

# Neuropsych psychoanalysis and Dual-Aspect Monism

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**Funding:** No specific funding was received for this work.

**Potential competing interests:** No potential competing interests to declare.

## Abstract

Proponents of neuropsych psychoanalysis often invoke dual-aspect monism (DAM) as an epistemological framework to justify neuropsych psychoanalysis as a theoretical and clinical endeavor. This paper investigates whether two case studies from applied neuropsych psychoanalytic literature are consistent with the tenets of dual-aspect monism. The paper finds that while dual-aspect monism remains a promising framework for unifying neuroscientific and psychoanalytic paradigms, there is work to be done to make studies in applied neuropsych psychoanalysis consistent with a DAM framework. Otherwise, neuropsych psychoanalysis will remain neuroscience by another name.

## Introduction

The relationship between the brain and the mind is an enduring topic in philosophy, psychoanalysis, and neuroscience. A central concern in this domain is whether the mind is reducible to the brain. If we accept the notion that the mind is reducible to the brain, then we should study neurobiology to understand the mind. If we reject the notion that the mind is reducible to the brain, then we must look outside of neuroscience to inquire into the fundamental nature of the psyche. Whether one accepts or rejects the mind's reducibility to neurobiology influences what theories or disciplines in the mind sciences one can reasonably subscribe to. Certain belief systems, such as that of psychoanalysis and neuroscience, are often regarded as fundamentally opposed because they provide opposite answers to the reducibility question. However, there have been recent attempts to complicate the opposition between these two belief systems by creating a philosophical framework that resolves their opposing responses to the mind-body problem. Neuropsych psychoanalysis is one such attempt.

The field of neuropsych psychoanalysis arose primarily through the work of Mark Solms in the late 20th century as an attempt to integrate the epistemologies of psychoanalytic inquiry and neuroscience in a unified paradigm. Proponents of neuropsych psychoanalysis' legitimacy, including Solms, have invoked dual-aspect monism (DAM) to reconcile the traditionally opposed responses of psychoanalysis and neuroscience to the mind-body problem (Yovell et al., 2015, p. 1526). Dual-aspect monism is the perspective that the mind and the brain are ontologically one object, but the mind is not reducible to the brain epistemologically (Galgut, 2021, p. 319-320). Critics have challenged whether DAM can be invoked to support the neuropsych psychoanalytic project, with some even suggesting that DAM could undermine attempts to synthesize the two

fields (Galgut, 2021, p. 317-325). This paper will interrogate whether neuropsychanalysis, as variously formulated in its literature, is compatible with the constructions of dual-aspect monism its proponents invoke.

## Preliminaries

I want this paper to be a good-faith assessment of the use of DAM in justifying neuropsychanalysis. As such, I will attempt a faithful reconstruction of Solms' account of dual-aspect monism as he invokes it in support of the neuropsychanalytic project, following his references where provided. I will then sketch two case studies from the neuropsychanalytic literature that combine neuroscientific and psychoanalytic concepts to enhance clinical or research outcomes in the mind sciences. For each case study, I will assess whether the synthesis of neuroscience and psychoanalysis offered by the authors is compatible with a good-faith reconstruction of Solms' dual-aspect monism.

The first case study focuses on neuropsychanalytic concepts of brain connectivity, and the second focuses on the relationship between psychoanalytic and neuroscientific affect. I find both of these case studies reject central premises of DAM. I believe these case studies are representative of neuropsychanalysts' inability or refusal to engage with a non-reductionist concept of the mind. Instead, they offer a neuroscientific account of psychoanalytic phenomena, one that is wholly incompatible with DAM. I believe DAM is a useful framework for grappling with the mind-body problem and is a satisfactory way to combine the best of psychoanalytic and neuroscientific knowledge. However, this paper demonstrates through two case studies that DAM can be misapplied or ignored in neuropsychanalytic inquiry.

## Solms' Dual-Aspect Monism

In a 2015 paper co-written by Solms, Yovell et al. write:

*dual-aspect monism...posits that the mind and the brain are one entity... Nevertheless, we cannot have direct third-person perspective access to [the functions of the mind]...to understand and systematically study [the functions of the mind] we need to draw inferences...based on two different and irreducible sources: the study of **subjective experience** in individuals or groups and the study of **brain states and functions** in individuals and groups (2015, p. 1526, emphasis in original).*

This position might be rephrased as follows. The mind and the brain are ontologically identical. However, we cannot come to knowledge about the mind and the brain in the same way. We need two distinct, "irreducible" sources, and therefore two distinct, irreducible epistemologies to account for the mind and the brain. Yovell et al. refer to the existence of these two distinct epistemologies as "epistemological dualism" (Yovell et al., 2015, p. 1526). This is where dual-aspect monism gets its name: one object, in this case the "mindbrain", has two aspects, the mind, and the brain, that require separate ways of knowing (Yovell et al. 2015, p. 1526-1528). The separation of epistemologies for the mind and the brain under DAM is maintained by an axiom of irreducibility: we cannot reduce knowledge about the mind to knowledge about the

brain and vice-versa.

When Yovell et al. invoke irreducibility, they cite the work of David Chalmers. We will now turn to Chalmers to understand the technical specificities of irreducibility as it operates in DAM. Chalmers offers the following premises for the mind-body problem. Since these premises serve as the basis for DAM, they will also serve as a basis for the inquiries undertaken in this paper:

1. Conscious experience exists.
2. Conscious experience is not logically supervenient on the physical.
3. If there are phenomena that are not logically supervenient on the physical facts, then materialism is false.
4. The physical domain is causally closed. (1996, p. 161).

Chalmers argues that his position, that of naturalistic dualism, accepts all four premises and, in the absence of an alternative, should be the preferred way of conceptualizing the mind-body problem.<sup>1</sup> Chalmers defines naturalistic dualism as the belief that “Consciousness supervenes naturally on the physical, without supervening logically...” (Chalmers, 1996, p. 162).<sup>2</sup> Natural supervenience is ontological: there can be no change in consciousness without there also being a change in the physical.<sup>3</sup> Logical supervenience is epistemological: there can be no change in our knowledge of consciousness without there also being a change in our knowledge of the physical.<sup>4</sup> Chalmers argues that consciousness does not supervene logically on the physical, that changes in our understanding of consciousness *do not entail* changes in our understanding of the physical. Consciousness and the physical world are, as Yovell et al. term it, “scientifically independent,” and therefore we need separate sciences, separate epistemologies, to interrogate them (Yovell et al., 2015, p. 1526). In practical terms, this means that knowledge of consciousness, subjective experience, or mental life does not depend on the physical structures of the brain, and therefore we cannot use our understanding of the physical structure of the brain to come to knowledge about the mind. Any use of the physical to come to knowledge about the mental would violate the DAM framework, since that would involve the mental supervening logically on the physical. Now that we have defined DAM, we will proceed to our first case study, which attempts to combine neuroscientific and psychoanalytic concepts, and see if it violates DAM.

## Case Study 1: Brain Connectivity

In a 2016 paper, Salone et al. suggest that brain connectivity may be a perspective that makes it possible to integrate neuroscientific and phenomenological (psychoanalytic) accounts of the mental. Salone et al. define brain connectivity as an umbrella term that covers three distinct phenomena: “anatomical connectivity...defined as anatomical links between neuronal populations...functional connectivity, defined as patterns of statistical correlations between distinct activated brain areas; and...effective connectivity, defined as causal interactions between specific groups of neurons” (Salone et al., 2016, p. 2-3). They write of brain connectivity *in general* that “[brain connectivity]...may help further our understanding of complex mental phenomena such as consciousness, the influences of different contexts on meaning attribution, [and] the representation of the self [and] others” (Salone et al., 2016, p. 3). We will assume, for the purposes of this paper, that

“consciousness” has the same meaning in Salone et al. as it does in Chalmers, or that differences which arise in their constructions are trivial.<sup>5</sup> To understand if any or all of the three lines of inquiry contained in the notion of brain connectivity are compatible with DAM, we must interrogate each in turn. Recall that DAM is one major concept neuropsychologists use to avoid physicalist reductionism in their work. We are interested in seeing if the theories put forth by this case study are compatible with DAM or if the authors are merely performing reductionist neuroscientific research under the heading of neuropsychology.

Under DAM we cannot use the physical to explain the mental. Anatomical connectivity is trivially physical, since it relies on the observation of physical anatomic links between neurons. Effective connectivity is likewise physical, since it is defined as the causal interaction between specific groups of neurons. Per Chalmers’ fourth premise of the mind-body problem, the physical domain is causally closed: the only things which can affect physical things causally are themselves physical. Since neurons are physical, any causal interactions must arise with other physical entities, making effective connectivity a solely physical phenomenon.

This leaves functional connectivity as the only candidate for a non-physical concept of brain connectivity. While “statistical correlations” may reference the physical or be realized in the physical, they may also be realized in nonphysical ways. For instance, we could have statistical correlations among imaginary events. The non-physicality of “distinct activated brain areas” is more difficult to argue for. We might trivially assume that “distinct activated brain areas” refers to a physical object.<sup>6</sup> The statistical correlations among distinct brain areas are thus statistical correlations among physical objects. Using these correlations to explain consciousness violates DAM, since it implies the mental supervenes logically on relationships among the physical. Thus, all three notions of brain connectivity presented by Salone et al. are incompatible with DAM.

Let us now imagine how we could reformulate Salone et al.’s notions of brain connectivity to be compatible with DAM. Anatomical connectivity and effective connectivity must not be used to explain mental phenomena, such as consciousness. Functional connectivity might be modified to explain mental phenomena by interrogating statistical correlations among nonphysical entities rather than physical brain regions. For instance, one could measure statistical correlations among conscious experiences, such as sadness and the recurrence of a traumatic memory. Neither of these phenomena are physical: there is not a distinct anatomical object called “sadness” in the brain, nor does a “traumatic memory” have a distinct physical referent. Both are conscious experiences that must be identified phenomenologically by the person experiencing them. It would be appropriate in this instance to define statistical correlations among conscious experiences as being separate from the inherently physicalist notion of “brain connectivity.” The former could be used to explain the mental in a DAM framework, the latter could not.

## Case Study 2: Affect

In a 2021 paper, psychologist Daniela Flores Mosri suggests that the neuroscientific concept of affect and the psychoanalytic concept of affect could be integrated to enhance clinical outcomes. She refers to Solms for a discussion of

psychoanalytic affect. Solms writes: “According to Freud, affects are perceived in a distinctive modality of consciousness that is irreducible to the other perceptual modalities. The qualities of this modality are calibrated in degrees of pleasure and unpleasure, which are distinct from the qualia of vision, hearing, somatic sensation, taste, and smell” (Solms and Nersessian, 1999, p. 5). To rephrase, affect in a psychoanalytic sense is the conscious perception of pleasure or unpleasure that is irreducible to the senses or other more fundamental perceptions. Given the centrality of conscious experience in Solms’ definition, we can assume that psychoanalytic affect belongs to the domain of the mental in a DAM framework.

Mosri refers to Panksepp for a neuroscientific account of affect. Panksepp offers two definitions of neuroscientific affect. In the first definition, Panksepp writes: “Evidence suggests...the inherited neurodynamics of the mammalian brain...generate internally experienced emotional feelings [or affect]” (Panksepp, 2004, p. 24). Under this initial formulation, affect in neuroscience has two components: a dynamic relation between neurons and an emotional experience of feelings, with the former “generat[ing]” the latter (Panksepp, 2004, p. 24). In the absence of a more robust explanation of the concept of generation, I will interpret Panksepp as stating that dynamics between neurons cause the emotional experience of feelings. Recall Chalmers’ fourth premise of the mind-body problem, in which the physical domain is causally closed. The dynamic interrelation of neurons is trivially physical, since neurons are physical structures. If the dynamic interrelation of neurons causes experienced emotion, then experienced emotion (affect) in a neuroscientific sense must also be physical, since physical phenomena can only cause other physical phenomena.

In Panksepp’s second definition of neuroscientific affect, he writes “a variety of innate affective tendencies...emerge from the ancient organizational structure of the mammalian brain” (Panksepp, 2004, p. 24). Here, the definition changes slightly. Affect is now related to the *structure* of the mammalian brain, rather than its dynamics. Additionally, the relation between the brain and affect is one of “emerg[ing]” as opposed to “generat[ing]” (Panksepp, 2004, p. 24). The structure of the mammalian brain is trivially physical. Emergence is polysemous, and its use in this instance is nonspecific, so we must look elsewhere to see in what sense emergence operates. Panksepp writes “An additional and even more difficult task is to unravel how emotional feelings [affect] emerge from the neurodynamics of many interacting brain systems” (Panksepp, 2004, p. 17). Here, Panksepp implies there is an epistemological relation to be uncovered between the physical properties of brain systems and their emergent phenomena of feelings. This is a relation of logical supervenience, one of the meanings contained in the philosophical notion of emergence (O’Connor, 2021). We thus have a relation in which the physical (the structure of the brain) tells us something about something else logically or epistemologically (affect). If affect is physical, then we have the physical supervening on the physical, which is compatible with DAM. If affect is nonphysical in this second definition, then we have the nonphysical supervening on the physical, and this notion of affect would violate DAM. Notably, we would have to throw out this second concept of neuroscientific affect even before it can be brought into dialogue with psychoanalytic affect by Mosri.

This paper set out to do a charitable reading of neuropsychanalytic inquiry under DAM, which entails a charitable reading of the neuroscience its proponents cite. As such, I will assume affect in Panksepp’s second definition is physical so that DAM can be maintained. We are thus left with two neuroscientific notions of affect: affect as the physical phenomenon caused by the dynamics of the brain, and affect as the physical phenomenon that emerges from and is logically

supervenient on the structure of the brain. For the purposes of this paper, the two definitions are functionally identical: it does not matter whether affect is caused by the dynamics of the brain or emerges from the structure of the brain. In both cases, affect is physical, either by causal closure or a relation of logical supervenience on the physical. Note also that Mosri describes behaviors as being “driven by” neuroscientific affects, which I understand as affects causing behavior (Mosri, 2021, p. 7).<sup>7</sup>

With these definitions in place, we can proceed to Mosri’s neuropsychanalytic attempt to combine the psychoanalytic and neuroscientific notions of affect. She suggests that psychoanalytic affects, such as pleasure and joy, can be “derived from the activity of basic emotion systems” (Mosri, 2021, p. 7). These “basic emotion systems” are categories of neuroscientific affect identified by Panksepp (see Table 2 in Mosri, Mosri, 2021, p. 7). Mosri suggests that identifying the neuroscientific affect underlying a particular psychoanalytic affect can help explain behavior, or that knowing a particular behavior (and therefore its causal neuroscientific affect) can “complement or contrast against the clinician’s subjective impressions of what the patient is feeling” (Mosri, 2021, p. 7). In other words, being able to map psychoanalytic and neuroscientific affects onto one another is useful to combat faulty clinical assessments of how a patient feels.

To determine if Mosri’s understanding is compatible with DAM, we must interrogate her understanding of the epistemological relation between neuroscientific and psychoanalytic affect. According to Mosri, the relationship is one of derivation: if we understand the activity of the emotion systems (which are consubstantial with neuroscientific affect), then we can understand verbal expressions of psychoanalytic affect. This is a violation of DAM, since the physical (neuroscientific affect) is being used to explain the mental (psychoanalytic affect) as it manifests in the clinical encounter.

To rearrange this epistemological relation so as to be compatible with DAM, the logical supervenience of psychoanalytic affect on neuroscientific affect (the ability to “derive” the former from the latter) would have to be removed (Mosri, 2021, p. 7). Mosri’s model could be updated as such: neuroscientific affect causes behavior, but we can use neither neuroscientific affect nor behavior to determine a patient’s psychoanalytic affect and vice versa. While compatible with DAM, my suspicion is that this revised model would be unpalatable to clinicians and patients alike, since it suggests how a patient feels subjectively has no causal impact on their behavior. The better solution, in my opinion, is to accept a different answer to the mind-body problem. One could argue for a full reductionism, in which neuroscientific affect, psychoanalytic affect, and behavior are all physical and causally intertwined (what I suspect the position of most neuropsychanalysts actually is). Alternatively, one could argue for a more robust dualism, in which the mind and the brain are not ontologically coextensive, thereby sidestepping quagmires of causality between the two phenomena. Otherwise, unless one rigidly adheres to the duality of dual-aspect monism, it becomes easy to slip into a kind of physicalist reductionism, or some other incoherent position entirely.

## Conclusion

There is nothing inherently wrong with dual-aspect monism. On the contrary, I believe it is one of the best solutions to the mind-body problem because it allows anti-reductionist materialists to have their cake and eat it too. DAM is one of the few

philosophical frameworks that neither (1) dismisses psychoanalytical inquiry as non-rigorous, irrelevant, touchy-feely nonsense nor (2) engages in questionable metaphysics of souls, essences, or spirits. It allows neuroscientific knowledge production about the physical organ of the brain and psychoanalytical knowledge production about the phenomenological experience of subjectivity to occur in tandem and mutually enhance one another in the clinic without reduction. The problem is that DAM is often misapplied or ignored entirely by the figures engaged in neuropsychanalytic inquiry.

Neuropsychanalysts need more training to recognize when they engage in physicalist reductionism and when they offer a meaningful synthesis of neuroscience and psychoanalysis. I suspect the former often passes for the latter because a non-reductionist synthesis of neuroscientific and psychoanalytic epistemologies is difficult given the current state of neuroscientific inquiry, which tends towards materialism and reductionism. If neuropsychanalysts are to imagine a synthesis between these two fields, it must be undertaken carefully, with great attention to where concessions are made to neuroscience and the political function such concessions serve. It can be easier to get ahead in the mind sciences if one is a neuroscientific reductionist. However, there are instances in which neuroscientific reductionism is inadequate and produces both bad science and bad philosophy.

Those interested in the philosophical unification of these two disciplines should perform a careful study of the mind-body problem. There are more positions in play than reductionism, Cartesian dualism, or DAM. Understanding all of the epistemological formations at their disposal is key for clinicians and theorists in the mind sciences seeking to develop a workable epistemology for improving mental health that incorporates the best of phenomenological and scientific understandings of human experience.

## Footnotes

<sup>1</sup> A rehearsal of Chalmers' justification for these premises is beyond the scope of this paper. See Chalmers, 1996, p. 161-165 for a full discussion.

<sup>2</sup> Careful readers of Chalmers will note his language here is "logically or 'metaphysically'" (Chalmers, 1996, p. 162). Both the formulation of his premise and his usage of the terms throughout his text suggest they are effectively interchangeable for the purposes of this paper, so I have included only "logically" here for clarity.

<sup>3</sup> Paraphrased from the Stanford Encyclopedia of Philosophy's entry on Supervenience (McLaughlin & Bennett, 2021).

<sup>4</sup> Paraphrased from the Stanford Encyclopedia of Philosophy's entry on Supervenience (McLaughlin & Bennett, 2021).

<sup>5</sup> It should be noted that Salone et al. never provide a definition of consciousness, so interrogating any differences that may arise between their conception and Chalmers' may be guesswork at best.

<sup>6</sup> One could argue otherwise. For instance, the notion of a "brain area," even one that is "distinct" is, ironically, nonspecific and nontechnical. Since no *specific* anatomical structure has been invoked, one could read this phrase as referring to nonphysical structure, a metaphorical or conceptual brain area. However, this line of reasoning is arbitrarily convoluted



and ultimately, I believe, a bad-faith interpretation of Salone et al.

<sup>7</sup> I believe this interpretation is sufficiently trivial so as to not require justification.

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