge.com/articles/biographical/armstrong-david-malet-1926-2014/v-1>. Accessed 30/12/2022

awareness of the state of our own mind, or a self-scanning system in the central nervous system.”³² However, he did not account for subjective aspect of consciousness – he did not account for qualia. Proponents of this objection against Armstrong's theory include Frank Jackson and Thomas Nagel. Frank Jackson's argument against central state materialism is known as the 'knowledge argument for qualia'. He argues that even if we had a complete understanding of the physical processes in the brain that underlie colour perception, for example, we would still not know what it is like to experience the colour red. In other words, there is something about the subjective experience of seeing red that cannot be reduced to or explained by the physical activity of the brain. Similarly, Thomas Nagel in his essay “What Is it Like to Be a Bat?” argues that there is something fundamentally subjective about the experience of being a conscious being, and that this subjective element cannot be reduced to or explained by physical processes alone.

As earlier noted, in Armstrong's theory, the mind and its processes are reduced to and explained by the physical processes that occur in the brain. This materialistic approach to understanding the mind has often been seen as incompatible with religious values, which often posit the existence of a non-physical, spiritual realm that is separate from the physical world. As such, Armstrong's theory has been criticized by some for its potential to undermine religious beliefs and values. The materialistic worldview that Armstrong's theory espouses can be seen as fostering an atheistic society since it suggests that there is no need to appeal to the supernatural to explain the world and its workings.

Another argument against Armstrong's theory is that from inadequacy of science. As earlier stated, Armstrong noted that he utilized science in formulating his theory because it was the sole discipline capable of arriving at a consensus on what was factual. He further argued that individuals in the scientific and philosophical communities who opposed this notion did so due to their moral,

32. Armstrong, *A Materialist Theory of the Mind*, 355

philosophical, or religious biases. However, in our opinion, such a claim is questionable. Such a claim overlooks the fact that other disciplines, such as mathematics and philosophy, can also reach consensus about certain truths or ideas. In fact, Thomas Kuhn posits that scientific consensus is not infallible and can change over time as new evidences emerge or as previous assumptions are questioned. Thus, science has its limitations, and other modes of inquiry, such as art and spirituality, may be equally valid and essential for human well-being.

Conclusion

In spite of the various criticisms levelled against Armstrong's theory of mind or the central state theory, it still deserves some encomium. Armstrong's goal was to address the long-standing mind-body problem by reducing all mental states to physical states in the brain. This ambitious aim deserves recognition, as it is an attempt to reconcile the seemingly irreconcilable concepts of the mind and body. His theory gained prominence during the mid-twentieth century, and it continues to have relevance in contemporary society today.

One area in which Armstrong's theory has been particularly relevant is in the field of neuroscience. The theory has provided researchers and philosophers a theoretical framework for interpreting advances in neuroscience in order to study the neural mechanisms underlying mental processes. Also, in the field of psychology, Armstrong's theory has implications for the diagnosis and treatment of mental disorders. By identifying the neural processes that underlie mental disorders, psychologists and psychiatrists can develop more targeted and effective treatments for conditions such as depression, anxiety, and schizophrenia.

Significantly, Armstrong's theory is also relevant in the field of artificial intelligence (AI). As researchers aim to make machines that can imitate human thinking, the theory offers a useful initial step for understanding the underlying processes that give rise to consciousness. It also helps researchers to identify the

essential features of mental states that need to be replicated in AI systems.

Lastly, Armstrong's theory is relevant to philosophical discussions on the nature of consciousness. While the precise nature of consciousness remains a subject of much debate, Armstrong's theory provides a clear starting point for understanding the relationship between physical processes in the brain and subjective experience. This knowledge could enable researchers to create new methods to treat and comprehend consciousness-related disorders like coma.

From this evaluation of Armstrong's theory of mind, we can easily deduce why he is an important contemporary philosopher of mind. The shortcomings of his theory of mind notwithstanding, his extensive discussions on the topic represent one of the most ambitious, thorough, and detailed approaches to mind-body materialism to date.

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