Husserl on psycho-physical laws* Jeff Yoshimi

Abstract: I reconstruct and critically evaluate Husserl's analysis of psycho-physical laws, and consider its contemporary relevance. I begin with an interpretation of Husserl's controversial claim that phenomenology provides foundations for the positive sciences (e.g. physiology and psychology). I then show that Husserl formulates a novel version of mental-physical supervenience, what I call "partial" supervenience, whereby some but not all mental properties are determined by physical properties. Husserl allows for partial supervenience, but argues that "total" mental-physical supervenience, where *all* mental properties are determined by physical supervenience, where *all* mental properties are determined by physical supervenience, where *all* mental properties are determined by physical properties. I evaluate this argument, and conclude that it is unsound. I end by comparing Husserl's view of mind-body relations with current approaches

In the final sections of *Ideas* 2 and in *Ideas* 3 (which originate in a sheave of notes reflecting "one stroke" of continuous meditation by Husserl¹), Husserl gives a detailed and remarkable analysis of "psycho-physical conditionality" (*pscyhophysichen Konditionalität*). In these texts Husserl describes how we experience other conscious beings, and our tacit understanding of how their mental states relate to their bodily states. He also gives an eidetic analysis of these experiences, considering what is necessary and what is left open in our experience of mental states in relation to bodily states—what might be called a "phenomenology of the mind-body problem."

These texts are remarkable for a number of reasons. First, they are important on historical and interpretive grounds, insofar as they suggest that Husserl has a more nuanced position with respect to naturalism and natural science than is usually thought; it emerges that he is not an opponent of naturalism, but rather situates—and pursues, quite

^{*} Penultimate draft of https://www.pdcnet.org/nyppp/content/nyppp_2010_0010_0025_0042

¹I am referring to the "pencil manuscripts," a "folio of 84 sheets in very dense shorthand of the Gabelsberger system... composed by Husserl 'in one stroke' immediately after the completion of the first book of the *Ideas*" (*Ideas* 2, pp. xi-xii).

vigorously—naturalistic analyses in his larger phenomenological program. Second, they provide a concrete illustration of Husserl's controversial foundationalist program, whereby phenomenology is supposed to "ground" (*begründen*) positive sciences like psychology. Third, these texts prefigure certain themes in contemporary philosophy of science and mind, in particular themes relating to what has come to be known as the "metaphysics of mind".² Fourth, some of Husserl's results are of independent philosophical value—in particular, his concept of a "partial supervenience." Fifth, these texts contain an interesting (albeit flawed) argument against the possibility of psychophysical laws.

I begin by describing the philosophical context (in *Ideas 2 and 3*) of Husserl's analysis of psycho-physical laws. I elaborate on Husserl's approach to naturalism, offer an interpretation of his foundationalist program, and relate his overall method to contemporary philosophical approaches. I then define supervenience, and formalize the concepts of "partial" and "total" supervenience. With these tools in hand I reconstruct Husserl's argument against total supervenience. Husserl's overall position is one whereby many features of mind are determined by bodily states—e.g. sensations, imaginations, drives, and instincts—but others are not. After reconstructing Husserl's argument I critically evaluate it. I conclude that while the overall position Husserl defends is important, his argument is unsound. Finally, I consider parallels between Husserl on psycho-physical laws, and contemporary work in the area, focusing on Jaegwon Kim's

² Roughly: that part of philosophy of mind which focuses on metaphysical issues, e.g. questions concerning psycho-physical relations, mental causation, and the proper formulation of physicalism. See http://philpapers.org/browse/metaphysics-of-mind.

"causal exclusion" argument, which provides a convenient platform for comparison.

Note that in what follows I translate "Seele" as "mind" rather than "soul," *seelische* as "mental" rather than "psychic", and similarly for related terms. In using words like "Seele" and "*seelische*" Husserl clearly has the kinds of states referred to by psychologists and other empirical scientists in mind. "Mind" and "mental" convey this sense; "soul" and "psychic" have obviously problematic connotations.

1. Background

Husserl's analysis of psycho-physical laws^a begins with a phenomenology of the "naturalistic attitude" (*naturalistichen Einstellung*), "the attitude of the subject who intuits and thinks in the natural-scientific way" (*Ideas* 2, p. 3), i.e. the overall worldview of any practicing scientist or lay person who assumes the truth of natural science. Within this attitude the world is given as a spatio-temporal manifold made up of "real" (*reale*), causally interacting things, and these things are assumed to be the basis of "objective truth" (see, e.g., *Ideas* 2, section 33). These real things have states (*Zustände*), and those states change over time in accordance with contingent natural laws. Husserl distinguishes two kinds of real things: physical things and "mental realities" (*seelischen Realitäten*), and says that experiences of the former are foundational for the physical sciences, while experiences of the latter are foundational for psychology:

Each of these experiences is foundational for corresponding experiential sciences:

³ These analyses are primarily in section 63 of *Ideas 2*, though relevant material also appears in the rest of *Ideas 2*, *Ideas 3*, and in *Phenomenological Psychology*. Helpful discussions of this material include Smith (1995), Crowell (1996), Melle (1996), and Nenon (1996).

the one for the sciences of material nature and the other for psychology as science of the mind (*Ideas* 2, p. 133).

In his study of the experience of mental reality—which forms the phenomenological basis for psychology—Husserl considers the "experience of psychophysical conditionality" (p. 78) or "physiological dependences" (*physiologische Abhängigkeiten;* p. 143). In doing so, Husserl is describing our assumption, in the naturalistic attitude, that changes in mental state are somehow dependent on changes in bodily state. Husserl gives a far-reaching analysis of the kinds of circumstances that give rise to and support this type of assumption. For example, we know that running an object over the surface of the skin produces a determinate succession of sensings, which can be repeated

If an object moves mechanically over the surface of my skin, touching it, then I obviously have a succession of sensings ordered in a determinate way. If it always moves in the same way, with the same pressure, touching the same parts of the body at the same pace, then the result is obviously always the same... (pp. 161-162).

Other examples include: the fact that swollen skin feels differently when touched (p. 70), the fact that organisms behave in specific ways in specific physical circumstances (p. 135), the fact that on entering a hot room one assumes the feeling is due to the physical state of the room (p. 163), and the fact that we assume that what we see has to do with how energy impacts our eyes and ultimately or nervous system (p. 164). In all these ways a person in the naturalistic attitude assumes a kind of "phenomenal if-then", whereby if the body is put in a certain state, then certain phenomenal states will arise. Husserl adds that we don't always understand how these conditionalities work, we just have an

understanding that somehow physical and mental phenomena interact (Ideas 2, p. 272).

The main question at issue in section 63, which I focus on below, is the question of how far we experience this psycho-physical conditionality extending (also see *Ideas 3*, p. 16). Does a person in the naturalistic attitude assume *all* features of a person's mental life are determined by his or her bodily states, or only some of them? Husserl clearly thinks that mental states of organisms are given as being to some extent dependent on their physical states, but he leaves open (and ultimately argues that) this dependence is partial, so that some aspects of an organism's mental life are assumed not to be determined by bodily states. For example, Husserl thinks it is clear that sensory contents depend on a physical substrate: "Doubtlessly [the dependence extends] as far as the sensuous substrates of consciousness", and also assumes that it applies to "*phantasy*" (which includes imagination and memory), feelings, instincts, and those aspects of higher cognition which themselves depend on the other aspects. He also mentions (but is tentative about) more complex features of mind, like "the proper character, the rhythm, of higher consciousness" (Ideas 2, p. 308-309). However, for some mental phenomena Husserl thinks the existence of a physical basis is less clear, and he concludes that it is an empirical question which mental phenomena have a physical basis and which don't: "obviously, how far all this extends can only be decided empirically and if possible by means of experimental psychology" (Ideas 2, p. 308).

When Husserl investigates the naturalistic attitude, it is important to bear in mind that he remains within the phenomenological attitude. The naturalistic attitude is his object of phenomenological investigation; it is itself in brackets in these texts. Thus, all of

Husserl's arguments concerning psycho-physical dependence occur "inside" the brackets of reduction.⁴ He is considering what is necessary and what is left open in our experience of psycho-physical relations. His overarching phenomenological method is assumed throughout. For example, when Husserl describes relationships between real physical states and mental states, he thinks both kinds of state are ultimately constituted by consciousness. As such, Husserl often reminds the reader that "real" physical things are themselves constituted by an intersubjective process whereby we assume (among other things) that a physical thing is such that others can see it as we do. For example, just after describing what physical causality or "affecting" is, Husserl says "[since] physical things are what they are as unities of appearances, we are led back to interdependencies of certain intersubjective regulations of consciousness..." (*Ideas* 2, p. 309).

The fact that Husserl's analysis of the naturalistic attitude is carried out within the brackets of reduction is important to bear in mind, because it helps prevent certain misreadings. For example, though Husserl considers a range of naturalistic and metaphysical theses in these texts, he does so within the brackets of reduction—he is considering possibilities of naturalistic and psycho-physical experience, as opposed to metaphysical theses in the contemporary sense. His broader critique of naturalism and related doctrines (empiricism and psychologism in particular) remains in play throughout.

The phenomenology of naturalism is essential to an understanding of Husserl's

⁴ When I refer to analyses "inside" or "within" the brackets of reduction, I mean concrete phenomenological analyses that assume phenomenological reduction has been performed. When I refer to analyses "outside" of brackets, I mean Husserl's discussion of the phenomenological method itself. ⁵ A helpful overview of these arguments is in Moran (2008).

foundationalism, which has been a controversial subject in recent Husserl scholarship.^e There is no question that Husserl takes himself to be engaged in some form of foundational project in these texts. Indeed, *Ideas* 3 is subtitled "Phenomenology and the Foundations of the Sciences", and Husserl refers in various places to phenomenology "completing", "grounding", and "justifying" the positive sciences (see Hopp, 2008, for review of the textual sources). What is controversial is the question of what precisely Husserl has in mind when he refers to "foundationalism." Drummond and Hopp have argued, convincingly I think, that it is *not* a form of epistemic foundationalism, in the contemporary sense. But this leaves open what Husserl's positive view was.

On my interpretation, when Husserl refers to a phenomenological "grounding" for the positive sciences, what he has in mind is conceptual analysis of scientific phenomena, something akin to contemporary philosophy of science. In both cases the philosopher describes what is necessary and possible in a given empirical domain, while the working scientist studies which possibilities actually occur. The difference is that, while contemporary philosophers tend to assume they are analyzing what is necessary and possible with respect to real, extra-mental things, Husserl analyzes what is necessary and possible with respect to *experiences* of things.

For example, a foundational, eidetic analysis of physics studies what is necessary, and what is left open, when one has experiences of physical things (see *Ideas 3*, sections 1 and 7). If one is to experience a physical thing, some structures *must* be in place (e.g. the thing must be given as having some extension and must be viewable from multiple

⁶ See Drummond (1990) and Hopp (2008).

angles), while other structures are left open (e.g. the color and size of the thing). The phenomenologist works out these necessities and possibilities, while the working scientist determines what actually occurs within the space left open by the philosophical analysis. Similarly, in "phenomenological psychology," the phenomenologist determines what is necessary and what is left open in our experiences of mental states in relation to physical states. Having delimited these bounds, it is up to experimental psychologists and physiologists to formulate empirical laws describing what happens to occur within them. For example, the empirical psychologist's job is to determine how far psycho-physical dependencies in fact extend, while the phenomenologist's job is to determine (via "inquiries into essences") how far they can, in principle extend:

It is certain that dependencies on the psychic run over into the physicalorganismic. How far they *actually* reach is a matter for psycho-physiological empirical investigation to decide. How far [psycho-physical dependencies] *can* reach, on the other hand, that is to say, how far questions about "physiological correlates" and corresponding hypothetical constructions can be senseful and guiding for the process of actual research, is a matter for psycho-physical inquiries into essences (*Ideas* 3, p. 16).

In these ways the positive sciences are properly grounded: workers in the sciences carry out their projects against the background of a proper understanding of the eidetic bounds delimited by phenomenology (and related domains of conceptual analysis, like geometry). Phenomenologists and positive scientists each play a proper role, and there is no danger of their making naïve mistakes that derive from overstepping those bounds or misunderstanding those roles. Contemporary philosophers play a similar role with respect to the positive sciences. Philosophers of mind and cognitive science, for example, take themselves to be working at the "foundations" of psychology and cognitive

science, describing conceptual issues that frame empirical investigations. For example, the concepts of mental causation, psycho-physical interaction, multiple realization, and emergence (among others), are all properly philosophical topics, which can be studied independently of empirical investigations, but which should also frame subsequent empirical investigations.

In light of such parallels, the question arises of whether and to what extent eidetic phenomenology and contemporary philosophy can inform one another. Can Husserl's results can be drawn on by contemporary philosophers, even if they reject Husserl's broader phenomenological project? Conversely, can contemporary philosophical approaches to mind and cognitive science inform Husserlian phenomenology? I think both directions of influence are possible, by a kind of "transposition," a change in background assumptions, where phenomenological claims are read as metaphysical claims, or conversely. ⁷ Of course, for Husserl, converting a phenomenological claim into a claim about real things would be an egregious mistake, a reinsertion of naïveté into what had been a phenomenologically purified analyses.⁸ But the possibility of such conversions shows how, at least in principle, Husserl's results can be drawn on by contemporary philosophers.

2. Total and Partial Supervenience

⁷ I take these possibilities to justify my use of contemporary philosophical concepts below, in my discussion of Husserl's account of psycho-physical laws, and in my reconstruction of Husserl's arguments. ⁸ Though perhaps not, insofar as one of the points of transcendental idealism, for Husserl, is to justify our naïve understanding of the world on phenomenological grounds: "phenomenological idealism does not deny the positive existence of the real world and of Nature... It's sole task and service is to clarify the meaning of this world..." (Ideas 1, *Nachwort*).

In this section I use the concept of supervenience to formalize Husserl's theory of psycho-physical dependence, in particular his distinction between what I will call "partial" and "total" supervenience. According to the standard definition, a set of properties **A** supervenes on a set of properties **B** iff objects indiscernible with respect to properties in **B** are indiscernible with respect to properties in **A** (sets are denoted by bold-faced letters throughout).⁹ However, though this type of formulation does appear in Husserl¹⁰, I will focus on an alternative formulation, that is easier to work with in this context, and that also appears in Husserl, as we'll see. According to this alternative formulation, assuming **A** and **B** are "state sets" (sets of properties which are such that only one of their properties can be instantiated at a time)¹¹, we can define supervenience functions as follows:

DEFINITION: A *supervenience function* is a function $f : \mathbf{B} \to \mathbf{A}$ such that if $f(\mathbf{b}) = \mathbf{a}$, then any object that is in state b will be in state a.

⁹ This definition does not capture a form dependence found in Husserl (and later developed by Peter

Simons), whereby the existence of one type of thing requires the existence of another type of thing. The relationship between "dependence" in this sense and supervenience is discussed in Jeff Yoshimi, "Supervenience, Determination, and Dependence," *Pacific Philosophical Quarterly* 88, no. 1 (2007): 114-133. In fact I think Husserl runs several distinct concepts together when he speaks of dependence (for overview of the Husserlian concept see B. Smith and D. W. Smith, *The Cambridge Companion to Husserl* (Cambridge Univ Pr, 1995), introduction). Also note that modal operators are usually added to formulations of supervenience. This in turn generates variations on the supervenience relation. I've suppressed these operators here, but I do touch on the modal issues below.

¹⁰ An example: "...the sensibility presents itself in such a way that we can say that if the animate organism is the same... with regard to its materiality and its material states, then it would also, as animate organism, have to be the same" (Husserl, 1980, p. 120).

¹¹ For example, a set containing the properties red and square is not a state set, since an object can be both red and square. However, the set of conjunctive properties {red & square, red & not square, not red & square} is a state set, since only one property in the set applies to an object at a time, if any does. In this way, any property set can be converted into a state set (see Yoshimi, "Supervenience, Determination, and Dependence" for details). There I also show that supervenience relations for property sets generally entail the existence of supervenience functions for corresponding state sets.

It is important to remember that supervenience functions apply to state sets, which are such that only one state in the set applies to an object at any time. For example, the members of a set of "sensation states" does not include simple qualia (since multiple qualia can apply to a person at a time), but rather, complete *distributions* of qualia *everything* a person is seeing, hearing, smelling, and tasting at a point in time (only one such distribution applies to a person at a time).

Husserl clearly thinks of psycho-physical dependence in this functional way. For example, when he discusses the dependence of sensations on bodily states, he says:

As regards sensations, dependence means that a certain Bodily state (or, rather, a certain form of Bodily states...) has, as its univocal and Objective consequence, a certain sensation in a determinate stream of consciousness bound to its respective body (*Ideas 2, p. 304*).

This corresponds to a supervenience function $f : \mathbf{P} \to \mathbf{S}$, where **P** is a set of possible physical states of a person's body, and **S** is a set of possible sensation states. That is, if the body of a person enters in to a particular Bodily state $p \in \mathbf{P}$, it follows as a "univocal and Objective consequence" that a certain sensation state $f(p) \in \mathbf{S}$ will occur in the consciousness of that person.¹²

To define partial supervenience, where some but not all mental properties supervene on an agent's physical state, we need a way of talking about complex state sets which are built up from simpler state sets. At a first pass, we can construct such sets using a variation of the Cartesian product, "×", which takes two state sets and produces a

¹² Also note the emphasis on "forms of Bodily states", which captures the concept of a re-instantiable property distribution, or "state" in my sense.

composite state set consisting of all possible conjunctions of states in the two sets. ¹³ For example, if we consider a simple world where objects only have one color and shape, we can begin with the following state sets:

$$\mathbf{A} = \{\text{red, green}\}\$$
$$\mathbf{B} = \{\text{square, triangle}\}\$$

and then form a product state set

 $\mathbf{A} \times \mathbf{B} = \{ \text{red } \& \text{ square, red } \& \text{ triangle, green } \& \text{ square, green } \& \text{ triangle} \}$

The state sets we focus on correspond to ways one's consciousness can be, with respect to particular domains, or what Husserl sometimes calls "spheres" (*Sphären*); i.e. the "sense sphere", the "affective sphere", etc.¹⁴ We can think of a sphere as being a state set, where each state corresponds to a complete distribution of a kind of phenomenal property. A partial list might include:

S = Sensory States F = Feeling States M = Memory States I = Imagination States V = Volitional states

At any time, a person will instantiate one state in each of these sets (or none at all): a person is always having a unique total sensory state (or none at all), a unique pattern of feelings (or none at all), etc.

Let C* be the collection of all such phenomenological state sets. The set C of

¹³ More precisely, "×" corresponds to a variant on a Cartesian product, where ordered pairs have been replaced by property conjunctions: $\mathbf{A} \times \mathbf{B} = \{a \& b \mid a \in \mathbf{A} \text{ and } b \in \mathbf{B} \}$. This analysis may require further refinement, insofar as some conjunctions may not be possible or meaningful.

¹⁴ In *Ideas* 2 Husserl refers to the following "spheres": the sphere of feeling or the "affective sphere" (p. 9, 11,); the "doxic sphere" (p. 20); the sphere of "position taking" (p 293); the sphere of volition or "my doings and my abilities" (p. 271); and the sphere of sensations (p. 131-2), as well as single "sense spheres" within it (p. 26), e.g. the sphere of the visual and the tactual (p. 62).

"total" conscious states can then be defined as the product of the state sets in C*:

$$\mathbf{C} = \mathbf{S} \times \mathbf{F} \times \mathbf{M} \times \mathbf{I} \times \mathbf{V} \dots$$

A state in **C** corresponds to a person's complete conscious state—it encompasses a person's sensory state, imagination state, emotional character, volitional tendency, etc— something like what Gurwitsch (1964) called "fields of consciousness," that is, "totalities of co-present data" (p. 3), i.e. *everything* about a person's phenomenal state at a point in time. **C** contains all such totalities, where each such totality is a conjunct of more specific types of phenomenal state. This gives us the flexibility we desired, to consider total states of consciousness on the one hand (i.e. states in **C**), but also "partial" states of consciousness (i.e. sensory states in **S**, feeling states in **F**, etc.)

We are now in a position to define partial and total mental-physical supervenience. Total mental physical supervenience, which Husserl will argue against, is the thesis that *total* conscious states in **C** are determined by physical states in **P**:

DEFINITION. Conscious states *totally supervene* on physical states iff there exists a supervenience function $f : \mathbf{P} \to \mathbf{C}$.

Partial mental-physical supervenience is the thesis that some but not all aspects of consciousness supervene on bodily states. In terms of our formalism above, there is a subset of C^* , the product of which supervenes on **B**, and another subset of C^* whose product does not. That is:

DEFINITION: Conscious states *partially supervene* on physical states iff C^* has non-empty subsets whose products are C^{D} and C^{UD} such that:

(1) There exists a supervenience function $f_1: \mathbf{P} \to \mathbf{C}^{\mathbf{D}}$

(2) There does not exist a supervenience function $f_2: \mathbf{P} \to \mathbf{C}^{\text{UD}}$

We can think of \mathbb{C}^{D} as the determined aspects of consciousness and \mathbb{C}^{UD} as the undetermined aspects of consciousness. For any physical state $p \in \mathbf{P}$, the "determined part" of consciousness, $f_1(p)$, is fixed; that is, a specific sensory state, imagination state, etc. occur. However, this is not the case for \mathbb{C}^{UD} . Suppose, for example, that the set of volitional states \mathbf{V} is the set {do, don't}. Then when my brain is in physical state p, the volitional part of my consciousness can either be doing, or not doing, even if all else is fixed about consciousness. So p is *not* associated with a unique volitional state, so there is no supervenience function from \mathbf{P} to \mathbf{V} .

This allows us to distinguish that which is determined from that which is not determined within total consciousness. The question now is whether everything about consciousness is in fact determined or not. Does partial or total mental-physical supervenience hold?

3. The Argument against Total Supervenience

The main argument against total supervenience occurs on p. 307 of *Ideas* 2.¹⁵ It can be reconstructed as follows:

P1: All changes in physical state are contingent.P2: Suppose (for *reductio*), that conscious states totally supervene on physical states.

P3: Some changes in conscious state are necessary.

¹⁵ At least one other argument against total supervenience is presented in the text: what can be called the repetition argument. The argument is roughly that while physical systems can be in the same state more than once, the mind cannot: "The same mental state cannot be twice, nor can it return to the same total state" (*Ideas* 2, p. 315; also see p. 145; the same argument occurs in other places as well). The reason Husserl gives in this text is that the temporal horizon is constantly changing for humans. There is more to say about this argument, but I will not pursue it further here.

C1: All changes in conscious state are contingent (P1, P2).C2: Conscious states do not totally supervene on brain states (P2-C1).

Husserl develops this argument using some simple notation: B_m is a variable whose value corresponds to a person *m*'s physical or "bodily" state at a time, and C_m is a variable whose value corresponds to *m*'s conscious state at same time.

For P1, Husserl says: "changes of B_m are contingent changes, subject to natural laws which could just as well be different ones" (*Ideas* 2, p. 307). This is an uncontroversial assumption. In contemporary terms, the claim is that changes in a person's physical state—in particular his or her brain state—are a matter of physical law. Those laws hold with nomological but not metaphysical necessity. We could imagine a world in which different physical laws obtained, so that brains would change their state differently than they do in this world.

P2 is the premise setting up the *reductio*, by assuming total supervenience. Husserl says, "Let us assume that all conscious lived experiences, just as they are, may be dependent on B_m for their entire content with its parts and moments..." (*Ideas* 2, p. 207). In this context "dependence" means supervenience, and Husserl's focus on the "entire content" of conscious experience, "with its parts and moments" emphasizes that he is considering total supervenience as defined above.

P3 is the premise that does most of the work (and is the premise I will criticize below). Here is how Husserl puts it:

...belonging to the apriori essence of consciousness, there exist certain necessities in the course of its successions—the way, e.g., the modes of retention within the constitution of time are linked (apriori), as succeeding one another necessarily, to various impressions (*Ideas 2*, p. 307).

That is, there are certain necessary laws of consciousness, which apply to all possible conscious processes.¹⁶ In contemporary terms, these laws hold with metaphysical necessity. They are true in all possible worlds; they could not be otherwise: even if the laws of physics were different, these laws would have to obtain. So, to use Husserl's example, there is no possible world within which retentions are not linked in a certain way with impressions, because those are necessary laws of time-consciousness.

Conclusion C1 is not drawn explicitly by Husserl, but he clearly makes the inference. The idea is this that if mental states supervene on brain states, then contingent changes in brain state entail contingent changes in mental state. To see this, consider a contingent change where brain state B_1 leads to brain state B_2 (see figure 1). We then consider the mental states associated with these two brain states under the supervenience function, and see that under this scenario mental state $f(B_1)$ leads to $f(B_2)$. However, if the laws of physics were different, brain states could change differently than they do; for example, B_1 could lead to B_3 instead of B_2 , so that $f(B_1)$ would lead to $f(B_3)$ instead of $f(B_2)$ (where $f(B_2) \neq f(B_3)$). So, the contingency of brain processes carries over to conscious process, assuming total supervenience; the laws of psychology inherit their contingent, changeable character from physics.¹⁷

¹⁶ Husserl seems to conflate necessity and apriority, though I am not sure of this. They are clearly distinguished in the contemporary literature. I focus on necessity here.

¹⁷ Davidson (1970), however, famously denied that deterministic physical laws together with supervenience relations entailed deterministic psychological laws. In that case, physical and psychological laws could have different modal characteristics. However, I don't think Davidson's reasoning is convincing, and have argued against it elsewhere (Author's paper).



Figure 1: Contingent base dynamics induce contingent supervenient dynamics.

Since C1 contradicts P3, we have a *reductio* of P2, and so total supervenience does not obtain (C2). There are necessary, eidetic laws that govern certain aspects of the unfolding of consciousness, and these cannot have their basis in contingent physical laws. As Husserl says, "there is an absolutely fixed lawfulness that does not have any parallel in the empirical lawfulness of *B*" (*Ideas* 2, p. 307). Or again: "From the foregoing considerations, there results a limit to possible *naturalizing*: the spirit can be grasped as dependent on nature and can itself be naturalized, but only to a certain degree" (*Ideas* 2, p. 311).

If Husserl is right, then some aspects of consciousness are free, or at least are not determined by an underlying physical basis. Recall the definition of partial supervenience: there is a function from physical states to the determined aspects of consciousness characterized by C^D but there is no such function from bodily states to C^{UD}.¹⁸

¹⁸ The question arises: What is it in virtue of which C^{UD} is undetermined? Husserl does not to my knowledge answer this question, but does note that dynamics of the free part of consciousness will either be accidental or consistent with their own non-physical laws: "this noetic element is either accidental, occurring without laws... or it is indeed determined univocally, though it does not stand in functional dependence... to the physical body" (*Ideas* 2, p. 305).

The overall picture that emerges is consistent with the approach to eidetic psychology described in section 1, which considers "the extent to which what is *essential* about consciousness assigns *limits* to the conceivable possibilities" (*Ideas* 2, p. 306). In this case, eidetic laws set some limits on the dynamics of consciousness, but leave others aspects of consciousness open. The open possibilities are studied by experimental psychology; the necessary constraints by eidetic psychology. For example, every impression must become a retention (this is based on a necessary law of time consciousness), but the content of a given impression is a contingent result of what happens in the brain (and hence, a legitimate topic for psychology). As Husserl says:

Only that which the essential nexuses leave *open* can be empirically conditioned, but not what is necessarily linked to it in terms of the retentions. For instance, only the sensations could be conditioned, but not what is necessarily linked to it in terms of retentions. Or perhaps, more precisely, what is conditioned would only be the content of the sensation... within the predelineated form of the retentional sequence... (*Ideas* 2, p. 307).

I now turn to an evaluation of this argument. Two aspects of Husserl's argument are controversial. The first is C1, which, as already noted, has been a subject of dispute (see note). However, I myself believe (and have argued) that C1 is a valid inference to draw, and so I will not focus on it here.

I will focus on P3, which I will argue is false, so that Husserl's argument as a whole is unsound. According to P3, there are essential laws of consciousness, which require that it unfold in a certain way. As we saw, Husserl uses time consciousness as an example. Reconstructing a bit, the claim is that any impression or retention c will necessarily be modified into a retention r of c at a future time. Call this the "law of

retentional modification" (cf. Husserl (1991), section 11, 31). Even if the content of c is "left open" by this law, the fact that c becomes a retention is not, or so Husserl claims. Thus, says Husserl, the law of retentional modification describes necessary changes that cannot be based on contingent, empirical laws.

The problem with this line of reasoning is that the law of retentional modification cannot do the work Husserl needs it to do to support P3, since (I shall argue) it can be violated. Thus, it does not place any necessary constraints on how consciousness must unfold over time, and so it does not provide evidence against total supervenience. ¹⁹ I do think Husserl can defend a conditional version of the law, whereby *if* time-consciousness obtains, *then* primary impressions must be modified to become retentions. This saves the law, since violations of retentional modification then simply correspond to cases where time-consciousness does not obtain. But, we will see that P3 remains unsupported on this formulation: the conditional version of the law does not place any necessary constraints on how consciousness *must* unfold. Complicating the issue is that time-consciousness is not an entirely univocal or stable doctrine in Husserl.²⁰ However, I believe my arguments generalize: I don't think there is *any* plausible interpretation of time-consciousness (or any other domain of phenomenology) which can be used to support P3.

According to a natural reading of the law of retentional modification, timeconsciousness governs the evolution of conscious states in the stream of consciousness, so that as the stream unfolds, impressions must be "modified" to become retentions,

¹⁹ I should emphasize that I think Husserl may be right that total supervenience is false. I just don't think he has shown it with this argument.

²⁰ See the translator's introduction to Husserl (1991).

retentions must be modified to become retentions of retentions, and so forth (again, see Husserl (1991), section 11, 31). So long as "time-consciousness" in this sense obtains, my impressions of the world are guaranteed to be retained in the next moment, and those retentions are in turn guaranteed to be retained a moment later.

However, one can easily imagine violations of retentional modification in this sense. It is always possible that a given impression not become a retention, or that any particular retention not become a further retention. I could, for example, be sent in to a permanent coma, or I could die. In such cases the last primary impressions in my last state of consciousness are never modified to become retentions (and similarly for retentions in that final state). So, this version of the law does not seem to place any necessary constraints on how consciousness must unfold—that is, it does not support P3.

On a second interpretation, the law of retentional modification applies to the organization of impressions and retentions within particular experiences. On this interpretation, the conditional version of the law says "if time-consciousness obtains at a time, then my experience at that time is organized in such a way that every retention corresponds to a modification of a previous retention or impression." In that case, any temporally structured experience must involve an appropriate pattern of impressions and retentions. If I am to have an experience of an unfolding melody or a changing scene, for example, the various components of my momentary phase of consciousness must be structured in a particular way.

In this case, one could plausibly argue that the antecedent of the law will always

be true, insofar as all conscious experiences involve this kind of temporal structure.²¹ In that case the relevant pattern of retentional modifications *within* consciousness will always be in place. However, this version of the law of retentional modification does not place any necessary constraints on how consciousness must unfold in time, since it just tells us how individual conscious states must be structured. So P3, which says that some *changes* in conscious state are necessary, remains unsupported.

I believe these considerations generalize. In order to support P3, Husserl must describe a law that involves some necessary changes in consciousness. But I am aware of no interpretation of time-consciousness or any other aspect of phenomenology that requires consciousness to change in certain ways. Remember, we are considering "mental realities" or *seelischen Realitäten*, which includes conscious states as they are understood in the naturalistic attitude. Now consider all possible streams of conscious states in this sense, abstracting from any considerations about their neural basis. When I do this, using something like Husserl's own method of eidetic variation, I do not find myself constrained in any way. I can imagine a person going from being conscious to unconscious, unconscious to conscious, and I can also imagine arbitrary transitions between conscious states. Of course, many of these arbitrary transitions will violate personal identity or continuity, and will be unusual or philosophically problematic in other ways (and for this reason I don't consider my argument here to be fully worked

²¹ I'm not completely sure that the antecedent must be true here, since I can imagine totally chaotic experiences in which one's sense of time seems to disintegrate, e.g. what Husserl describes as a phenomenological maelstrom, where "the entire stream of appearance dissolve[s] into a mere tumult of meaningless sensations" (Husserl (1997), pp. 249-250. But perhaps those sensations, to be apprehended at all, must be retained consistently with the laws of time-consciousness, so I'm not sure.

out). Still, at least on the face of it, arbitrary transitions are possible. What are clearly *not* possible are arbitrary transitions, *on the assumption* that some other phenomenological structure (i.e. some form of time-consciousness) is in place. So, as far as I can tell, there is no way for Husserl to support P3. At best Husserl can describe conditional laws, which say that if some phenomenological structure is in place, then specific constraints apply.

The overall picture I am presenting is familiar. Mathematical laws, for example, are in a certain sense necessary, but their application to empirical domains is contingent. For example, a harmonic oscillator is a mathematical structure, which is such that if you put it in any initial state it will oscillate in a particular way forever. These behaviors are necessary: if a system is a harmonic oscillator, then for any initial state and future time *t*, the system *must* be in a unique state at *t*. However, whether a given physical system is in fact a harmonic oscillator is a contingent matter. A system might not be a harmonic oscillator. Or, a system might be well approximated by a harmonic oscillator for some period of time, but not after. At best we can say that *if* a physical system is a harmonic oscillator, then it is constrained to behave in some ways and not others. This shows how necessary laws can apply in contingent ways to real domains.

Husserl himself recognizes this point (see *Ideas* 3, section 7).²² In his discussion of the essence of material things, he points out that the hierarchy of essences in the region physical nature has a certain immutable form (i.e., is characterized by certain necessary structures), but also notes that as bodies contingently change over time they instantiate one, then another concept in this hierarchy. Husserl gives the example of a heavenly

²² This suggests to me that he would have conceded these points if they were presented to him. *Ideas 2* was, after all, more a series of exploratory notes than a polished manuscript.

body. There are certain necessary constraints on how a system must be structured to count as a heavenly body. But these constraints do not place any constraints on how physical systems in fact behave. If a system begins as a heavenly body, but changes in a such a way that the relevant concepts no longer apply, then the "generic" concept of a heavenly body does not alter. Rather, the physical system just stops being a heavenly body. As Husserl says, "A heavenly body can be altered; the stock of materially filled properties that characterize it can variously change; it finally ceases to correspond to the idea of heavenly body; other generic concepts then take its place" (*Ideas* 3, p. 30).

4. Contemporary Parallels

We have seen that Husserl anticipates various themes in contemporary philosophy of mind. In fact, the list of parallels is fairly extensive, and much of it is still unstudied.²³ In this concluding section I briefly explore the relationship between Husserl's analysis of psycho-physical laws, and certain themes in the contemporary metaphysics of mind literature. We will see that, while Husserl shares a general picture of mind-body relations with contemporary philosophers, he is open to more variations on this picture than most are, because he considers what is necessary and possible with respect to *our experience* of mind in the world.

Husserl describes an overall picture of mind-body relations that is shared by most contemporary philosophers. According to this picture, nature is structured into a

²³ But see Smith (1995), and Smith and Thomasson (2004).

hierarchy of "levels", where processes at lower levels give rise to processes at higher levels, via the kinds of synchronic supervenience relations described in section 2.²⁴ For example, when a brain changes from state B₁ to B₂ at the neural level, this gives rise to a parallel change at the psychological level, via (in my terms) a supervenience function which takes brain states B₁ and B₂ to mental states $f(B_1)$ and $f(B_2)$. This results in a system of parallel dependencies—a kind of block diagram—whereby diachronic causal processes interact with synchronic supervenience relations. A standard picture of this kind of scenario (adapted from Kim 2003) is shown in figure 2, where an unfolding physical process (from P to P*) determines a parallel unfolding mental process (from M to M*). The horizontal arrow corresponds to the unfolding physical process, while the vertical lines correspond to a synchronic supervenience relation.

$$\begin{array}{ccc} M & M^{*} \\ \uparrow & \uparrow \\ Supervenes & Supervenes \\ | & | \\ P - causes -> P^{*} \end{array}$$

Figure 2: A diagram illustrating a standard view of the relationship between physical and psychological processes (from Kim, 2003).

A substantial literature has grown up around this view of mind-body relations. For example, it is often believed, in line with "causal exclusion" arguments, that there is no

²⁴ The classic text describing this conception of nature is Oppenheim and Putnam (1958). Its contemporary development is associated with Kim's work (see, e.g., Kim, 2003).

such thing as true mental causation.²⁵ The only coherent way to make sense of the transition from M to M* (in figure 2), on this view, is as a kind of epiphenomenon of an underlying physical process: M does not cause M*, but rather leads to M* because of a causal process in the subvenient base whereby P causes P*. The argument relies on several premises, including the "exclusion" premise from which it draws its name (events can only have one sufficient cause), and the "causal closure of the physical", according to which all events have physical causes.²⁶

This argument is useful to focus on, since it allows us to emphasize ways Husserl differs from contemporary philosophers. In particular, because Husserl only endorses *partial* mental-physical supervenience, he allows that mental phenomena sometimes operate independently of their physical substrate. This leads him to consider a wider range of possibilities than Kim or most other contemporary philosophers in this area do. I will consider three specific differences here. In each case Husserl draws a conclusion inconsistent with Kim's argument, and also shows an awareness of the resulting conceptual issues. In each case it is interesting to note—consistently with the idea that Husserl's results can be transposed into contemporary philosophy—that though Husserl's position is uncommon, some contemporary philosophers have pursued similar lines of thought.

²⁵ For a review of this argument, and related arguments, see Robb and Heil (2009).

²⁶ The argument, in short form, is as follows. Suppose we assume that mental state M* leads to M. Suppose further that (1) (as is shown in the diagram) mental states supervene on physical states, (2) that effects can only have one cause ("exclusion" or "no causal overdetermination"), and (3) that all effects have physical causes ("causal closure of the physical"). The conclusion usually drawn from these (and a few other) premises is that M does not cause M*, but rather leads to M* because of an underlying causal process in the subvenient base whereby P causes P*. This is consistent with causal closure, since M* then has a physical cause, and with exclusion (absence of overdetermination), since M* only has one real cause, namely P.

First, Husserl accepts the possibility of "downward causation"—where mental phenomena cause changes in physical phenomena—which adherents of the standard view generally want to avoid.²⁷ Husserl refers to a scenario of "reverse dependency" where sensations are produced at the supervenient level, and the physical level changes accordingly. In such a scenario the mind has "its own causality", and physical changes in the body (indexed by a variable *B*) are dependent on *it*:

...[in such a case] we assume that the mind has its own causality, an inner empirical lawfulness, in the production of sensations; i.e., a causality that can first of all unfold in itself and lead to a sensation, to which the state of *B* would then be linked as dependent on it (*Ideas* 2, p. 309).²⁸

As an example, Husserl refers to "the voluntary production of hallucinations," where, presumably, we force ourselves to imagine or "hallucinate" something and the brain then enters an appropriate state to support that imagination.

Second, Husserl considers the possibility of temporal drift between the occurrence of a brain state and the occurrence of a mental state. That is, the vertical lines in figure 2 might, on Husserl's view, be slightly offset or "diagonal", so that some time could elapse between the occurrence of a brain state, and the corresponding mental state (O' Connor and Wong, 2005, also endorse this possibility). Moreover, Husserl makes the methodological point that the question of how the time of mental states relates to the time of physical states may not be empirically decidable at all:

It is problematic that it can ever be decided empirically whether or not there is an empirical succession in time here; i.e. whether or not the Objective temporal point of the cerebral stimulation, corresponding to the movement of the hand, must be

²⁷ But see O' Connor and Wong (2005).

²⁸ Again: "if a process in the brain alters, then there occurs an alteration of the corresponding set of lived experiences, the set of physical events, and perhaps the converse also holds" (*Ideas* 2, p. 173).

taken as the same identical temporal point of the sensations. Everything depends here on the way of defining the temporal point of a determinate state of consciousness (pp. 309-310).

Husserl accordingly gives some attention to the question of the "time of mental states", with interesting result. His main conclusion is that insofar as mental states are given as occurring at objective times, this is derivative on their having an underlying physical basis (p. 309).²⁹

Third, Husserl, allows for the possibility that there are no physical things at all,

which is clearly incompatible with contemporary assumptions:

It is *thinkable* that there would be no Bodies at all and no dependence of consciousness on material events in constituted nature, thus no empirical mind, whereas absolute consciousness would remain over as something that cannot simply be cancelled out (*Ideas* 2, p. 308).

In pursuing this analysis, Husserl addresses the question of what happens when a

disembodied soul becomes embodied. Does it thereby acquire psycho-physical

dependencies? "If we join [a disembodied mind] to a Body, then perhaps it becomes

dependent" (Ideas 2, p. 308; also see Ideas 3, p. 104ff).30

[Connect to gap literature]

²⁹ In the recent literature, questions about the timing of brain processes in relation to the timing of mental processes arise in Libet's (1999) well-known experiments, which involve simultaneous measurement of brain activity and mental states. Libet argues that brain activity leading to action is detectable a few hundred milliseconds before any conscious intention to act occurs. Though the concerns motivating Husserl's analysis are different from those motivating Libet, the discussions that followed Libet's experiments touched on some of the issues Husserl raises, e.g., the question whether the precise time at which a mental state occurs can be empirically decided at all.

³⁰ Similar questions arise in the contemporary physicalism literature, insofar as supervenience as standardly defined does not allow disembodied spirits to exist in some worlds but not others (see Witmer 1999). Analyzing this and related cases therefore requires a finer grained formulation of supervenience than is typically used (see *Author's Paper*).

Finally, Husserl considers whether experiencing a system of parallel dependencies (of the kind illustrated in figures 1 and 2) is sufficient for an experience of "animate organism." He argues that it is not, using the following thought experiment, where a set of mental states supervene on the internal states of a locomotive:

if the locomotive were fed water this consciousness would have the pleasant feeling that we call satiety; if the locomotive were heated, it would have the feeling of warmth, etc. Obviously, the locomotive would not, because of the make-up of such relationships, become "animate organism" for this consciousness (*Ideas* 3, p. 104; also see *Ideas* 2, p. 176, 258).

The argument is reminiscent of Searle's (1980) Chinese Room argument, since both cases rely on the intuitive force of an imagined scenario involving a system of formal relationships, which do not seem sufficient to support some further phenomenon (in Searle's case "intrinsic intentionality", in this case an experience of "real unity" between a mind and its body).³¹ We can experience a set of correlations between physical states and mental states, without experiencing the two fusing together in the way they do when we normally experience animate beings. What precisely this further component is, and (if it exists) how it is relevant to contemporary discussions, remains to be seen.³²

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³¹ Husserl makes a similar case in other areas, where he independently varies two qualities to show that they comprise distinct "moments" of a single conscious experience. For example, insofar as one can experience the sound of a word without its meaning (e.g. a foreign word prior to learning what it means), Husserl argues that sounds and meanings are separate components in acts of hearing.

³² I am grateful for helpful feedback on earlier versions of this paper from the Editors, an anonymous referee, and participants the Workshop in Phenomenological Philosophy, held at Seattle University in April 2010.

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