Husserl's Theory of Belief and the Heideggerean Critique*

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Abstract. I develop a "two-systems" interpretation of Husserl's theory of belief. On this interpretation, Husserl accounts for our sense of the world in terms of (1) a system of embodied horizon meanings and passive synthesis, which is involved in any experience of an object, and (2) a system of active synthesis and sedimentation, which comes on line when we attend to an object's properties. I use this account to defend Husserl against several forms of Heideggerean critique. One line of critique, recently elaborated by Taylor Carman, says that Husserl wrongly loads everyday perception with explicit beliefs about things. A second, earlier line of critique, due to Hubert Dreyfus, charges Husserl with thinking of belief on a problematic Artificial Intelligence (AI) model which involves explicit rules applied to discrete symbol structures. I argue that these criticisms are based on a conflation of Husserl's two systems of belief. The conception of Husserlian phenomenology which emerges is compatible with Heideggerean phenomenology and associated approaches to cognitive science (in particular, dynamical systems theory).

Heidegger's well-known critique of Husserl has recently received renewed impetus, thanks in part to Taylor Carman's (2003) detailed reconstruction in *Heidegger's Analytic.* Carman is building on earlier work by Hubert Dreyfus (1984, 1992), in which Husserlian phenomenology is taken to be a precursor of various tendencies in contemporary philosophy and cognitive science, which are collectively subject to Heidegger's critique. Two important lines of criticism emerge from these texts, both of which are directed at what we can call Husserl's "theory of belief."[1]

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[1] "Theory of belief" is a convenient but somewhat inaccurate way to designate the phenomenological concepts I wish to focus on. In using the phrase I mean to refer to Husserl's many and varied analyses of how subjects can take the world to be certain ways, from cases of focused theoretical contemplation ("I believe that door is exactly four feet wide") to cases of tacit understandings of how things work (I implicitly understand that my body can fit through that door). However, Husserl himself does not refer to a unified "theory of belief," and he would not apply the term "belief" (*Glaube*) in all the contexts I consider below.

The first line of criticism claims, in contrast to Husserl, that we do not posit any specific beliefs about things in everyday experience. For Heidegger, beliefs only emerge in special cases, e.g., what Dreyfus calls "breakdown," when entities stop working in their normal equipmental roles and are revealed as "present-at-hand" (*vorhanden*) things with properties. A related criticism claims, again in contrast to Husserl, that we do not normally take a "natural attitude" (*natürlich Einstellung*) towards the world, where things are (allegedly) thought of naturalistically, as objects with properties. A second line of criticism, due to Dreyfus, charges Husserl with thinking of implicit beliefs as discrete structures, analogous to symbol structures in AI models of the mind, which cannot capture the kind of holistic, embodied "repertoires" characteristic of skilled behavior.

Continuing work by other authors—in particular, McIntyre (1986), Arp (1996), Føllesdal (2000), and Lotz (2007)—I address these types of criticism from a perspective sympathetic to Husserl. I acknowledge that Husserl endorses an intellectualist phenomenology of belief, but argue that, as in Heidegger, this intellectualist phenomenology is just one aspect of a broader account of our engagement with the world. I also argue that Husserl's formalism is more subtle, and less problematic, than the Heideggerean critique suggests. What emerges is a conception of Husserlian phenomenology whereby it is largely (but not wholly) compatible with Heideggerien phenomenology and associated approaches to cognitive science.[2]

The paper proceeds in three parts. In section 1 I develop a "two systems" account of Husserl's theory of belief, which distinguishes embodied horizon belief from more attentive, conceptual forms of belief. Against this background, in section 2, I address at

[2] For further references to work on the Husserl-Heidegger relationship, and insightful commentary, see Crowell (2002), and Luft (2007). My take on the issue is probably closest to Føllesdal (2000).

length the charge that Husserl over-intellectualizes belief, arguing that this critique is based on a conflation of Husserl's two systems. In section 3 I address Dreyfus' assimilation of Husserl to classical symbolic AI. I acknowledge that Husserl defends a formal, "rule-based" theory of belief, but argue that these "rules" can be modeled by the kind of continuous mathematics (characteristic of dynamical systems theory) which Dreyfus endorses. Insofar as the discrete mathematics associated with AI apply to Husserl's theory, they apply (at best partially) to his second system of attentive processing. In the conclusion I suggest ways the envisioned Husserlian-Heideggerean approach to cognitive science could proceed.

1. Husserl's Theory of Belief

At every stage of his career, Husserl was what might be called a "dual-level" (or perhaps "multi-level") thinker, who distinguished fundamental from derived forms of experiential process, separately treated their dynamics, and urged others not to confuse the two.[3] For example, in his early writings on logic and mathematics Husserl emphatically distinguishes original thinking (*ursprüngliche Denken*) from the application of calculative and algorithmic techniques, which are "blind procedure[s] with symbols"

[3] Indeed, these contrasts were extremely prominent, often marking separate subdivisions of major works. Examples: *Philosophie der Arithmetik* is divided into two parts. Part 1 discusses "Authentic Concepts of Multiplicity, Unity, and Whole Number" while part 2 , "The Symbolic Number Concepts and The Logical Sources of Cardinal Arithmetic," discusses symbolic developments of the more fundamental experiences discussed in part 1. Husserl's Lectures on "Passive and Active Synthesis" are divided, as the name suggests, into separate treatments of passive and active synthesis. *Formal und transzendentale Logik*, again as the name suggests, separately treats formal logic and its grounding in everyday life, as well as (in part 2) the transition "From Formal to Transcendental Logic." *Erfahrung und Urteil*, is divided into three parts, where part 1 covers "Pre-predicative (Receptive) Experience" and part 2 covers "Predicative Thought and the Objectivities of Understanding."

(Hua XXII, p. 7; 1993, p. 55). He is critical of those who confuse the two, insofar as calculative techniques are "removed . . . from the movement of the original thinking—and often very considerably so" (Hua XXII, p. 53; 1993, p. 101). But he does not for that reason dismiss the symbolic procedures; indeed, he marvels at their power: "Today a child who has learned to calculate can do more than the greatest mathematicians could do in antiquity" (Hua XII, p. 350; 1993, p. 29). Much of Husserl's early work involves showing how symbolic techniques emerge in a systematic way from original thought processes. Though his early distinction between original thinking and symbolic techniques does not exactly mark out the distinction of interest here (insofar as both original and symbolic thought, in Husserl's sense, can involve a kind of attentive focusing), it does show that, from his earliest writings, Husserl distinguished between fundamental and derived thought processes, claimed both were important, and warned against simplistic conflations of the two.

Closer to our domain of interest is a series of contrasts Husserl marks in subsequent writings, where he distinguishes basic perceptual processes from more focused, attentive processes. For example, Husserl distinguishes passive and active synthesis (*passive, aktive Synthesis*); pre-predicative experience and predicative thought(*vorprädikative Erfahrung, prädikative Denken*); and, famously, the lifeworld and nature as a mathematical universe (*Lebenswelt, Natur als mathematisches Universum*). Underlying these different distinctions is a fundamental distinction between two "systems" or "levels" of belief: a first, more fundamental level of embodied perceptual

"horizons" and passive synthesis, and a second, derived level of attentive focusing and active synthesis.[4]

Let us begin at what I take to be the first, fundamental level, of simple perceptual processes.[5] For Husserl, the very possibility of encountering an object assumes a complex process of perceptual coherence, which involves a variety of distinct but interwoven phenomenological structures. Husserl describes perceptual coherence in the context of a "horizon" (*Horizont*) of possibilities, a structure of "preknowledge" (*Vorwissen*) at work whenever we interact with things. When things go as expected, our current experiences "fulfill" (*erfüllen*) our previous expectations, and the two experiences thereby undergo a passive synthesis of identification. Husserl also speaks of this in terms of "harmonious" (*einstimmig*) perceptual processes. When things do not go as expected, our experiences "frustrate" (*enttäuschen*) our previous "expectations" (*Erwartungen*) or "intentions" (*Intentionen*)[6] and as a result there is only a partial synthesis (it continues to be experienced as the same object but it is understood differently). The idea is that when things go as we expect we have a growing sense of confidence in our sense of an object, given the ongoing synthesis of information, whereas when things don't go as expected we tacitly revise our sense of the object.

Let us emphasize some features of Husserl's theory of "first level" horizon structures which will be important below.

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[4] Lotz (2007), p. 156, makes a similar distinction. Also see Barber (2008), pp. 86-87.
[5] The concept of intentionality is also of obvious relevance here; however, the discussion of intentionality is so rife with controversy (much of which does not overlap with the phenomenological problematic being pursued here) that I bracket the term and associated controversy as much as possible in this paper.
[6] In referring to our expectations about a thing Husserl seems to prefer "*Intentionen*" to "*Erwartungen.*" In English "intention" connotes purpose, and so I will prefer "expectation" or "tacit expectation" here. Other relevant concepts include anticipation (*Antizipation*) and adumbration (*Abschattung*).

First, horizon expectations do not exist in a vacuum, but are tied to possible circumstances, in particular, bodily movements (see, e.g., Hua IV, p. 58; 1980b, p. 63). What I expect to see regarding a door I interact with depends on how I move: if I move to the right, I expect the door to change its appearance in specific ways; if I move to the left, I expect it to change in other ways. In fact, Husserl sometimes describes "predelineated" or "prefigured" (*vorgezeichnet*) appearances as dependent variables relative to bodily movements (which are the independent variables):

> When I undertake a series of movement in the free system, "I move myself," the appearances that are arriving are already prefigured. The [prefigured] appearances form dependent systems. . . . Only through this interplay of independent and dependent variables is what appears constituted as a transcendent perceptual object . . . (Hua XI, pp. 14-15; 2001, p. 51-2).

Of course "right" and "left" are convenient shorthand: really, the field of movements open to me consists of a continuous range of possibilities, each of which is accompanied by a range of expectations. Not just possible body movements, but possible circumstances, are tied to horizon possibilities: if a projectile flashes past me and strikes the door jamb, for example, I have more or less specific expectations. I expect to see wood chips splinter off, but would be surprised to see it shatter like glass.

Second, horizon expectations or intentions are not explicit: they do not involve actively thinking "here is what I expect." Rather, they correspond to a kind of counter-factual or dispositional relationship between possible actions, perceptions, and degrees of fulfillment or frustration. Saying that the horizon of a city includes a tacit expectation that

when I turn left on Lake Avenue I will see the University in the distance does not mean that, when I am at Lake and turning left, I will necessarily have the thought, "Ah, now I will see the university." All my tacit expectation amounts to is a relationship between what happens and the degree to which I am surprised or not. If I do go on to see the university, I won't notice anything at all, and the whole process of expectation will have gone on without my noticing it.

Third, horizon expectations do not exist in discrete sets but correspond to continuous ranges of possibilities. Metaphorically, our tacit understandings are structured into what Husserl calls "leeways" or "latitudes" (*Spielräume*) of possibilities, which we can think of as ranges of possible further experience that are in varying degrees consistent with expectations relative to bodily movements. Suppose I walk through a door. At any moment during my walk through the door, I am open to a range of further door-like experiences—the wood of the door continuing in various grains and colors will all equally satisfy me, and thereby fulfill my tacit expectations. But some experiences can frustrate my expectations and surprise me in varying degrees: discovering that the door is metal is somewhat surprising, given its woodish appearance; discovering that it oozes blood is more surprising. Between what we expect and don't expect, then, there are gradations, corresponding to *how* surprised we would be if the relevant case occurred. Fourth, the horizon is dynamic, changing on the basis of our ongoing experience. What we expect relative to particular bodily movements (that is, how surprised we will be depending on what happens) is continuously being updated. For example, suppose that I think a door is made of wood, but it is actually made of metal. In that case I will initially be surprised by its weight and by the sounds it makes when it shuts. Expecting a thud, I

hear a clang. However, after using the door, the horizon will be updated so that these metallic behaviors won't surprise me in the future. Thus, lines of prefigured possibility traced out by the horizon of the door are updated when we interact with it. We will see below that this type of tacit horizon update is sometimes supplemented by another form of horizon change, via sedimentation and active synthesis.

Fifth, horizon expectations are based in part on type information. I expect some range of further experiences based in part on what I know of doors in general, of the "type" door. Dreyfus quotes Husserl on this point:

> When we see a dog, we immediately anticipate its additional modes of behavior: its typical way of eating, playing, running, jumping, and so on. We do not actually see its teeth; but we know in advance how its teeth will look—not in their individual determination but *according to type*, inasmuch as we have already had previous and frequent experience of "similar" animals, of "dogs," that they have such things as "teeth" and of this typical kind. (Dreyfus, 1984, p. 19, quoting Husserl, 1973b, p. 331).

Sixth, horizon structures can be formalized using geometric and topological tools. In a separate work (Yoshimi, 2006) I have begun to unpack Husserl's own tentative formalization of this theory in terms of "manifolds" (*Mannigfaltigkeiten*) of possibilities and "motivating" (*Motivierung*) relations between these possibilities. The basic idea is that when, for example, I see a door, I see it relative to an *n*-dimensional manifold of other possible perceptions of the door, where the *n* dimensions correspond to the number of distinct ways the perception can vary (by perceived color, size, etc; presumably there are many such dimensions so that we can say this is a high dimensional manifold).

Similarly, our sense of our ability to move with respect to the door can be modeled by an *n*-dimensional manifold of possible kinesthetic experiences. Let us call these a "perceptual manifold" and a "kinesthetic manifold," respectively. To model horizon structure, we can associate pairs of points in the perceptual and kinesthetic manifolds—that is, possible perception/movement pairs—with a probability gradient in the perceptual manifold, according to which, relative to a particular present perception and movement, some further perceptions are more expected (will surprise us less) than others. Husserl describes this gradient in terms of motivated possibilities: relative to a current perception and a particular movement, some horizon possibilities are motivated, while others are unmotivated but still possible. There is much more to say, but notice that the relevant mathematics are continuous, not discrete: the manifolds Husserl has in mind are generated largely by continuously varying properties (movements, shades of color, perspectives, etc).

Finally, note that the whole story told thus far corresponds to a kind of microphenomenology of what Husserl also describes using a coarser grained (and as we will see,somewhat misleading) vocabulary, according to which we have "doxic positing" (*doxische Setzung*) of beliefs about things in the natural attitude of everyday life. According to Husserl, in the natural attitude we take the existence of things before us for granted in simple, naïve "certainty" (*Gewißheit*). He calls this simple certainty one "belief characteristic" (*Glaubsenscharakter*) or "doxic modality" (*doxische Modalität*) among others (e.g., doubt, probability etc). The "general thesis" (*Generalthesis*) of the natural attitude is simply *that the world exists*, and that it is generally (but not always) the way we suppose it to be. We posit the existence of various things, we assume that the

door, the dog, the table, etc. exist, and exist in a particular way. But this does *not* mean that we have explicit thoughts about these things. When Husserl refers to our general "belief certainty" in the world and its objects he is ultimately referring to the fact that continuous processes of perceptual coherence unfold harmoniously. As he says, "the universal synthesis of harmonizing intentional syntheses corresponds to 'the' world, and belonging to it is a universal belief certainty" (Hua XI, p. 101; 2001, p. 146).[7]

Let us now consider the second level of the two-level account being developed here, whereby explicit beliefs actually do come on line and enrich our experience of the world. This is the level of "activity," where we voluntarily direct our attention in interacting with objects: "the realm of activity is . . . a realm of free volitional activity" (Hua XXXI, p. 11; 2001, p. 283); "all genuine activity is carried out in the scope of attentiveness" (Hua XXXI, p. 4; 2001, p. 276).[8] In such cases, a whole new set of structures, with their own distinctive dynamics, come on line and supplement the horizon.

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[7] Husserl not only says that doxic belief certainty is based on perceptual coherence; he also claims that "modalization" (*Modalisierung*) away from belief certainty is based on failures of perceptual coherence. In modalization, "simply pregiven" things turn out to be otherwise than we initially thought: "Modalizations of simple certainty of belief into conjecture, probability, and the like are modifications of an original simple believing consciousness, which is the medium in which all existents as objects of experience are at first simply pregiven for us" (Husserl, 1973b, section 7). Initially that thing in the distance was just a bush, but when it moves in an unusual way my tacit expectations are violated, I am momentarily confused and think that it may be a person in the shadows. I no longer simply take that to be a bush in belief-certainty, and the doxic modality of the percept is changed to doubt. This modification is in turn based on frustration, where our tacit expectations conflict with our subsequent perceptions. As Husserl says, when perceptual expectations "come into conflict with one other, then the belief proper to self-giving is inhibited" (Hua XI, pp. 99-100; 2001, p. 144).

[8] The primary discussion of active synthesis is contained in Hua XXXI, translated in Husserl (2001). An interesting discussion in the secondary literature is in Gurwitsch's exchange with Dussort at the French Society of Phenomenology (see Gurwitsch 1966, pp. 171ff). Gurwitsch is insistent that the primary function of active synthesis is to constitute new forms of objectivity from materials themselves constituted in passivity, and that this function should not be confused with that of attention. The position I take here—supported in the main text of this paper—is that active syntheses as understood by Husserl involved both (1) the constitution of new forms of object and (2) the operation of attention. However, Gurwitsch is right to distinguish the two, and I think that interdisciplinary work along the lines suggested in the conclusion could tease apart these various aspects of passive and active synthesis—e.g., dissociating degree of attention from the function of constituting new forms of object—giving rise to something more complex and nuanced than a simple "two-level" account.

Again we emphasize several features that will be important in considering the Heideggerean critique.

First, the move from passive to active processes involves the constitution of new forms of experienced objects, which would not exist for us were it not for our willful activity and focusing. When I notice that the door is made of plywood, the door's being made of plywood becomes my object of thought. Husserl calls this "explication" (*Explikation*).Gurwitsch, drawing on Gestalt theory as well as on Husserl, refers to a similar phenomenon under the heading of "disengaging thematization," which involves

> disclosing and making explicit . . . components, constituents, moments, or whatever denotation one might prefer, which are involved and effective in a given theme and the conscious activity related to it, but which, prior to their being disengaged and disclosed, are effective in only an implicit fashion, silently, to speak with Merleau-Ponty, or in an anonymous way, to use a Husserlian expression (1974, p. 37).

Gurwitsch goes on to point out that disengaging "silent" constituents of an experienced object can "serve as a point of departure for the constitution of objects other than those which are encountered in the common sense world or lifeworld" (1974, p. 37).The important point here is that when we focus on the properties of an object, we do not simply cast light on what was previously there in a dimmed down way. On the contrary, we marshal together constituents of the embodied horizon structure to construct *new forms* of experiential object. From our embodied ability to interact with the door—which takes the form of a set of counterfactuals regarding what will or will not be surprising with respect to it—we create an explicit sense of the actual width of the door: it is less

than 5 feet wide. There was no dim version of the explicit thought "it is less than 5 feet wide" before we had that thought, though we would have previously been surprised were a 6 foot wide object to have been pushed through it.

Second, when we disengage or explicate a property of an object, this changes the way the object is for us. Our attentive activity leaves a "precipitate" or "sediment" (both are translations of *Niederschlag*) that changes the way we experience the object in the future. After actually noting the door's construction I will, henceforth, see this as a door made of plywood, though that fact won't always be thematic. In this case we *will* in some sense, maintain a dimmed down sense of a previously active thought. For Husserl, then, active processes involve explicit—and in a sense constructive—recognition of the properties of an object and the subsequent merging of this recognition back into our sense of the object itself. Thus, the processes of accruing sediments corresponds to a different kind of horizon change than we saw in the passive case. When I simply walk around an object, a complex field of expectations is gradually updated so that subsequent interactions will involve different tacit expectations. With active processes, by contrast, a finite set of explicit observations about a thing—the door is three feet wide, it is made of plywood, etc.— are added as layers of sediment to our sense of it.

Third, active processes are the basis of the transition from basic perceptual experience to linguistic processes, in particular, predicative judgments. In this way we proceed in stages from our basic embodied sense of a thing to a theoretical articulation of the same thing. In the course of this process tacit horizon meanings are formed into explicit awareness of an object's properties and ultimately into communicable statements concerning the nature of the object.

More work remains to be done on this interpretation of Husserl's theory of belief. The discussions of active synthesis and language, in particular, need further development. Moreover, the two level distinction itself runs together several distinctions, including attention vs. inattention, different forms of synthesis and constitution, different forms of horizon change, and different dynamical processes of engaging with an object. There are also other relevant distinctions, e.g. distinctions between implicit and explicit forms of learning, degrees of familiarity, and most notably the distinction between conceptual and non-conceptual content. (I have implied that the first level does not involve conceptual content in the same way the second level does.) These distinctions need to be clearly distinguished and related to one another systematically, especially in light of the many lines of relevant philosophical and empirical work that are emerging in the literature. In the conclusion I make some suggestions for further study along these lines.

2. Heidegger's Critique of Positing, Doxic Mode, and the Natural Attitude

For Heidegger, our everyday being-in-the-world (*In-der-Welt-sein*) involves no positing or belief whatsoever. As Heidegger says, he simply cannot "find" beliefs in everyday experience; the world is just there for us, prior to our having any belief that it is there: I have not yet been able to find this phenomenon of belief, rather the peculiar thing is just that the world is 'there' prior to all belief . . . any purported belief in it is a theoretically motivated misunderstanding (Heidegger 1992, pp. 215-216). Carman, elaborating on this quote, says:

> Heidegger rejects the notion that everyday experience or understanding rests on (doxic) positing acts of consciousness in which we suppose or take for granted the existence or presence of objects. It is never experienced in the manner of being believed (Carman 2003, p. 71).

Moreover, Heidegger rejects Husserl's characterization of the natural attitude as a fundamental attitude within which our basic belief in the physical world unfolds. To Heidegger, the natural attitude, with its emphasis on physical and even zoological characteristics, seems like a naturalistic attitude, an attitude reserved for scientists and theorists in special circumstances:

> What is here fixed as the given in the natural attitude, namely that man is given as a living creature, as a zoological object, is this very attitude that is called natural. Is it the natural mode of reflection, for man's form of experience . . . to experience himself as *zoon*, as a living creature, as a natural object in the widest sense, which occurs in the world? In his natural experience, does man experience himself, in a word, zoologically? Is this attitude a natural attitude or is not (Heidegger 1992, pp. 112-113; quoted in Carman 2003, p. 73).

As Heidegger suggests, the natural attitude thus understood may be profoundly *un*natural. Carman elaborates: "It is an experience that is *not at all* natural but harbors a definite theoretical stance" (Carman 2003, p. 73)—in particular, the stance of a natural science.

Heidegger's critique and Carman's elaboration are based on valid phenomenological observations. It is indeed phenomenologically inaccurate to describe everyday life on the same model as theoretical comportment. We don't normally walk

around theorizing about things or expressing our belief in them. However, as should be clear from part 1 above, Husserl does not commit such errors.[9] Husserl explicitly distinguishes fundamental from derived modes of engagement with things, locating theoretical articulation (e.g., predicative judgments) among the "active" modes of attentive focusing which I called the "second level" of belief. Moreover, precisely the kind of critique Heidegger launches against Husserl, Husserl launches against others. As we saw, already in his earliest works Husserl criticizes logicians and scientists for confusing their derived methodological procedures with structures of everyday experience. Let us focus, however, on those concepts that Heidegger and Carman explicitly call into question: positing, doxa, and the natural attitude.

With regard to positing and doxa, it is true that Husserl applies these concepts to everyday experience, so that we can speak of pre-theoretical positing and doxa (of this more below). But he is quite clear that the way positing and doxic modes work in "theoretical acts" *differs* from the way they work in everyday life. As he says in *Ideen II*:

> It is one thing to be conscious at all that the sky is blue, and it is another thing to live in the performance of the judgment (that the sky is now blue) in an attentive, explicitly grasping, specifically intentional way. Doxic lived experiences in this attitude, in this manner of explicit performance (I think, I perform an act in the specific sense, I posit the subject and thereupon posit the predicate, etc.) we term theoretical acts (Hua IV, pp. 3-4; 1980b, p. 5).

[9] Compare Arp (1996), p. 165ff; Lotz (2007), p. 156 ff.; and Føllesdal (2007), p. 252ff.

Husserl also recognizes a contrast between the natural world of everyday life and "naturalistic attitudes." In fact, section 49e of *Ideen II* is entitled "The Naturalistic Attitude and the Natural Attitude." The latter is, as Husserl puts it, "an entirely natural and not an artificial attitude," whereas the former is artificial, having "to be achieved and preserved only by special means." Husserl is thus well aware that "in the natural life of the ego we do not always—indeed not even predominantly—consider the world in a naturalistic way, as if we were doing physics or zoology . . ." (Hua IV, p. 183; 1980b, pp. 192-3). He goes on to emphasize that even the zoologist and the psychologist do not live primarily in a theoretical world.

Thus it is clear that Husserl did not intend his ideas to be understood the way Heidegger and Carman construe them, for he makes the same distinctions and argues against the same confusions they do. Moreover, there is evidence that Husserl explicitly thought of his view as being consistent with Heidegger's. Husserl's marginalia to *Being and Time* do not contain objections to the passages where Heidegger criticizes the assumption that theoretical contemplation characterizes everyday experience. For example, Husserl does not object to Heidegger's comment that "a regard that looks at things only 'theoretically' fails to understand their usefulness." He does, however, say that the theoretical regard does important work: "a theoretical look at the implement is required if we are to grasp and have it as such objectively and to explain it descriptively" (Husserl, 1997b, p. 315). Recall Husserl's insistence that, though it is an error to confuse symbolic and authentic thought processes, both are important.

Given that Husserl would accept the distinction between everyday and theoretical comportment, why does he use words like "positing" and "doxa" and "attitude" in

characterizing the phenomenology of everyday life? Doesn't this commit him to the position that Carman and Heidegger criticize?

The short answer is that Husserl does not mean by these terms what Heidegger and Carman take him to mean. When Husserl refers to the general "thesis" or "positing" of everyday life, he is simply saying that the world is always "there for us," whether we think about it or not, and that it is there for us in more or less specific ways, which are supported by the complex process of perceptual coherence described above. However, this answer will not satisfy all critics, in part because of Heidegger's view that traditional philosophical language essentially involves problematic metaphysical assumptions. One cannot simply use these words however one likes, given their historically conditioned meanings.

The question of the function of language in phenomenology is an important one, worthy of its own extended analysis. Let me briefly state my own view of the issue (without, however, claiming to settle it). I think Heidegger is right to be attentive to language, but wrong to be so dismissive of traditional expressions. Nothing Heidegger has to say about the hermeneutic method is sufficient, so far as I can tell, to show that the language Husserl uses is irremediably committed to false assumptions. Decades of Heideggerean phenomenology have created an atmosphere within which deployment of certain traditional terms is automatically deemed suspect, and, I think, wrongly so. We can begin with a pre-understanding of what, for example, "positing," "expectation," and "belief" are, and refine these concepts in something like a hermeneutic fashion to make them more accurate. Under the pressures of the Heideggerean critique, I believe we have done (and will continue to do) just that. Thus, I think we can talk unproblematically about

"doxic mode," "belief," "positing," and "natural attitudes," as well as "representation," "content," "consciousness," and "appearance" (though examination of those concepts is a project for another time), as they apply to everyday, non-theoretical life. Moreover, it is worth pointing out that many of Husserl's terms are, like Heidegger's, innovative and appropriately connotative (e.g., "passive synthesis," "continua of fulfillment," and "predelineated manifolds").

I have argued that the Heideggerean critique fails to apply to fundamental or "first level" beliefs, which, for Husserl, correspond to embodied perceptual processes that are non-theoretical and inattentive. Carman and Dreyfus anticipate this line of argument. Carman, for example, denies "that our primitive attitude toward the world is one of belief*, even prepredicative belief*" (Carman 2003, p. 71, my emphasis). Carman does not elaborate on this extension of the critique of belief to tacit belief. Dreyfus, however, does. Dreyfus says that, for example, our belief that objects exist for us even when we don't think about them is a case of "retroactive illusion," based on a misapplication of the phenomenology of attentive engagement to the pre-attentive realm:

> It might be that in walking out the door of my office I am simply engaging in a bit of motor activity, which may (or may not) once have been accompanied by the idea "there is more floor out there," but which takes place now without such a belief playing any functional role (Dreyfus 1984, p. 25)

The same might be said of an alleged belief that the door exists. Such a belief plays no functional role in my ability to walk through it. The door engagement was just a bit of "motor activity." So Dreyfus' response to my defense of Husserl would presumably be

that the whole apparatus of tacit beliefs, positings, and attitudes is a series of retroactive illusions, falsely attributed to everyday life on the basis of the attentive mode in which we exist in when we theorize.[10]

I think that the proper response to this depends on how we interpret Dreyfus's analysis of "motor behavior." On the one hand, Dreyfus could say that in motor behavior we interact with a world that is in some sense "there for us." In that case there is no substantial conflict between Husserl and Heidegger, for, as we saw above, this is precisely how Husserl conceives our tacit belief in the world. On the other hand, Dreyfus seems to suggest that the door is something I am *not conscious of at all* as I walk through it. Walking through the door is a bit of mere "motor behavior," unaccompanied by "conscious uptake." In that case we have a genuine phenomenological difference between Husserl and Heidegger, insofar as Husserl believes we do have some pre-theoretical consciousness of the world.

In the second case, there are several arguments we can give in support of Husserl.[11] First, on this reading, the mere motor behavior account implies that we are not conscious of the world at all until we interact with it theoretically. This in turn implies that the door emerges and vanishes when I think about it, appearing out of a void and disappearing back into that void. But this seems highly implausible. When we move from absorbed practice to theoretical engagement we do not experience objects and properties appearing from *nothing*. It seems phenomenologically more plausible to say that in such

[10] More recently, these have also been described as "refrigerator light" illusions: We assume that all experience is the way it is when we attentively focus on it, just as someone could assume that the refrigerator light is always on, based on its being on whenever the door is open (O'Regan and Noë 2001).
[11] Similar arguments are given by Arp (1996), p. 163ff.

cases we experience something that was already there in a new way.[12] Dreyfus might argue that the world is indeed there all along, just not in the manner of "conscious uptake." But then we are back to the first case of a mere terminological dispute.

Second, there is a manifest difference between absorbed, pre-theoretical "coping" and completely unconscious processes. Consider the following contrast: We could sleepwalk through a door, or be put in to a hypnotic trance and instructed to walk through it. Both cases seem different from the case where we walk through the door awake and undrugged, but without focusing on the door. If we wakingly but inattentively walk through the door, the door is in some sense "there for us," whereas it is *not* there for us if we sleepwalk through it. Husserl, for better or worse, describes this way it is there for us using traditional language of consciousness and belief.

I have thus far considered (1) the possibility that the dispute regarding belief is merely terminological, and (2) the possibility that there is a substantive disagreement regarding the presence of consciousness in pre-theoretical life. A third possibility is that Dreyfus would agree with Husserl that the world is "there for us" prior to our thinking about it, but deny that that in focusing on objects we simply change the "degree of focus" with which they are given. The difference between the door when I focus on it and the door prior to my focusing on it is not simply a matter of attentional degree; the pre-focal door is not a "dimmed down" version of the focally experienced door. Here I think the Heideggerean phenomenology offers useful supplementation to Husserl, insofar as it emphasizes that in focusing on the properties of a thing, the way that thing is given

[12] This kind of argument has also played out in the empirical literature on consciousness, where Crick and Koch (1990), p. 72, are critical of the notion that consciousness is dominated by a spotlight of attention: "Would such a mechanism not lead to a sort of 'tunnel vision,' in which the currently attended location appears in vivid detail with its associated perceptual attributes while everything else is invisible?"

actually changes. Of course, as we have seen, Husserl makes the same point: in focusing on the properties of a thing, we explicate—and in a sense "disengage"—silently effective constituents of the simple perception and thereby constitute a new form of experienced object. For example, I go from an embodied understanding of the door (according to which I'd be surprised if a five-by-five object fit through it but have given no thought to its actual width) to an experience of the door in relation to the proposition that it is three feet wide. On the other hand, there are passages in Husserl that suggest the problematic view which Dreyfus, on this reading, rightly criticizes (see, e.g. *Ideen I*, section 31, and some sections of *Erfahrung und Urteil*).

Finally, it is worth noting that a version of this dispute concerning pre-theoretical phenomenology has unfolded in the empirical literature on "inattention blindness," with similar results. On the one hand, there is considerable empirical evidence that suggests we are less aware of factors that we do not attend to than we might otherwise think. For example, in a series of famous experiments dating back to Neisser's work in the 1970s, it has been shown that we fail to see "highly visible objects we may be looking at directly when our attention is elsewhere" (Mack 2003, p. 180). In one striking version of the experiment (Simmons and Chabris 1999), students pass a ball to which subjects are told to attend while a person in a gorilla suit walks right through the students. Amazingly, a large percentage of subjects don't even notice. (The paper reporting this result is titled "Gorillas in Our Midst"). On the other hand, the fact that unattended data are not recognized does not entail that they are unconscious, and in fact there is evidence that those data have some form of "peripheral phenomenology."[13] Thus, the evidence

[13] For example, according to Mack (2003), p. 182, researchers have, by a variety of ingenious means, "shown that under conditions of inattention, basic perceptual processes, such as those responsible for the

suggests that attention involves a radical change in phenomenology, as against the emergence of phenomenology where there was none before.

3. Dreyfus' Critique of Horizon Theory and AI

A second line of critique targets Husserl's concept of a perceptual horizon. This line of critique originates in Dreyfus' critique of artificial intelligence. Dreyfus' early work in this area begins with the publication of a RAND technical report in 1965 and culminates in the publication of *What Computers Can't Do* in 1972. In this period, however, Husserl is a "good guy," one of a range of continental philosophers Dreyfus draws on in mounting his critique of AI. However, by the 1980s Husserl was no longer one of the good guys and was being actively associated with symbolic AI and its problematic assumptions. By 1984, Dreyfus was calling Husserl "the father of current research in cognitive psychology and artificial intelligence."[14]

One specific comparison Dreyfus draws is between Husserl's theory of horizons and Marvin Minsky's account of "frames." Frames are data structures encoded in AI systems that agents are taken to rely on in processing information about the objects they

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grouping of elements in the visual field into objects, are carried out and influence task responses even though observers are unable to report seeing the percepts that result from those processes."

[14] An important precursor to the comments below is Ronald McIntyre's "Husserl and the Representational Theory of Mind" (1986). Let me briefly say how our two projects relate. McIntyre sets out, as I do, to show that Dreyfus' assimilation of Husserl to AI is problematic. Moreover, McIntyre shows that horizon structures associated with intentional states (which account for the "positing" character described above) do not have the linguistic structure attributed to them in AI and cognitivism. Thus far the projects overlap. However, McIntyre's critique of Dreyfus has different emphases. McIntyre argues, convincingly, that for Husserl meaning is not reducible to formal syntax in the way it is for some computationalists. My emphasis is not on reducibility or even (focally) meaning, but rather on the structure of belief and the perceptual processes that support it. I ask whether the rules involved in horizon meaning are discrete and finitely denumerable, as they are in an AI system. Another project McIntyre takes up, which I do not, is a well executed and, I think, sound analysis of the points of *agreement* between Husserl, AI, and Fodor's computationalism.

encounter. In encountering a door, for example, a door frame is called up and this frame organizes an agent's interaction with the door (e.g., its ability to answer questions about it). As Minsky describes it:

> A frame is a data structure for representing a stereotyped situation, like being in a certain kind of living room, or going to a child's birthday party. . . . We can think of a frame as a network of nodes and relations. The top levels of a frame are fixed, and represent things that are always true about the supposed situation.The lower levels have many terminals—slots that must be filled by specific instances or data. . . . Much of the phenomenological power of the theory hinges on the inclusion of expectations and other kinds of presumptions. A frame's terminals are normally already filled with "default" assignments. (Dreyfus 1984, p. 19, quoting Minsky).

Dreyfus draws the following connection with Husserl's account: "In Minksy's model of a frame . . . Husserl's predelineations have become 'default assignments'—additional features that can normally be expected" (Dreyfus 1984, p. 19). Dreyfus also refers to the inner horizon of an intentional content as "a symbolic description of all the features which can be expected with certainty in exploring a certain type of object" (Dreyfus 1984, p. 35).

Dreyfus goes on to criticize frames and, by extension, Husserl's theory of horizons. According to Dreyfus, one cannot explain our engagement with the world in terms of atomistic, context-free symbol structures and explicit rules that generate expectations and allow us, for example, to answer questions. His arguments draw

broadly on the Continental tradition to show that facts and rules only make sense relative to a global background of understanding within which particular facts appear and specific rules are applied. For example, he draws on Heidegger to argue that any particular fact only "gets its whole meaning from its pragmatic context" (Dreyfus 1992, p. 261). He draws on Merleau-Ponty to argue that our understandings of things are informed by our sense of our bodies and how they interact with things. For example, Dreyfus says that our understanding of chairs cannot be codified by a set of facts and rules of chair interaction behavior but rather corresponds to an indefinite field or "repertoire" of embodied chair behaviors:

> Anyone in our culture understands such things as how to sit on kitchen chairs, swivel chairs, folding chairs. . . . This ability presupposes a repertoire of bodily skills which may well be indefinitely large, since there seems to be an indefinitely large variety of chairs and of successful. . . . ways to sit on them (Dreyfus 1992, p. 37).

The overall picture that emerges is one in which the analysis of human experience in terms of isolated facts and rules is based on a set of traditional mistakes passed from the empiricists (who focused on isolated facts) and rationalists (who focused on isolated rules), to Husserl, contemporary representationalists like Jerry Fodor, and Artificial Intelligence researchers. Thus we have a line up between Husserl, "GOFAI" (Good Old Fashioned Artificial Intelligence), and the representational model of mind:

> Representationalism assumes that underlying everyday understanding is a system of implicit beliefs. This assumption is shared by intentionalist philosophers such as Edmund Husserl and computatonalists such as Jerry

> Fodor and GOFAI researchers. The specific AI problem of representing all this knowledge in *formal* rules and features only arises after one has already assumed that common sense derives from *a vast data base of propositional knowledge* (Dreyfus 1992, p. xvii).

Before addressing this critique, let us briefly consider Dreyfus' positive views in this area, for we will see that the version of cognitive science Dreyfus endorses is quite similar to the form of cognitive science most consistent with Husserl's thought. For a time Dreyfus considered neural networks as a valid model of intelligence; though rejecting them ultimately, he was enthusiastic about their ability to behave intelligently without relying on explicit rules (Dreyfus 1992, p. xiv). In his latest work, Dreyfus is cautiously optimistic about dynamical systems approaches to cognitive science, in particular Walter Freeman's. Dreyfus notes with approval that

> [Freeman's] model instantiates a genuine intentional arc according to which there are no linear casual connections nor a fixed library of data, but where, each time a new significance is encountered, the whole perceptual world of the animal changes so that that significance that is directly displayed is contextual, global, and continually enriched (Dreyfus 2007).

We are now in a position to address Dreyfus' critique.I consider four specific implications of Dreyfus' assimilation of horizon theory to symbolic AI, and in each case show the implication to be inconsistent with Husserl's own statements regarding his "first level" horizon theory. To a limited extent the Husserl/AI analogy works for Husserl's

"second-level" of active, predicative processes.[15] In the process of showing Husserl's horizon theory to be inconsistent with the form of symbolic AI Dreyfus criticizes, we see it to be consistent with the dynamical systems approach Dreyfus endorses.

First, in thinking of the horizon as "*a vast data base of propositional knowledge*" (Dreyfus 1992, p. xvii), Dreyfus implies that horizons have a linguistic, propositional form, akin to the lines of code in a traditional AI program. However, we have seen that for Husserl only the active level, the predicative level, is propositionally structured. Indeed, it is only via a process of explication that we come to be aware of things in a propositional way at all.As we saw in section 1, the more fundamental process of perceptual coherence that grounds our basic awareness of things is non-linguistic, consisting in complex relations between continuous manifolds of possible appearances and bodily movements. Thus, horizons are *not* well modeled by symbolically structured computer programs, but rather by continuous mathematics and dynamical systems theory of precisely the kind Dreyfus finds attractive.

Second, Dreyfus assumes that horizon expectations exist in sets with a discrete topology, taking the form of "isolated facts" in a database. Horizon expectations are assumed to be "atomistic" and "context free." However, Husserl explicitly denies that the anticipations or intentions associated with horizon processes are "isolated":

> [T]hese complex syntheses cannot remain isolated. All particular syntheses, through which things in perception, in memory, are given, are surrounded by a general milieu of empty intentions being ever newly

[15] Compare Arp (1996), pp. 167-171, and Føllesdal (2007), p. 253. Also note that there are some genuine (and I believe, non-problematic) parallels between Husserl and the project of symbolic AI, in particular, those described in McIntyre (1986).

> awakened; and they do not float there in an isolated manner, but rather, are themselves synthetically intertwined with one another (Hua XI, p. 101; 2001, p. 146).

Moreover, Husserl, perhaps hearkening back to his early work in the calculus, consistently describes horizon processes in terms of"continua" (*Kontinua*). To give just one example, he says that "every single aspect of the object in itself points to a continuity, to multifarious continua of possible new perceptions, and precisely to those in which the same object would show itself from ever new sides" (Hua XI, p. 5; 2001, p. 41). A continuum of possibilities is *not* a discrete set. A continuum can be approximated by a discrete set but the two are fundamentally different in kind. (Compare any real-valued function, which can be approximated to arbitrary precision by a rational function but which is fundamentally different in kind). So the expectations or intentions that exist in horizons are clearly not a form of isolated data. Note, moreover, that Husserl's positive view in the passages above is very much like Dreyfus', insofar as syntheses form a "continuity," a "general milieu" (*allgemeines Milieu*), a kind of holistic context relative to which all particular experiences of an object make sense.

Third, Dreyfus assumes that horizon structures, *qua* symbolic AI-like databases, are fundamentally disembodied. However, as we have seen, basic level horizon processes *are* embodied, insofar as our tacit expectations relative to things do not exist in a vacuum but are tied to specific bodily circumstances. The door will appear brown and grained in a particular way *if I move in this way relative to it*. Husserl even refers to "a constitutive duet being played: (1) the system of my free possibilities of movement . . . (2) every

visual sensation or visual appearance that arises in the visual field" (Hua XI, p. 15; 2001, pp. 51-2).

Fourth, Dreyfus, assumes that Husserl is a kind of computationalist who accounts for all knowledge, including horizon knowledge, in terms of "formal rules and features." Thus, in generating the expectations that correspond to our tacit understanding of a thing, or in answering questions about things, we recall explicit rules from an internalized database. Against this reading of horizon structure, first, as we saw in section 1 above, Husserl openly criticizes the view that normal human thought is rule based or algorithmic. Indeed, one of his guiding projects in his early work is to show how symbolic and algorithmic calculation techniques are derivative on more fundamental thought processes. Second, if I am right that horizons are best modeled using continuous dynamical systems, it is misleading to think of horizon structures as being generated by explicit rules. Just as neural networks and Freeman-style dynamical systems behave in a regular way without being programmed using explicit rules, so too with horizon structures. There are regularities in the way the horizon works, and these could be approximated using explicit rules, but the underlying structures are best understood as non-rule-based structures of a complex dynamical system coordinating bodily movement, tacit expectations, and perception.

One could respond to this last point by citing Husserl's references to the "rules" (*Regeln*)and "syntaxes" (*Syntaxe*) at play in perceptual processes. For example, Husserl says "motivations have their definite syntaxes, their form and rule" (Hua XIII, p. 166; 2006, p. 60); or again, "the ideal of a spatial thing prescribes *a priori* to possible consciousness of such a thing a set rule" (1981, p. 17). However, in these cases Husserl is

simply arguing that there must be *some* regularity in how the appearances occur relative to one another and our bodily activities, without committing himself to the kind of formalism employed by a traditional AI system. As he puts it: "The regional idea of the physical thing . . . *prescribes rules governing the multiplicities of appearances*. That means: there are no multiplicities whatever that accidentally come together" (Hua III, p. 314; 1980a, p. 361). Saying that there are no multiplicities that "accidentally" come together does not imply that the structures which prevent their accidental coming together correspond to explicitly coded rules. Again, even in his earliest works Husserl denies that we should think of fundamental experiential processes as being rule driven in the manner of a symbolic calculus.

I do think Dreyfus' comparison of horizon theory and AI succeeds, at least in part, at the "second level" of explicit, predicative belief described above. Husserl does describe active synthesis and predicative thought in quasi-linguistic terms. Moreover, predicative thoughts persist as sedimented layers in our subsequent experience, so that we can think of sediments in terms of a finite set of propositionally structured past observations. However, even here there are disanalogies: sedimented layers of past activity do not all have equal status (we remember recent activity more than that of the distant past). Moreover, though Husserl is not explicit on this (as far as I know), it is certainly consistent with Husserl to assume that sedimented memories eventually coalesce into a kind of indistinct mass, such that, even if individual memories can be reconstituted from the horizon of the past, prior to being reconstituted they exist in some more complex form than a finite list would suggest.

4. Conclusion

The overall picture of belief we have in Husserl is as follows. In our daily lives we do not live in a blank nothingness or a chaotic swarm; we live in a world, and that world is made up of objects. For the most part those objects are just there for us, in the background. This does not mean they are nothing—as I drive through Merced I am aware that I am in Merced, in the physical world, on a specific day driving a specific car—but these facts are not focally engaged by my attention. For the most part I believe in simple naïve certainty that things are as they seem to be, though when things go against my expectations this naïve certainty can be modalized into disbelief and various grades of doubt.

There is a complex, continuous, multi-dimensional structure supporting these tacit beliefs about the world, a holistic field of expectation and predelineated horizon meaning, which can be formally analyzed in terms of manifolds of possibilities and probability relations between them. Because appearances unfold in a certain stable way, relative to my bodily engagement with the world, I have a general confidence in things being the way they seem to be.

Sometimes the world is focused on, spoken about, and in general made an object of explicit inquiry. In these cases a separate system of active synthesis is brought on line, which focally explicates the properties of things and sometimes expresses this articulated structure in language. Those focal thoughts about objects are not subsequently forgotten but are sedimented into our understanding of them, so that in future engagements with the

same thing we are aware of it both in terms of a continuous horizon of tacit meanings and a more discrete stratification in terms of what we have previously thought about it.

I have argued that this whole story is compatible with Heidegger's early phenomenology and largely immune to extant Heideggerean critiques. A certain straw reading of Husserl was no doubt helpful to Heidegger and his successors for the purpose of clarifying a traditional picture of philosophy that was being rejected. But once we see that Husserl also rejects that traditional picture (while retaining some of its language), exciting collaborative possibilities are opened up, both between Husserl and Heidegger and between the two of them and cognitive science.

For example, in the behavioral literature a well established (albeit controversial) position claims that human thought and reasoning are based on distinct processes, "a holistic, affective, association-driven experiential system that coexists with an analytic, logical, and reason-oriented rational system" (Shafir and LeBeouf 2002, p. 499). Or again: in computational cognitive science there has been a long-standing debate between AI models, which emphasize rule-based symbolic processes, and neural network models, which emphasize more flexible forms of associative pattern recognition. Recently it has become popular to build hybrid computational models in which both forms of processing are combined.[16] Thus in the behavioral and the computational literature, as in Husserl and Heidegger, distinct perceptual and symbolic modes of engagement with the world—each with their own structure and dynamics—are posited, as are complex relations between

[16] Perhaps the *locus classicus* in this literature is Paul Smolensky's *The Proper Treatment of Connectionism* (1988), which argues that high level symbolic processes are a kind of statistical approximation of lower level "sub-symbolic" processes characterized by "slowly shifting harmony landscapes" (p. 22). However, Smolensky thereby treats symbolic processes as simply a high level description of what is fundamentally a low-level dynamical process. More recent evidence suggests there is actually separate circuitry (in the prefrontal cortex) that subserves symbolic forms of cognitive processing. For review of these more recent approaches, see Munakata and O'Reilley (2000), ch. 11.

them.[17] Different methodologies are used in each case (behavioral experiments, computational models, Husserlian and Heideggerean styles of phenomenological analysis), and as a result different aspects of the distinction are emphasized. But by interleaving these different approaches—and in the process, revising all of them—I think a richer account of the relationship between embodied perception and symbolic thought will emerge than would otherwise be possible.

[17] Other philosophers and debates are relevant here, e.g. Cussins (1992), and the recent exchange between McDowell and Dreyfus (see Dreyfus 2006, and the papers collected in *Inquiry* 50:4). The terse, later rounds of the exchange, which focus squarely on the question of the extent to which conceptual structures function in simple perception, are especially relevant. Barber (2008) is also important, since it takes up these same questions regarding conceptual structure in an explicitly Husserlian framework. Barber argues, rightly I think, that Husserl's phenomenology of perception enriches and expands the Sellarsian tradition McDowell is a part of.

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