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The Mind-Body-Body Problem

From the point of view of Husserl's ontology, the traditional mind-body problem looks hopelessly simplistic. Not only must we deal with relations between mind— indeed consciousness, soul *[psyche]*, spirit [human personhood]—and body. We must address different aspects of the body itself as living organism and as material thing. This *body-body* problem is suppressed in a Cartesian ontology that reduces the body to a mechanism in the sense of seventeenth-century physics, as Descartes sought to reduce all of physics to mechanics.

David Woodruff Smith**

It seems to me that post-Kripke, the most promising line of attack on the mind-body problem is to see whether any sense can be made of the idea that mental processes might be physical processes necessarily but not analytically.

Thomas Nagel***

I. Introduction

There are at least three distinct philosophical problems about the mind and the body: (1) the Traditional Mind-Body Problem; (2) the Body Problem; and (3)

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** See David Woodruff Smith, "Mind and Body," in *The Cambridge Companion to Husserl* (Cambridge: Cambridge University Press, 1995), pp. 323-393, at p. 358.

*** Thomas Nagel, "The Psychophysical Nexus," in Paul Boghossian and Christopher Peacocke (eds.), *New Essays on the A Priori* (Oxford: Clarendon/Oxford University Press, 2000), pp. 433-471, at p. 434.

Mind-Body-Body Problem. The Traditional Mind-Body Problem is how to account for the existence and character of the mental—specifically, consciousness, in the sense of subjective experience, and whatever includes or entails consciousness— in a physical world. The Body Problem is that neither materialism nor dualism, nor indeed the Traditional Mind-Body Problem itself, can be intelligibly formulated because no one has a true theory of the nature of the physical world. In other words, given the Body Problem, the Traditional Mind-Body Problem dissolves. The Mind-Body-Body Problem, by contrast to the other two problems, is how to understand the relation between (i) one's subjective consciousness, (ii) one's living and lived body *(Leib),* that is, one's animate body with its "inner life" and "point of view;" and (iii) one's body *(Kórper)* considered as an objective thing of nature, something investigated from the theoretical and experimental perspective of natural science (physics, chemistry, and biology). To state this problem another way, consider that anyone's own proper name picks out her conscious subjectivity, her *Leib,* and her *Kórper* alike. But how can something be at once a conscious subject, a living and lived body, and an objective material thing?[1]

The aim of this paper is to offer a solution to the Mind-Body-Body Problem. The solution, in a nutshell, is that the living and lived body *(Leib)* is metaphysically and conceptually basic, in the sense that one's consciousness, on the one hand, and one's corporeal being *(Kórper),* on the other, are nothing but *dual aspects* of one's lived body. One's living and lived body can be equated with one's being as an *animal',*[2] therefore, this solution to the Mind-Body-Body Problem amounts to an "animalist" version of the dual aspect theory.[3] On this view, every conscious individual creature[4] is literally identical with its living and lived body *(Leib)* or the animal that it is; in particular, each conscious

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[1] See Edmund Husserl, *Ideas Pertaining to a Pure Phenomenology and to a Phenomenological Philosophy, Second Book,* trans. R. Rojcewicz and A. Schuwer (Dordrecht: Kluwer, 1989), §§11— 13, 19-20, and 41. See also Smith, "Mind and Body," pp. 346-372. Smith claims that Husserl's view is an ontologically more refined version of a Davidson-style anomalous monism (pp. 362- 367). We do not think that this interpretation of Husserl is correct; but if it were, then to that extent our view would differ from Husserl's—see Section V below.

[2] A distinction can be drawn between *animals per se* and *intact animals:* intact animals are minimally healthy, minimally mature, and possess all their basic organs. Another distinction can be drawn between animals per se, intact animals, and *sound animals:* sound animals are intact animals that are optimally healthy and optimally mature. For the purposes of this paper we will make the convenient simplifying assumption that all animals are sound animals.

[3] We introduced this approach in an earlier paper; see Robert Hanna and Evan Thompson, "The Spontaneity of Consciousness. A Neurophenomenological Investigation", forthcoming *Canadian Journal of Philosophy.*

[4] We are using 'creature' in a semi-technical way to mean the same as 'finite being'. In other words, divine or otherwise infinite beings are not being considered.

individual human being is literally identical with his or her living and lived body or the human animal that he or she is. Furthermore, an animal is a being such that it has intrinsic mental properties and physical properties that entail each other with non-analytic necessity. In other words, the primary metaphysical and conceptual datum in the philosophy of mind is neither a subjective conscious mind, nor an objective material body, but rather an animal, construed as essentially a bearer of metaphysically complementary mental properties and physical properties. This animalist solution to the Mind-Body-Body Problem, we argue, is strongly supported by (a) empirical data from cognitive ethology, and (b) first- person data from the phenomenology of human embodiment. It is also supported by critical contrast with Donald Davidson's anomalous monism and David Chalmers's naturalistic dualism.

II. The Hard Problem, the Harder Problem, and the Body Problem

The Traditional Mind-Body Problem is how to account for the existence and character of the mental in a physical world. It has been argued that, when the mental is specified as subjective experience or "phenomenal consciousness," this problem is "hard" in the sense that it does not seem to belong to the "easy" problems about the functional capacities of the mind that the natural sciences are in principle able to solve on their own.[5] Some, most notably Chalmers,[6] have drawn the conclusion that conscious experience is irreducible to the physical world. The irreducibility of consciousness, however, leads to an even harder problem—a problem about mental causation:

(1) Conscious minds can cause physical things (by common sense).[7]
(2) In order to cause physical things, conscious minds must be physical (by the principle of the causal closure of the physical: only physical things can cause physical things).

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[5] See David J. Chalmers, *The Conscious Mind* (New York: Oxford University Press, 1996), Introduction; David J. Chalmers, "Facing Up to the Problem of Consciousness," *Journal of Consciousness Studies* 2 (1995): 200-219. The *locus classicus* of this argument is Thomas Nagel, "What Is It Like to Be a Bat?," reprinted in his *Mortal Questions* (New York: Cambridge University Press, 1979), pp. 165-180.

[6] Ibid.

[7] See Jerry Fodor, "Making Mind Matter More," in his *A Theory of Content and Other Essays* (Cambridge, MA: The MIT Press/A Bradford Book, 1990), pp. 137-159, at p. 156: "if it isn't literally true that my wanting is causally responsible for my reaching, and my itching is causally responsible for my scratching, and my believing is causally responsible for my saying ..., if none of that is literally true, then practically everything I believe about anything is false and it's the end of the world."

(3) But conscious minds cannot be physical (i.e., mental properties or facts cannot be reduced to physical properties or facts, in the technical sense that mental properties or facts are neither type-identical to nor logically supervenient on fundamental physical properties or facts).[8]
(4) Therefore, conscious minds cannot cause physical things.

Contradiction! It would seem that either one or more of the premises must be rejected or reinterpreted, or that the inference to (4) is invalid. But each premise is arguably well supported and the reasoning seems valid. So the harder problem is *very* hard.

A tempting response to this argument would be to deny (3) and thereby embrace materialism, the thesis that the mental is metaphysically and explanatorily reducible to the physical world (again in the technical sense that mental properties or facts are either type-identical to or logically supervenient on fundamental physical properties or facts). The materialist would thereby convert the Traditional Mind-Body Problem into the seemingly more manageable problem of how to reduce the mental to the physical.

But there are two problems with this move. First, even supposing a reduction is possible, there is the worry that whatever causal powers the mind actually has are effectively preempted by physical causes, thereby making the mental causally irrelevant (in violation of (1)). Second and more importantly, however, there is good reason to think that the materialist cannot even be allowed to frame the issue in this way. The reason is that *no one has a true theory of the nature of the physical world.* Indeed, as Carl Hempel pointed out,[9] there is a nasty dilemma here: given the history of scientific revolutions (for instance, the transition from classical Newtonian physics to relativity theory and quantum mechanics), we have every reason to believe that our best current physical theory is wrong not merely in its minor details but in major respects; but on the other hand, if we

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[8] There are a number of different anti-materialist arguments to this conclusion in the literature: (1) The Modal Argument: see Saul Kripke, *Naming and Necessity,* second edition (Cambridge, MA: Harvard University Press, 1982), pp. 148-155. (2) The Explanatory Gap Argument: see Thomas Nagel, "What Is It Like to Be a Bat?", and Joseph Levine, "Materialism and Qualia: The Explanatory Gap," *Pacific Philosophical Quarterly* 64 (1986): 354-361. (3) The Knowledge Argument: see Frank Jackson, "Epiphenomenal Qualia," *Philosophical Quarterly* 32 (1982): 127-136, and "What Mary Didn't Know," *Journal of Philosophy* 83 (1986): 291-295. (4) The Zombie Argument: see David Chalmers, *The Conscious Mind,* Chapters 3-4. (5) The Inverted Qualia Argument: for discussion see David Chalmers, *The Conscious Mind,* Chapter 7. Each of these five arguments has shortcomings and has provoked critical replies from materialists. In Hanna and Thompson, "The Spontaneity of Consciousness," we advance a new anti-materialist argument, which aims to avoid the defects of the other five: (6) The Multistable Qualia Argument.

[9] See Carl Hempel, "Comments on Goodman's *Ways of Worldmaking,"* Synthese 45 (1980): 193-199.

assume that we will eventually have a true theory of the nature of the physical world, and that our best current physical theory will be continuous with it, then we are either vaguely appealing to a theory that does not yet exist or merely begging the question. Barbara Montero has forcefully argued that Hempel's dilemma neatly traps the materialist: since no one has a true theory of the nature of the physical world, the materialist cannot reasonably claim to be able to make sense of his claim that the mental is reducible to the physical.[10] Noam Chomsky makes the same point:

> [Materialism] will be a coherent position if its advocates tell us what counts as "physical" or "material." Until that is done we cannot comprehend the doctrine, let alone such derivative notions as "eliminative materialism" and the like.*[11]

But Chomsky also extends this line of criticism to a more general conclusion: "in the absence of a coherent notion of 'body', the traditional mind-body problem has no conceptual status."[12]

This conclusion bears on dualism nor less than materialism. Dualism is the doctrine that the mental is something over and above the physical, that is, that the mental is irreducible to the physical, and that (at least as possibilities but possibly also as necessities) (a) one's own subjective consciousness can exist independently of any objective material body (disembodied Cartesian souls), and (b) one's own objective material body can exist independently of any subjective consciousness (zombies in the philosophical sense). In other words, dualism, like materialism, assumes that that there exists a true theory of the nature of the physical world.

So given the Body Problem—that neither materialism nor dualism can be intelligibly formulated, because no one has a true theory of the nature of the physical world—the Traditional Mind-Body Problem itself is unintelligible.

III. The Mind-Body-Body Problem and Animalism

Let us assume that the Traditional Mind-Body Problem has been dissolved by the Body Problem. What about the Mind-Body-Body Problem? This problem is how to understand the relationship between my subjective consciousness, my

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[10] See Barbara Montero, "The Body Problem" *Nous* 33 (1999): 183—200. See also T. Crane and H. Mellor, "There is No Question of Physicalism," *Mind* 99 (1990): 185-206, and Barbara Montero, "Post-Physicalism," *Journal of Consciousness Studies* 8 (2001): 61-80.

[11] Noam Chomsky, *New Horizons in the Study of Language and Mind* (Cambridge: Cambridge Univ. Press, 2000), p. 85.

[12] Chomsky, *New Horizons in the Study of Language and Mind*, p. viii.

living and lived body *(Leib)*, and my body as an objective material thing *(Korper)*. Is this problem dissolvable too by the Body Problem? To answer this question, we need to determine how the three terms of the problem are picked out or individuated: (i) Consciousness or subjective experience as such can picked out and defined by first-person methods, such as the first-person performance of the mental act of reflexive attention (which, in Husserlian phenomenological terms, is responsible for disclosing the *a priori* correlational structure of intentional act or *noesis* and intentional content or *noema)*. (ii) The living and lived body can be picked out and defined both phenomenologically in the first-person (on the basis of one's own experienced vitality and animateness, one's sentience), and also observationally in the third-person and empathically in the second-person[13] as the individual animal that one is (in the cognitive-ethological sense of'animal': see Section IV). (iii) The body as an objective material thing can be picked out and defined theoretically and experimentally in the third-person by contemporary physics, chemistry, and biology. In this way, the terms of the Mind-Body-Body Problem can be specified without committing us to any problematic Cartesian assumptions about the ultimate nature of the mind, or to any unproven scientific assumptions about the ultimate nature of the body. The problem can then be formulated thus: how can something be at once a subjective mind (as phenomenologically defined), a living and lived body or animal (as defined by cognitive ethology), and an objective material thing (as defined by contemporary physics, chemistry, and biology)? In this way the Mind-Body-Body Problem holds *even if no one has a true theory of the nature of the physical world.* Hence it is not affected by the existence of the Body Problem.

This way of proceeding also enables us to give non-Cartesian, non-question-begging definitions of mental properties and objective physical properties: (a) mental properties are the properties ascribed to things by means of the phenomenological criteria employed in first-person methods, and (b) objective material properties are the fundamental physical properties[14] ascribed to things by means of the third- personal criteria of contemporary physics, chemistry, and biology. Hence, another way of formulating the Mind-Body-Body Problem is: how can something be at

[13] See Evan Thompson, "Empathy and Consciousness," *Journal of Consciousness Studies* 8 (2001): 1-32.

[14] Fundamental physical properties should not be confused with *fundamentally physical properties.* Fundamental physical properties are properties of the most basic physical entities, forces, and processes. But fundamentally physical properties are physical properties that inherently exclude mental properties. Only philosophers in the grip of Cartesianism will assume that fundamental physical properties must be fundamentally physical properties: that is, once we have given up Cartesianism, there is no good reason to assume that fundamental physical properties will inherently exclude mental properties. See Montero, "Post-Physicalism."

once a bearer of mental properties, and a bearer of objective material properties? When the problem is formulated this way, however, a surprisingly simple solution pops out: a *Leib* or animal is *essentially* a bearer of both the mental properties that constitute a subjective mind and the fundamental physical properties that constitute an objective material body. In other words, the *Leib* or animal is metaphysically and conceptually basic in the sense that a subjective conscious mind and an objective material body are *dual aspects* of an animal.

Let us make this thesis more precise. The notion of "dual aspects" can be defined as follows:

> X and Y are dual aspects of Z if and only if (a) X is an intrinsic property of Z; (b) Y is an intrinsic property of Z; (c) X and Y are the only intrinsic properties of Z; (d) X and Y are not type-identical; (e) neither X nor Y is logically supervenient on the other;[15] and (f) X and Y are non-analytically (that is, non-logically, synthetically, or "strongly metaphysically") necessarily[16] equivalent.

"Non-analytic necessity" (i.e., non-logical necessity, synthetic necessity, or strong metaphysical necessity) can in turn be defined as follows:

> A proposition *P* is non-analytically necessary if and only if (i) *P* is true in every member of a class *K* of logically possible worlds; (ii) *K* is smaller than the class of logically possible worlds; (iii) *K* is larger than the class of physically possible worlds; (iv) *K* includes the class of physically possible worlds; (v) *K* is the class of logically possible worlds consistent with the underlying metaphysics of our actual world; and (vi) *P* takes no truth-value in every logically possible world not belonging to *K* ,[17]

In other words, something has dual aspects by virtue of its being constituted by a non-analytic necessary equivalence relation between its two aspects, even though those aspects are mutually irreducible. Or in still other words, something has dual aspects by virtue of its being constituted by the *metaphysical complemen-*

[15] It should be noted that the denial of the logical supervenience of X on Y also entails the denial of token-identity for instances of X and Y: if logical supervenience fails, then it is logically possible (hence also "weakly metaphysically possible"; see note 18) for something to change its X-properties without changing also its Y-properties, and this violates the indiscemibility of identicals.

[16] On the distinction between analytic necessity and synthetic necessity, see Robert Hanna, *Kant and the Foundations of Analytic Philosophy* (Oxford: Clarendon/OUP, 2001), Chapter 5. On the closely-related distinction between logical or "weak metaphysical" necessity and "strong metaphysical" necessity, see Chalmers, *The Conscious Mind*, pp. 136-138.

[17] Because non-analytic necessity is only a partial function from worlds to truth-values, whereas analytic necessity is a complete function, it follows that non-analytic necessity cannot be defined in terms of analytic necessity—unlike relative necessity, physical necessity, etc., which can be so defined. Non-analytic necessity is *restricted* metaphysical necessity.

tarity of its two aspects. So the solution to the Mind-Body-Body Problem is that neither a subjective conscious mind nor an objective material body *(Körper)* is metaphysically or explanatorily autonomous, but instead they are metaphysically complementary aspects of a *Leib* or animal. Animals are beings such that they have both mental properties and fundamental physical properties, and these properties correspondingly entail each other with non-analytic necessity.[18] We call this the "animalist" solution to the Mind-Body-Body Problem.

The animalist solution to the Mind-Body-Body Problem is a specification of the general doctrine of animalism. The general doctrine of animalism includes four theses. The first thesis, *dual aspectism,* says that mental properties and objective material properties are non-analytically necessarily equivalent, mutually irreducible, intrinsic features of a third sort of thing that is neither purely mental nor purely material. The second thesis, *dual aspect animalism,* says that the mental properties that constitute a subjective mind, and the material properties that constitute an objective body, are nothing but dual aspects of an animal. The third thesis, *animal embodiment*, says that conscious individual creatures are literally identical with animals—hence more specifically, conscious individual humans are literally identical with human animals.[19] By the indiscemibility of identicals, this thesis directly entails a subsidiary principle, *the animal embodiment principle:* necessarily, for every creature X, X has consciousness or subjective experience if and only if X has an animate body. Finally, the fourth thesis, *animal causation*, says that the total set of non-analytically necessary mutual connections between the mental properties that constitute a subjective mind, and the

[18] This points up a subtle but crucial difference between our view and Nagel's: he takes the non-analytically necessary equivalence relation between mental and physical properties to be one of *identity*. But that seems to be a mistake if the properties are mutually irreducible. Nagel has been led astray here, we think, by his uncritical adoption of Kripke's modal semantics. In effect Nagel has assumed that if mental properties are not identical to physical properties according to the *primary intension* of a mentalistic term, then if they are nevertheless metaphysically necessarily mutually connected, they must be identical according to the *secondary intension* of a mentalistic term. But in fact there is another option: they can be necessarily mutually connected by non- analytic necessity, which is *not* a form of identity. For the distinction between (a) logical or weak metaphysical necessity according to primary intensions, and (b) logical or weak metaphysical necessity according to secondary intensions (aka., "two-dimensional modal semantics"), see Chalmers, *The Conscious Mind,* pp. 56-69.

[19] See Eric Olson, *The Human Animal* (New York: Oxford University Press, 1997). Olson also claims that human persons are literally identical with human animals, but this seems too strong. Human individuals are one sort of thing and human persons are another. For instance, when you were a fetus you were a human individual but not yet a human person. On our view, human persons are irreducible functional roles of human animals. So human persons are not literally identical with human animals even though they always have human animals as their functional role players.

fundamental physical properties that constitute an objective body, includes a proper subset made up of law-governed, two-way causal connections, namely, "upward" or material-to-mental and "downward" or mental-to-material causal connections. In other words, focusing on the downward direction, animals are essentially such that they can cause certain physical things (i.e., behavioral movements of their own objective material bodies) by virtue of their having certain mental properties (i.e., properties whose instances are conscious volitions). In the rest of this paper, we will make a case for the first three theses of dual aspectism, dual aspect animalism, and animal embodiment (including the animal embodiment principle). The fourth thesis, if true, is a solution to the harder problem—the problem of mental causation—and will be argued for elsewhere.[20]

IV. Cognitive Ethology and Animalism

What is an animal? 'Animal' is a vague term. In biology, animals constitute one of the five kingdoms of living things: Monera (bacteria), Protoctists, Fungi, Plants, and Animals. Our usage of the term, however, is intended to coincide with its use in cognitive ethology.[21] Cognitive ethologists, by hypothesis, take the animals they are studying to be living creatures with mental capacities, including consciousness and intentionality. The boundaries of the class of animals as conceived in cognitive ethology cannot now be precisely fixed (indeed, it seems unlikely that there are sharp boundaries to be had for this domain). We regard such boundary-fixing as an entirely empirical matter that is up to cognitive ethologists, not philosophers of mind. No matter how cognitive ethology ultimately determines this boundary, we can assent to it.

What we as philosophers of mind are primarily interested in is how cognitive ethologists constitutively characterize those living beings that definitely fall into the class of animals in their pragmatic or special and technical sense of 'animal' (for instance, humans, chimpanzees, monkeys, horses, dogs, cats, birds, and so on). It is of course not possible to summarize the empirical results of cognitive

[20] See Robert Hanna and Evan Thompson, *The Enactive Mind: A Theory of Cosciousness and International Causation*, work-in-progress.

[21] See C. Allen and M. Bekoff, *Species of Mind* (Cambridge, MA: The MIT Press, 1997); D.R. Griffin, *The Question of Animal Awareness* (New York: Rockefeller University Press, 1976); D.R. Griffin, *Animal Thinking* (Cambridge, MA: Harvard University Press, 1984); and D.R. Griffin, *Animal Minds* (Chicago: University of Chicago Press, 2001). It is relevant that "Griffin was directly stimulated to write his 1976 book about animal awareness by interactions he had with Nagel while they were both at the Rockefeller University (Griffin, personal communication)" (Allen and Bekoff, *Species of Mind*, p. 141).

ethology in a few words. But even at the risk of over-simplification, we can nevertheless say with some confidence that animals in the cognitive ethologists' sense are living creatures that (i) are token-reflexive foci of a variety of causal and semantic transactions with their local environments; (ii) are causal sources of a variety of self-initiated and informationally-sensitive movements in space and time; (iii) are capable of sense-perception and feeling, and therefore have an "inner life;" and finally (iv) have a "point of view," that is, have an egocentric, somatic (proprioceptive and kinesthetic) perspective, which may, as in the case of primates (and birds) be dominated and directed by vision, but need not be (as in the philosophically famous case of echolocating bats).[22] Speaking generally and philosophically, then, we will say that animals in the cognitive ethologists' sense are essentially "subjectively centered" living creatures.

V. Animalism and Human Embodiment

According to Husserl in *Ideas II* and to existential phenomenologists such as Merleau-Ponty,[23] but also according to some contemporary philosophers of mind and cognitive scientists, I consciously experience myself not merely in time and as happening over time, but also located in space and as taking up space.[24] When I consciously experience sinus pain, the sound of wind against the window of my study, the taste of hot coffee, or the look of books and papers strewn all over my desk, I always experience it *right here* and not *over there*. To be sure, the spatiality of our conscious experience has been denied by other contemporary philosophers of mind, even by some of those who are fully committed to the use and conceptual integrity of first-person methods. For example, John Searle writes that "our consciousness itself is not experienced as spatial, although it is experienced as temporally extended."[25] Similarly—and ironically for someone who asserts the non-analytic identity of the mental and the physical—Nagel writes that "mental concepts do not obviously pick out things or processes that take up room in the spatio-temporal world to begin with. If they did, we could just get hold of some of those things and take them apart or look at them under

[22] See Nagel, "What Is It Like to Be a Bat?"

[23] See Maurice Merleau-Ponty, *Phenomenology of Perception*, trans. Colin Smith (London: Routledge Press, 1962), Part One, Chapter 3.

[24] See Naomi Eilan, Rosaleen McCarthy, and Bill Brewer (eds.), *Spatial Representation* (Oxford: Basil Blackwell 1993, and Oxford University Press, 1999); and Quassim Cassam, *Self and World* (Oxford: Oxford University Press, 1997).

[25] John Searle, *The Rediscovery of the Mind* (Cambridge, MA: The MIT Press/A Bradford Book, 1993), p. 127.

a microscope."[26] Yet if, as animalism maintains, states of subjective experience are instantiations of mental properties in a *Leib,* then there is nothing to prevent a concept that picks out one of these mental properties from also picking out something in space and time—something that could also be treated as a *Korper,* and taken apart or looked at under a microscope. More generally, consciousness is subjectively experienced as spatial precisely because conscious states of creatures, as such, all occur at or in the living and lived body, hence at or inside the animal.

Nagel also writes:

> The right point of view [on the mind-body relation] would be one which, contrary to present conceptual possibilities, included both subjectivity and spatio-temporal structure from the outset, all its descriptions implying both these things at once, so that it would describe inner states and their functional relations to behavior and to one another from the phenomenological inside and the physiological outside simultaneously—not in parallel. The mental and physiological concepts and their reference to this same inner phenomenon would then be seen as secondary and each partial in its grasp of the phenomenon; each would be seen as referring to something that extends beyond its grounds of application.[27]

Our response to this line of thought is: yes, of course! The new concept that Nagel is looking for—the concept of a "subjectively centered" living creature, *Leib,* or animal—is staring him right in the face. There seem to be two reasons he does not see it. First, he fails to draw the distinction between *Leib* and *Korper,* despite the robust phenomenological data indicating this distinction (to say nothing of the extensive phenomenological literature in which it is discussed). Second, Nagel is uncritically committed to a reductive, compositional account of reality,[28] despite the existence of fairly robust scientific and metaphysical evidence *for* "ontological emergence"[29]—the existence of relational processes that are not reducible to the intrinsic properties of the elements in the relation— and hence *against* mereological supervenience, the supervenience of higher-level physical or macrophysical (and especially functional) properties of wholes on the lower-level or microphysical properties of their parts.

[26] Thomas Nagel, "The Psychophysical Nexus," p. 441.

[27] Ibid., pp. 457-458.

[28] Ibid., pp. 438-440, 464-68.

[29] See Michael Silberstein and John McGeever, "The Search for Ontological Emergence," *Philosophical Quarterly* 49 (1999): 182-200, and Michael Silberstein, "Converging on Emergence: Consciousness, Causation, and Explanation," *Journal of Consciousness Studies* 8 (2001): 61-98. See also Paul Humphreys, "Aspects of Emergence," *Philosophical Topics* 24 (1996): 53-70, and "Emergence, Not Supervenience," *Philosophy of Science* 64 (Proceedings) (1997): S337-S345.

The distinction between *Leib* and *Körper* is closely connected with another phenomenological fact. At all times I consciously experience a "feeling of life" that indicates my intimate union with my *Leib*. Otherwise put, at any given time *I f eel more or less lively*. This feeling is scalar—it comes in degrees—and is also manifest throughout the entire body. Everyone knows first-hand the radical difference between the phenomenal characters of vigor and torpor. These characters in turn have their immediate objective physiological complements in variable heart rates, adrenaline levels, hormone levels, skin temperature, and so on.

So according to suitably attentive first-person methods, and also to appropriately coordinated third-person methods, my mind is an *embodied mind.*[30] Indeed, as a conscious human individual I find myself to be literally identical with my living and lived body. My being in pain just is my *Leib's* being in pain.

This line of thought neatly explains the widely-shared philosophical intuition that a teeming, populous nation (China is the standard example) would not have any of my subjectively conscious states even if it instantiated all of the computational-functional roles of my mental states:[31] a nation is not itself an animate body. It also neatly explains the later Wittgenstein's philosophical intuition that the living human body in its everyday environment literally *manifests* consciousness and other mental states.[32] Based on the phenomenology of human embodiment, then, it is inconceivable that any creature could be subjectively conscious and lack an animate body, and correspondingly inconceivable that any creature could have an animate body or *Leib* and lack consciousness.

Our conception of the animate body, however, does have a broader functional element: anything that plays all the same basic causal roles and has all the same basic causal powers as my animate body, is my animate body.[33] So my *Leib* is

[30] See Francisco J. Varela, Evan Thompson, and Eleanor Rosch, *The Embodied Mind: Cognitive Science and Human Experience* (Cambridge, MA: The MIT Press, 1991). See also Antonio R. Damasio, *The Feeling of What Happens: Body and Emotion in the Making of Consciousness* (New York: Harcourt Brace, 1999).

[31] See Ned Block, "Troubles with Functionalism," in Ned Block (ed.), *Readings in Philosophy of Psychology*, vol. 1, (Cambridge, MA: Harvard University Press, 1980), pp. 268-305, at 276- 278. This is of course also known as the "absent qualia argument."

[32] Ludgwig Wittgenstein, *Philosophical Investigations,* 3rd ed., trans. G.E.M. Anscombe (New York: Macmillan, 1958), §§579-585, p. 153e. This animalist interpretation of Wittgenstein's insight, we believe, is a basic clue towards the solution of the problem of other minds. The existence and character of the mind of another animal is strongly metaphysically implied by its behavioral properties, which in turn are realized by its fundamental physical properties; but another animal's mind cannot be known by mere analytic inference from those behavioral properties.

[33] Here there is a certain similarity between animalism and Searle's view, in that Searle (a) identifies the brain with anything that has all the same causal powers as the brain, and (b) ties consciousness necessarily (by, it seems, logical supervenience) to the causal powers of the brain;

multiply realizable and compositionally plastic, which is to say that it is possible for different objective material things—different bodies in the sense of *Kórper*—to instantiate the highly complex configuration of causal patterns and dispositions that is my *Leib*, and it is also possible for my *Leib* to be composed of different kinds of physical stuff. But at the same time it remains true that each realization of my animate body will have intrinsic mental properties and fundamental physical properties that entail each other by non-analytic necessity. Or in other words, each realization of my *Leib* will have mental and physical dual aspects.

This broadly functional conception of the animate body conforms smoothly to the fascinating phenomenology of amputation and prosthesis, and to the equally fascinating corresponding physical facts of neural plasticity.[34] For example, in the case of a phantom limb—the illusion of a physically absent limb that *phenomenally just won't go away*—someone can, even in direct contradiction to his'beliefs, retain a vivid sense of an intimate union with some part of his *Leib* that is actually missing, precisely because his brain automatically takes up the causal slack and plays—or at least neurally simulates—that limb's causal role. In the case of prosthesis, someone can add some item such as a rubber hand or a mechanical leg to her *Leib*—literally *incorporating* that item—precisely because the addition of this item extends or restores some definite causal role within the total integrated repertoire of causal roles played by her animate body.

VI. Anomalous Monism Versus Animalism

Let us now compare our animalist position with the position known as "anomalous monism," advocated by Donald Davidson.[35] Davidson argues that mental events are identical with physical events ("token physicalism"). He also denies the existence of strict deterministic psychophysical laws, thereby rejecting the identity of mental properties with physical properties ("type physicalism"). Yet he also asserts the supervenience of mental properties on physical properties, as well as the causal efficacy of the mental. The basic metaphysical problem with Davidson's

see his *The Rediscovery of the Mind*, Chapters 4-5, especially pp. 124-126. But at the same time animalism differs sharply from Searle's view (a*) in refusing to reduce the animate body to the brain, and (b*) in rejecting the logical supervenience of the mental on the physical.

See Merleau-Ponty, *Phenomenology of Perception*, pp. 76-89; and S. Blakesee and V.S. Ramachandran, *Phantoms in the Brain* (New York; William Morrow, 1998), Chapters 2-3. We are also indebted here to unpublished work by Susan Hurley and Alva Noe on consciousness and neural plasticity.

See Donald Davidson, "Mental Events," in his *Essays on Actions and Events* (Oxford: Clarendon Press/Oxford University Press, 1980), pp. 207-227.

view, as pointed out by a number of commentators, is the apparent incoherence of the idea of a lawless supervenience of mental properties on physical properties, which entails epiphenomenalism and hence the casual inefficacy of the mental.[36]

In light of our animalist solution to the Mind-Body-Body Problem, however, the problems with Davidson's view are his materialist monism and his identification of mental states with full-blown, linguistic propositional attitude states. First, dual aspect animalism is not a version of token physicalism. To say that a single thing is the bearer of both mental and material properties, and thereby the locus of both mental and material events, is not to say that mental particulars or events are identical with material particulars are events. If a horse is in pain, it seems wrong to say that a certain mid-sized material object is in pain—just as it would be wrong to say that its brain or nervous system is in pain, although to be sure its brain and nervous system are causally implicated in its pain. Only the horse, the whole animal, is in pain. Second, if Davidson is right, then creatures who cannot talk not only cannot think but simply do not have minds. But this thesis is in direct and flagrant opposition to the evidence from cognitive ethology that non- linguistic animals have intentional and experiential mental capacities and states (not to mention being in opposition to the everyday empathic experience of pet- owners, animal trainers, and zoo-keepers). Descartes held that non-talking animals are nothing but automata; Davidson apparently holds the equally implausible thesis that non-talking animals are nothing but thick chunks of spacetime.

VII. Naturalistic Dualism Versus Animalism

Animalism can also be usefully compared with David Chalmers's "naturalistic dualism." According to Chalmers, mental facts do not logically supervene on the physical facts (which include our actual laws of nature), but do naturally supervene on the physical facts according to emergent psychophysical laws.[37] The main metaphysical problem with this view is that minds and psychophysical laws alike metaphysically emerge from causally and lawfully closed physical systems. But this thesis entails epiphenomenalism, and also seems to multiply new laws without justification.

In light of the animalist solution to the Mind-Body-Body Problem, however, the main problem with Chalmers's view is the notorious Zombie Argument. According to Chalmers, zombies are conceivable, logically possible, and metaphy-

[36] See J. Heil and A. Mele (eds.), *Mental Causation* (Oxford: Clarendon Press/Oxford University Press, 1993), Part I.

[37] See David Chalmers, *The Conscious Mind*, Chapters 3-4.

sically possible. By contrast, according to the thesis of dual aspect animalism (that the mental properties that constitute a subjective mind, and the fundamental physical properties that constitute an objective material body, are nothing but dual aspects of an animal), zombies are strongly metaphysically impossible; and according to the animal embodiment principle (necessarily, for every creature X, X has consciousness or subjective experience if and only if X has an animate body), zombies are also inconceivable and logically impossible.

Our worries about the Zombie Argument, however, do not stem from "a posteriori physicalisf '[38] worries about the inference from conceivability to possibility, nor from semantic or epistemic worries about the implications of the two-dimensional modal semantics Chalmers's employs in his arguments, nor from cognitive-science worries about natural limitations on conceivability. Instead, we believe that the Zombie Argument rests on an "illusion of contingency"—the illusory conceptual intuition that a conscious subject's actual-world body can have a genuine physical counterpart that is not subjectively conscious. This illusion of contingency can be seen in two features of the Zombie Argument. The first is what we take to be a fallacious step in the argument, namely, the inferential step from the conscious subject's actual body to its physical counterpart in any other possible world. The second is a related failure to think through what the zombie scenario requires, namely, that a physical counterpart of a given conscious subject's actual-world body could have a bodily life indistinguishable from that of the conscious subject in every respect except for having no subjective experience whatsoever of its own body.

(1) We submit that nothing will count as a genuine physical counterpart of a conscious subject's body unless, in addition to all of its other physical properties in the actual world, it is also *her* (or *his,* or *your,* or *my}* body. In other words, what picks out the relevant physical body for the purposes of determining the counterpart relation is an *essentially indexical* element that must be preserved across possible worlds. Essential indexicals, such as 'her', 'his', 'your', and 'my', according to the now-standard semantics developed by David Kaplan, express as their meanings "variable characters," or partial functions from actual speech-contexts onto "contents," which in turn are complete functions from possible

worlds onto extensions.[39] Essentially indexical terms cannot be semantically replaced by descriptive terms—even rigidly designating descriptive terms—without a loss of meaning: that is why they are *essentially* indexical.[40] Now *her,*

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* See Daniel Stoljar, "Physicalism and the Necessary A Posteriori," *Journal of Philosophy* 97 (2000): 33-54.

See David Kaplan, "Demonstratives: An Essay on the Semantics, Logic, Metaphysics, and Epistemology of Demonstratives and Other Indexicals," in J. Almog, J. Perry, and H. Wettstein (eds.), *Themes from Kaplan* (New York: Oxford University Press, 1989), pp. 481-563.

* See John Perry, "The Problem of the Essential Indexical," *Nous* 13 (1979): 3-21.

every genuine physical counterpart of that actual world body must also be a living and lived body—a body with an inner life and a point of view. Therefore, every genuine physical counterpart of that body must be subjectively conscious.

As Chalmers construes it in the Zombie Argument, however, a physical counterpart of that body can be utterly devoid of an inner life and a point of view—it can lack "phenomenal consciousness" entirely. To get this result, we think, he has tacitly shifted from the use of a term containing an essentially indexical element, such 'her body', 'his body', 'your body', or 'my body', to a *non-indexical* or at least *non-essentially indexical* rigid designator, such as 'David Chalmers's body', where the reference-determining element is a complete function from worlds to extensions according to a secondary (or a posteriori physicalist) intension. That is, Chalmers secures reference to the relevant actual- world body by means of a term whose semantics includes an element that is irreducibly indexical, and therefore by his own account *not* logically supervenient on the physical facts;[41] and he then tacitly shifts to the use of a referring term lacking this semantic element, a term whose semantics *is* logically supervenient on the physical facts. Or in still other words, Chalmers tacitly shifts from treating the relevant actual world body as a *Leib* to treating it as a *Korper*.

(2) According to the Zombie Argument, a physical counterpart of a given conscious subject's actual body could have a bodily life indistinguishable from that of the conscious subject's in every respect except for having no subjective experience whatsoever of its own body. For instance, by hypothesis your zombie twin is supposed to be physically and hence biologically identical to you: it is a complete material duplicate of the biological organism that you are. It is therefore alive exactly as you are, down to every structural and behavioral detail, and yet—or so we are supposed to imagine—it does not *feel alive* in the slightest; it is not sentient. In other words, it is supposed to be identical to you as *Korper,* but not as *Leib.* But this scenario is not coherent. Many of the sense-perceptual abilities of the body in the sense of *Korper* (i.e., fundamental physical realizations of certain functionally-defined representational states) depend on the body in the sense of *Leib,* that is, on the subject's being able to subjectively experience its own body. More simply put, without proprioceptive and kinesthetic experience, many kinds of sense perception would be impossible. Therefore, there is no good reason to believe that there could be a zombie duplicate of you, that is, a duplicate of your *Korper,* that was not also a duplicate of your *Leib.*

It is worth elaborating this line of argument in relation to the phenomenology of perception. One of the central themes of Husserl's analyses is that every sense perception is accompanied by, and functionally linked to, the sensing of one's

[41] See David Chalmers, *The Conscious Mind,* pp. 84-85.

bodily movements (eye movements, head movements, and whole body movements).[42] Every visual or tactile perceptual appearance, for instance, is not simply correlated with a kinesthetic experience of the body, but is functionally tied to that experience: when one touches the computer keys, the keys are given in conjunction with a sensing of one's finger-movements; when one watches a bird in flight, the bird is given in conjunction with a sensing of one's head- and eye-movements. Husserl argues at length that the continuity of appearances in perception depends on this linkage of kinesthesis and perception: it is only through one's movement and self-sensing in movement than an object can present itself as a unified series of appearances. The basic idea behind this line of thought is that in order to perceive an object from a certain perspective—that is, to take the appearance or profile presented from that perspective as an appearance belonging to an objective thing in space—one needs to be experientially aware (though only tacitly or pre- re flectively) of the other co-existing but absent profiles of the object. These absent profiles stand in a certain relation to the present appearance: many of them are profiles that can be made present if one carries out certain movements. In other words, they are correlated to one's kinesthetic system of possible bodily movements and positions. If one moves this way, then that aspect of the object becomes visible; if one moves that way, then this aspect becomes visible. In Husserl's terminology, every perceptual appearance is "kinesthetically motivated." For simplicity, take the case of a motionless object. If the kinesthetic experience (K_1) remains constant through a given time interval, then the perceptual appearance (A_1)remains constant too. If the kinesthetic experience changes (K_1 becomes K_2), then the perceptual appearance changes too (A_1 becomes A_2). There is therefore a functional dependency between the kinesthetic experiences and the perceptual appearances: a given appearance (A_1) is not always correlated with the same kinesthetic experience (e.g., K_1), but it must be correlated with some kinesthetic experience or other. For this reason, normal perception is indissociably linked to the kinesthetic experience of self-movement.

The upshot of this line of phenomenological analysis is that all normal perception involves pre-reflective bodily self-sensitivity or self-affection—the tacit experience of oneself at rest and in movement, and the tacit experience of oneself as an embodied agent. How are we to make sense, then, of the zombie scenario, in which a physical counterpart of a conscious human being's body—whose (functionally defined) perceptual abilities are supposed to be indistinguishable from those of its conscious counterpart—has absolutely no experience of its own body? A necessary condition of this scenario's being conceivable is

[42] See Edmund Husserl, *Thing and Space: Lectures of 1907*, trans. Richard Rojcewicz (Dordrecht/ Boston/London: Kluwer Academic Publishers, 1997).

that it be conceivable that a being having (say) your perceptual capabilities could have no kinesthetic experience of its body and no pre-reflective experience of itself as an embodied agent. But if the phenomenological analysis is right, then these sorts of proprioceptive and kinesthetic experiences are conditions of the possibility of normal sense perception, and therefore normal perception could not happen in their absence. Is it really conceivable that a being's perceptual behavior could be indistinguishable from one's own, even though it had absolutely no kinesthetic and proprioceptive experience? The zombie scenario would seem to depend on the assumption that such experience is causally or explanatorily irrelevant or superfluous to the lives we lead in the world, but we see no good reason to believe this assumption. On the contrary, even a cursory phenomenological analysis shows us that there is good reason *not* to believe the assumption. At the very least, it tells us that one should not allow philosophers to get away with simply *asserting* that the zombie scenario *seems conceivable to them;* they need to spell out the scenario such that it is intelligible, in the face of the apparent inseparability of—indeed, on our view, the strongly metaphysically necessary inseparability of—a conscious subject's *Korper* and its *Leib.*[n]

VIII. Conclusion

Even if there is no Traditional Mind-Body Problem because of the Body Problem, there is still a Mind-Body-Body Problem that can be generated outside of Cartesian metaphysics and without assuming the existence of a true theory of the nature of the physical world. But there is an animalist solution to the Mind- Body-Body Problem. This animalist solution is strongly supported by (a) empirical data from cognitive ethology and (b) first-person data from the phenomenology of human embodiment. It is also supported by critical contrast with Davidson's anomalous monism and Chalmers's naturalistic dualism. According to animalism, subjective conscious minds and objective material bodies are nothing but dual aspects of living and lived bodies or animals. In other words, animals are beings such that they have metaphysically complementary mental and objective material properties. Or in still other words: animals—including of course all human animals like us—are neither essentially mental nor essentially physical, but instead essentially *both* mental and physical.

[43] More precisely, a conscious subject's *Korper* and *Leib* are strongly metaphysically necessarily inseparable because (i) a conscious subject is an animal or *Leib,* (ii) an animal's or *Leib'*s fundamental physical properties (which constitute its *Korper)* and its mental properties entail each other by strong metaphysical necessity, and (iii) those mental and fundamental physical properties alike are intrinsic properties of the animal or *Leib.*

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