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Deconstructing the Chinese Room

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The "Chinese Room" controversy between Searle (1990) and Churchland and Churchland (1990) over whether computers can think is subjected to Derridean "deconstruction." There is a hidden complicity underlying the debate which upholds traditional subject/object metaphysics, while deferring to future empirical science an account of the problematic semantic relation between brain syntax and the perceptible world. I show that an empirical solution along the lines hoped for is not scientifically conceivable at present. An alternative account is explored, based on the productivity of neural nets, in which the semantic relation is found to be dynamical – a spontaneous, stochastic, self-organizing process.

A major focus of the controversy over whether computers are capable of human understanding has been a *gedanken* experiment utilizing a "Chinese Room" devised by the Berkeley philosopher, John Searle. Searle's article was first published in 1980, together with twenty-seven peer commentaries, in *The Behavioral and Brain Sciences*, and a lively discussion has continued in the literature over the last decade (Fisher, 1988; Jacquette, 1989; Newton, 1988; Seidel, 1989). The controversy has recently culminated in a debate published in the popular magazine *Scientific American* between Searle (1990) and the San Diego neurophilosophers, Paul and Patricia Churchland (1990). That inconclusive debate will be "deconstructed" here.

"Deconstruction" is a controversial and irreverent technique in philosophy and literary criticism that has sprung forth notably in the *oeuvre* of the contemporary French philosopher, Jacques Derrida (1967/1974, 1967/1978, 1972/1982), although its roots lie in Heidegger's (1953/1959, 1927/1982) critique of the metaphysical tradition, which he traces to the time of the Socratic philosophers in ancient Greece.[1] The historical form this metaphysical tradition

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[1]For other discussions of deconstructionism in psychology, see Kurtzman (1987) and Sampson (1983).

takes – the *Gestell*, in Heidegger's lexicon – is currently technological (Heidegger, 1962/1977); in our own epoch technology, notably computer technology, expresses the *Gestell*. We are so thoroughly immersed in this metaphysical tradition with its various dualities (such as subject/object, origin/end, sensible/intelligible and presence/absence) that the very language used in deconstruction cannot get free from it. (Thus Heidegger literally crosses out certain metaphysical words which he cannot avoid using, e.g., ~~Being~~, and when Derrida is forced to use metaphysical words, he does so "under erasure" [*sous rature*].) Since metaphysics with its various dualities is the very sea in which our thought swims, it cannot be defined at the outset of the present discussion but instead shall come into view as the deconstruction proceeds.

Texts show peculiar symptoms of the strain due to metaphysics, symptoms which deconstruction seeks out as incision points. Deconstruction scans the footnotes of the text, rhetorical flourishes, metaphors, format and such seemingly insignificant "marginalia," which are completely passed over in conventional readings (Derrida, 1972/1982). (For example, in his polemic with Searle, Derrida [1988] focuses on the copyright that Searle has placed on a prepublication manuscript, in order to deconstruct the metaphysical notion that texts have a true, authoritative, transmissible meaning.) The symptom that attracts the present deconstruction is the decade of unresolved controversy over the Chinese Room and its normalization *qua* controversy in a publication of texts that typically glorify technology and thus sustain the *Gestell*. The deconstructive eye has a watchful glint to it, suspecting some effaced metaphysical complicity to be found in the vicinity of the Chinese Room that keeps the commotion going.

Of course, psychologists might consider themselves spectators of this philosophical struggle and my deconstruction of it, but as we shall see, psychology is inevitably and crucially drawn in at the point that empirical issues with respect to perception bear on the discussion. So the behavioral, cognitive and brain sciences join artificial intelligence and philosophy in the crowded confines of the Chinese Room where Searle's drama takes place.

The Story of the Chinese Room

Searle (1990, p. 26) does not understand Chinese writing which to him "looks like so many meaningless squiggles." He supposes being put away inside a room that contains baskets full of Chinese symbols and an English rule book for matching Chinese symbols with other Chinese symbols. (The "deconstructive ear" hears the metaphysical duality in this unfolding story. . . . There is an *inside* the Chinese Room and an *outside* the Chinese Room that structures the story thoughout.) The rules identify the symbols entirely by their

shape; the symbols are individuated purely by their graphic pattern, rather than any meaning. Thus the symbols are purely "syntactic." The rules say such things as, "Take a squiggle-squiggle sign from the basket number one and put it next to a squoggle-squoggle sign from basket number two" (p. 26).

Outside the Chinese Room there are people who understand Chinese and who pass questions in Chinese script to Searle inside the room. Searle consults his rule book and constructs a Chinese answer which is of course completely meaningless to him. But the rule book has been constructed such that when an answer is passed outside the Chinese Room, the people who understand Chinese find Searle's answer plausible. Searle has passed the Turing Test, since his behavior is indistinguishable from a person who does understand Chinese.

Now Searle says triumphantly, my situation in the Chinese Room is just the situation of a computer. I am like a computer and the rule book is my program. Both I and a computer "merely" manipulate formal symbols [syntax] according to rules in the program" (p. 26, brackets added). "Like a computer, I manipulate symbols, but I attach no meaning to the symbols" (p. 26). Since Searle does not understand Chinese, then it cannot be said that a computer could understand Chinese, for symbol manipulation "is not by itself enough to guarantee cognition, perception, understanding, thinking and so forth" (p. 26).

What, then, is required for these cognitive capacities? There are specific causal powers of the brain that produce them, causal powers that computers do not have, Searle says. It is not that there is something funny going on in the pineal gland but that "brains," after all, "are specific biological organs, and their specific biochemical properties enable them to cause consciousness and other sorts of mental phenomena" (p. 29). So it is the neurochemistry that somehow can give meaning to the otherwise meaningless syntax, the neurochemistry that permits the semantic interpretation, a neurochemistry that computers do not have. This machine fact confines computers to blind syntactical manipulation in which understanding is not supported. Exit artificial intelligence from the discourse on understanding, according to Searle, since computers do not understand.

Why is Searle so sanguine about this mysterious causal power of human brains? (It sounds so Cartesian.) Obviously, if you do not have a brain, you cannot understand Chinese. Obviously brains have the right stuff, and some future machine that might duplicate the brain's causal powers, whatever they may be, *will* understand Chinese, *will* be able to semantically interpret meaningless syntax. But the computer is no better off than Searle in the Chinese Room when it comes to understanding Chinese. Note that Searle is not antimachine in principle; it is just that computers will not do.

Churchland and Churchland (1990) argue against Searle that syntax by

itself is constitutive of and sufficient for semantics; it is just that we do not know enough about how the brain actually works to see how syntax alone carries semantic distinctions. Once we know how the brain does it, we can make a machine do it. ". . . [I]f one can just set in motion an appropriately structured internal dance of syntactic elements, *appropriately connected to inputs and outputs*, it can produce the same cognitive states and achievements found in human beings" (p. 34, italics added). Note the handwaving over brain operations: when the brain is in some (to-be-later-specified) state, then its syntax is *de facto* semantic.

Although it is not apparent from the polemic going on, Searle and Churchland and Churchland are not that far apart. Searle waves his philosophical hands at brain chemistry whereas Churchland and Churchland, neurophilosophers, point to "appropriately connected" neural network configurations. The only difference is that Searle thinks meaning is somehow *added* to the syntax, whereas Churchland and Churchland think that syntax does not need supplementation but that a rich enough syntax will be seen to be sufficient. In brief, Churchland and Churchland completely assimilate semantics to syntax (cf. Pylyshyn [1984]) whereas Searle keeps them distinct relata, but all agree that the assimilation or relationship, however it turns out, depends on brain properties. This polemic over not so much after all gives one pause and makes one wonder about an effacement where the two sides tacitly uphold metaphysics in expressing the *Gestell*.

The Semantic Relation Between Syntax and World

It is imperative in deconstructing the Chinese Room to sustain clarity with respect to the relationships between syntax, semantics, and the perceptible world to which the syntax refers when semantically interpreted. It is the semantic capacity that connects syntax and world. "Syntax," "semantics" and "world" must be clarified for the Chinese Room discussion to be evaluated.

We have seen that the Chinese squiggles and squoggles are purely syntactic for Searle, who does not understand Chinese writing. Syntax is a meaningless pattern, just squiggly marks on slips of paper handed in and out of the Chinese Room, insofar as Searle is concerned. But since the brain plays so prominent a role in the debate, we should properly focus on *brain writing*, a syntax consisting of electrochemical patterns, of neural squiggles and squoggles, so to speak.

This shift of attention to brain writing has a decisive impact on the Chinese Room debate. For the marks to be *seen* by Searle (which after all is what launches his story), they must be encoded as brain syntax. The semantic relation between Chinese squiggle/squoggle and the world gives way to the semantic relation between Searle's neural squiggle/squoggle and the world.

So what is going on inside the Chinese Room is that Chinese writing is mapped into Searle's brain writing. More carefully put, the Chinese graphics are subjected to sensory processing, and the resulting "record" of sensory analysis (Marcel, 1983) is encoded in neural syntax. Outside Searle's brain is the everyday perceptible world, which for Searle looks like the inside of a Chinese Room.

Now brain writing of the sensory record is syntactic, purely meaningless neural squiggles and squoggles. How does Searle's neural syntax relate to a world that includes marks on paper that look like squiggles and squoggles to those of us who do not understand Chinese? Just *how* does the semantic relation bridge the ontological duality between meaningless formal-syntactic squiggle/squoggle and the meaningful world? The brain does it, the brain as "appropriately connected to inputs and outputs," Churchland and Churchland, and Searle too, would agree. So let us consider whether the properly connected "doubly-embedded" brain – the brain embedded in a behaving body in turn embedded in a world niche – can account for the semantic relation. This is where psychology enters the Chinese Room controversy.

The Brain Basis of Semantics According to Psychology

There are two main stories of the semantic relation given in psychology, but first let us consider two long repudiated stories. There is a classical view that a *copy* of the world is impressed on the brain at the sensory receptor-tranducers, and the perceptible world is somehow constructed from the copy. The ontological gap between syntax and world is bridged by a copy *cum* construction process. Gibson (1966) was able to rule out this classical story on purely psychological grounds: there is typically no constant world available in the input flux for copying. For example, walking around a rectangular table it looks rectangular the whole time, even though there is never a rectangular image impressed on the brain at the retina, only a changing flow of trapezoids.[2]

Another classical view, which goes back to Plato, has the world constructed not from literal copies, but from sensory scraps and/or from some initially homogenous but differentiable raw material (*hyle*). Plato's *Demiurge*, who shapes chaos into cosmos, is modeled on the potter molding the clay in accordance with his Idea of the pot (Bolter, 1984). (*Demiurgous* literally means "craftsman.") The world is not outside the brain but is somehow synthesized inside the brain, so the inside brain/outside world duality is reduced to a (seemingly more manageable) inside/inside problem (i.e., the relation of syntax inside the brain to the perceptible world synthesized inside the brain).

[2]Rorty's (1979) critique of the mind as a "mirror of nature" provides a number of philosophical arguments against this classical view.

The problem here, of course, is the ghost in the machine (Ryle, 1949) that does the synthesizing. Even if it is said that the record of sensory analysis provides instruction, the rules of synthesis, the synthetic process remains a complete mystery.[3]

Of course both of these repudiated classical views are horrific, since in them the world perceived is some kind of constructed world inside the brain. The "real world" is sadly unknowable, *noumenal*, for the perceptible world is entirely produced (from copies or scraps of amorphous material). In these classical theories we cannot even properly say that the world produced by the brain is a *model* of the world, since the world produced is the only world there is for each and every one of us. This "reduces" the inside/outside problem to an inside/inside problem, but at the price of each brain being a kind of monadological bubble of perception floating through a dark energy sea knowable only in its mathematical structure. (Cf. the mood of Heidegger's "clearing" [*Lichtung*] surrounded by dark "Earth.") Only a "sorcerer" could love such a grimly isolated human situation (Castaneda, 1973)! It is in fact these horrific classical views that the metaphysical tradition decries as "metaphysics," while continuing to feel pristine.

So much for repudiated accounts of the semantic relation. Of the two main contemporary views, Gibson's (1966, 1979) is by far the minor one. What has been called here the "semantic relation" is for Gibson accomplished by "information pickup." With respect to the example of walking around the rectangular-looking table, Gibson points out that even though there is a succession of trapezoids on the retina, there are *invariant* abstract relationships between the trapezoidal sides across that succession which specify rectangularity. To pick up this invariant abstract information available within the input flux is to perceive a table that continues to look rectangular.

The key problem with Gibson's story for present purposes (generally overlooked in the criticism of Gibson's extreme anti-cognitivism [Ullman, 1980]) is that *abstract information is purely syntactic.* Invariants are ab-stracted from – literally, lifted out of – the domain of the concrete world; there is nothing perceptible about them. So Gibson has no account of the inside syntax/outside world semantic relationship, since Gibsonian abstract information pickup is purely syntactic.

By far the mainstream solution to the semantic relationship between brain writing and world says that there is an abstract specification of some kind generated by the brain. These specifications are variously called "schemata" (Neisser, 1976), "perceptual hypotheses" (Marcel, 1983), "constructs" (Yates, 1985), and in the philosophical literature, *noemata* (Husserl, 1913/1960), "in-

[3]Note that it is not possible to analogize to worlds produced by computer graphics (Globus, 1987). The computed world leans on the semantic capabilities of the programmer which are left quite unaccounted for.

tentional content" (Searle, 1983), and "propositional attitudes" (Fodor, 1987). The "record" (Marcel, 1983) of sensory processing is matched against the perceptual hypotheses which may or may not be confirmed. That is, the perceptual hypotheses have conditions of satisfaction that the records of sensory analysis variously meet. Perception is thus hypothesis confirmation, fulfillment of schemata. "Perception is where cognition and reality meet," says Neisser (1976, p. 9).

But note carefully: *the brain's information as a result of the matching process is the extent to which its conditions have been satisfied.* All the brain has to work with are (1) the neural squiggles and squoggles that record the abstract result of its sensory processing, and (2) the status of its abstract conditions, satisfied or not. All of this is formal-syntactic and in no way explains the semantic relation between syntax and world.

This result is what Fodor (1980) calls "methodological solipsism." The idea is that we are windowless monads who cannot see outside but know only whether or not our hypotheses are confirmed, while isolated from whatever it is that confirms the hypotheses. A typical way of avoiding this conclusion is to assimilate perception to the broader category of cognition. The perceptible world can then be ignored while shifting focus to the act of recognition. But recognition is just hypothesis confirmation, and so the solipsism problem is never confronted.

So whatever the dispute between Searle and Churchland and Churchland, there is a complicity in solving the semantic issue – the relation between brain writing and perceptible world – by deferring to empirical science, to some future account of the brain "appropriately connected to inputs and outputs."[4] But when we carefully look at the double-embedded brain so connected up, no explanation for the semantic relation can be found. Or as we shall see, no explanation can be found – without paying the price.

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[4]It should not be thought that the problem of the semantic relation is deferred to empirical science only by Searle and Churchland and Churchland. This deferral is a move widely adopted; the expectation that science will save metaphysics is typical of metaphysics. Natsoulas (1984, p. 244), for example, says that Gibson's abstract informational invariants which are picked up by the brain are "resonated to qualitatively" and this gives the stimulus information a "qualitative guise" so that "the perceiver becomes aware of external properties and events." But Natsoulas never explains how brain "resonance" relates information pickup qua abstract syntax to a perceptible world outside the brain, other than saying that "the environment would not look to the perceiver in any way unless there was produced in the visual system *a special process*" (Natsoulas, 1989, p. 49, italics added). This "special process" proceeds "at a particular level" (p. 49) of the visual system. But this "special process" occurring at a particular level of the visual system turns out to be brain resonance.

> The stream of visual perceptual experience (or awareness) of things is a temporally continuous brain process . . . that is a *special kind* of "resonating" to stimulus information, a kind that does not occur elsewhere in the visual system. (Natsoulas, 1989, p. 49, italics added)

continued next page

Churchland and Churchland's Connectionism

Now Churchland and Churchland try to evade Searle's conclusions by saying that Searle's argument applies only to computers, and not to the new connectionist engines. In the ten years intervening since Searle first introduced the Chinese Room there has been a great upsurge of work on richly interconnected neural networks. Churchland and Churchland think that replacing the symbol manipulation devices that Searle originally critiqued by connectionist machines holds great promise.

> When brains are said to be computers, it should not be implied that they are serial, digital computers, that they are programmed, that they exhibit the distinction between hardware and software or that they must be symbol manipulators or rule followers. Brains are computers in a radically different style. (Churchland and Churchland, 1990, p. 37)

Just how the brain manages meaning is "still unknown," "exactly" which "causal powers" are relevant remains to be determined (p. 37).

> To develop a theory of meaning more must be known about how neurons code and transform sensory signals, about the neural basis of memory, learning and emotion and about the interaction of these capacities and the motor system. (Churchland and Churchland, 1990, p. 37)

Churchland and Churchland's theory of meaning thus depends on future empirical findings with respect to brain syntax, as we have seen. They are hopeful that parallel processing neural nets will do the trick. But then they play right into Searle's hands by conceiving of parallel networks as performing computations.

A parallel network with its connection weights properly adjusted "computes almost any function – that is, any vector-to-vector transformation – that one might desire" (p. 36). Again, the parallel network is

> . . . a device for computing a specific function. Exactly which function it computes is fixed by the global configuration of its synaptic weights. (Churchland and Churchland, 1990, p. 36)

Searle responds that if it is a computation that is going on, then this means that serial and parallel processing are both syntactic.

> The parallel, "brainlike" character of the processing, however, is irrelevant to the purely computational aspects of the process. Any function that can be computed on a parallel

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So the entire weight of the semantic relation is carried by the designation "special" applied to a particular level of the brain. What makes brain resonance at some level "special" such that the inside can get outside? It is left to future empirical science to explain this core problem of the metaphysical tradition.

> machine can also be computed on a serial machine. . . . You can't get semantically loaded thought contents from formal computations [syntax] alone, whether they are done in serial or parallel. (Searle, 1990, p. 28, brackets added)

So Churchland and Churchland's appeal to neural nets with properly connected input/output functions remains problematic. The nets are computing, and no matter how much is learned about the workings of the computation, connectionist syntax is still inside the brain and needs somehow to reach the outside world.

Deconstructively attuned for evidences of metaphysics, our attention is caught by Churchland and Churchland's insistence that neural nets *compute* input-output functions. One problem with connectionism as computational is that because of the rich interconnectivity of the nodes that comprise neural nets, the network's operation is *holistic*. There is widespread fanning in on and fanning out from each node so that local events open quickly to the whole. This is fundamentally different from the serial rearranging of strings of localized exact atomic symbols in a logical transformational analysis. Just because it is possible to *simulate* (at least approximately) holistic nets on symbolic computational devices – and note that this is most slowly and cumbersomely accomplished – the successful simulation does not necessarily mean that what the neural nets are actually doing is computing. Perhaps computation is just an obsession of the *Gestell*, the current expression of the Greek *logos*, our "postmodern" state of paralogy (Lyotard, 1984).

Furthermore, we must keep in mind Chomsky's (1980) sharp distinction between "competence" and "performance." With respect to language, linguistic competence is given by the grammatical principles that generate the corpus of whatever might be legally said, whereas performance has to do with what is actually said, the creative use of human language freely undertaken by individual speakers. Chomsky's theory of language is explicitly restricted to competence.

> The study of grammar raises problems that we have some hope of solving; the creative use of language is a mystery that eludes our intellectual grasp. (Chomsky, 1980, p. 222)

Similarly for all human acts, our competence is given by abstract computational rules, whereas the individual human act freely undertaken is something else again. For example, a bicycle rider's competence is given by the rule "wind along a series of curves, the curvature of which is inversely proportional to the square of the velocity," but no bicycle rider riding along actually follows such a rule, nor was the rider ever even taught such a rule (Dreyfus, 1979, p. 190). Just because Churchland and Churchland's neural net transforms an input vector to an output vector does not necessitate that a computation

is being performed. The *logos* gives competence, not performance, which is "a mystery that eludes our intellectual grasp."

So neural nets are too holistic to be performing formal-syntactic computation, although their competence is computationally describable. What might neural nets be doing, then, if not computing? Let us try out a deconstructed version of Churchland and Churchland's gambit, and look to neural nets for an account of the semantic relation.

The Productivity of Neural Nets

What neural nets do is spontaneously find certain states in their state space (Hopfield and Tank, 1986). (Give the activation level of each node in the net a dimension in an N-dimensional state space and particular network states can be represented as a point is state space. The space covers all possible network states.) States that the networks tend to move away from are called "repellers" and states toward which the networks "settle" or "relax" are "attractors." This spontaneous process is stochastic; attractors are associated with a certain probability that the net will settle there, when the initial state is in their general region of state space, but the settling process is unpredictable (hence "playful").

It is of fundamental importance that this spontaneous stochastic movement toward attractor points in state space is *not rule governed.* Connectionist machine operations do not follow rules (even though the machine's competence can be so described). There is no program that determines which state the net will likely settle into. Instead the net spontaneously *self-organizes* toward attractor states.

What characterizes states that are attractors? We must see first that the self-organizing process operates under multiple constraints. Of crucial importance, there are weights on the excitatory and inhibitory connections between nodes, and these weights constrain the self-organizing process. Presumably some connection weights are fixed, given by the genes; some weights are modifiable through learning; and yet other weights are "tunable" moment to moment (Globus, 1989a). The record of sensory analysis as input to the network puts an activation pattern on it which acts as an external constraint. The self-organizing process finds a good enough consensus across the various constraints; this process optimizes self-consistency. *Attractors are thus states of the network that optimize multiple constraint satisfaction.*

So what neural nets do is spontaneously find states of relative harmony between conflicting constraints in an unpredictably self-organizing fashion. Their competence is computationally describable but their performance is holistic and not rule-governed. If neural nets are not performing computations, then this may open a solution for the problematic semantic relation between syntax and world which has preoccupied the present deconstruction.

From Beings to "Being"

The incisive question to ask here, I think – the question that leads us away from metaphysics but at a terrible price – is: *What is it to be the doubly-embedded connectionist brain settled into a particular state?* Or put less statically, since the input flux flowingly changes and there is also flowing change of the network tuning: What is it to *be* the doubly-embedded brain unpredictably self-organizing along its flowing path through its state space? The focus here is not on what functions the brain computes – its competence – but on *being* the doubly-embedded brain in its self-organizing flowing performance. The question thus leads from the metaphysical preoccupation with objective entities (*Seienden*) to Being (*Sein*), to lived existence (*Dasein*) which has been "forgotten" in the objective focus.[5] And the right answer to the issue of "being the brain" is, I think: to *be* the doubly-embedded brain is to find oneself thrown into a world (Globus, 1989b). The perceptible world where we always already find ourselves – our world thrownness – *is* the flowing settling state of the self-organizing brain.

The relationship between the record of sensory analysis and perceptual hypothesis is unproblematic here: both are constraints on a self-organizing process. This process does not confirm a hypothesis by recording a match but instead finds harmony. The inside/inside problem (to which the outside/inside problem has been reduced) is thus resolved by self-consistent settlement.

So syntax is a constraint – whether sensory syntax encoded by records of sensory analysis that impose an activation pattern which constrains the network or cognitive syntax encoded by the network attunement. Syntax as constraint is very different from the computational model in which syntax is an arbitrary meaningless presence (squiggle-squoggle) that requires semantic interpretation to come to full meaningful presence. *The semantic relation is in effect dynamical*: a spontaneous, stochastic, self-organizing process under syntactical constraint, a process in which the meaningful perceptible world – better, our world thrownness – *is* the flowing dynamical state of the network that settles out.

An important implication of this model is that the flowing existence just described is at a deeper level broken into "intervals." Suppose we begin with the net at rest. Input disturbs it and there is a brief interval before a stable attractor is found. Then input changes and there is another variable interval before settlement. However, the displacement is considerably dampened by the net typically being already attuned for what is not yet present. (As we

[5]This question is not Heidegger's, who did not consider the brain important to his philosophy, although the question might be "retrieved" (Globus, 1988) from his "ontological difference" between Being and beings (Heidegger, 1927/1982).

walk toward the front of the building, we are always already attuned for it to have a back.) When we are startled by the unexpected (the building front turns out to be a movie prop without a back), a confused moment is stretched while the unanticipated world is settling out; there is a noticeable blank moment in the flow of awareness. World thrownness – the present world that we encounter – is thus the result of a segmented process. (Cf. the "interval" (*espacement*) of Derrida's [1972/1982] *différence*.)

The semantic relation is thus explained by taking neural net *performance* (not competence) to be non-computational. The "world" is "inside" (as in the repudiated classical views), settling out of an unpredictable self-organizing process constrained by the records of sensory analysis and by the attunement due to cognitive tuning of connection weights.

The price of this move is that the traditional fundamental distinction between the inside of the brain associated with subjectivity and immanence, and the outside objectified world, becomes a metaphysical illusion. Inside and outside are both derived, secondary, hoisted by a self-organizing process. We always already find ourselves in a world of our own doing, where "doing" is neither by a homunculus nor input instruction, but where "our own doing" is understood as a flowing self-organizing holistic settlement.

This process gives our world thrownness. (Heidegger [1957/1969] calls the process the *Ereignis*.) We do not make anything, but are made alongside (*bei*) the world of pragmata (*Zuhanden*). *Es gibt Sein. Es gibt Zeit* (Heidegger, 1962/1972, p. 16). "It gives Being, it gives time," where Dasein, "we," "stands in" time. To be the doubly-embedded brain in its ever-shifting state of settlement is to be *bei* the world of pragmata.

As much as our metaphysical entanglements force us to think of the world as "outside," deconstruction of the Chinese Room reminds us that outside/inside is a derived duality provided by a more primary dynamical process. If so, there can be no avoiding the anxiety of being separated windowless monads in an undisclosed surround, monads in each of which separate but coherent worlds light up in parallel, through self-organizing processes. To the extent that the constraints are comparable across monadic entities, the world settlement is comparable, which serves to mitigate somewhat our stark existential isolation.

Discussion

The Chinese Room controversy effaces a metaphysical complicity in which the semantic relation between syntax and world is to be accounted for by an empirical story of the brain appropriately connected to its surround. This is surely "neurophilosophical" (Churchland, 1986) in that the philosophical argument relies on science. We saw, however, that current theories in

psychology fail to account for the semantic relation. In the Gibsonian story (Gibson, 1979), the brain picks up abstract information about the world rather than the concrete perceptible world, such as Chinese marks on the page that look like squiggles and squoggles to many. In the mainstream story – Neisser (1976), Marcel (1983), and Yates (1985) are representative – there is a sensory syntax (the record of sensory analysis), a cognitive syntax (an abstract specification *qua* conditions of satisfaction), and the status of the various conditions of satisfaction (the match). Psychology is left "methodologically solipsistic" here (Fodor, 1980), without semantic relation to the world. So those engaged in the Chinese Room controversy can only hope for rescue by empirical science in some presently inconceivable way. This unhappy outcome motivates the present wrenching of the metaphysical viewpoint, the *Sprung* from computational beings to Being.

The metaphysical tradition always *objectifies*, as has been emphasized. The brain is a kind of machine – a wet one rather than one made of silicon. What it is to *be* the (doubly-embedded) brain machine is never questioned because of the objectification. This wrench was undertaken in the wake of deconstructing the Chinese Room. To be the doubly-embedded brain is to find oneself always already thrown in a world of *Zuhanden*. Conceiving of the brain as connectionistic: the flowing records of sensory analysis (activation patterns), and the intentional tuning of connection weights, all constrain a self-organizing process that settles into a state which is our world thrownness. In this model syntax, both sensory and cognitive, is a constraint; the semantic relation turns out surprisingly to be a dynamical self-organizing process; and the world with us *bei* it becomes a settlement.

This model thus leaves the human condition decidedly monadic (Globus, 1987) – and very odd in so far as everyday common sense and the metaphysical tradition is concerned. It is this outcome that metaphysics desperately wants to avoid, a symptom of which is the long undecidable commotion over the Chinese Room in which the problematic semantic relation between syntax and world is effaced. Our true situation, I suggest, is that each of us constitutes our own world bubble – which are coherent to the extent that constraints are shared. Our metaphysical entanglement with the world – the everyday one in which it seems that we might reach out and touch each other – ensnares us in delusion, *māyā*, as the transpersonal tradition has long taught. Each of us separately lights up our own *Lichtung* and clears a world in it.[6]

This outcome should be distinguished from idealism, which is also caught up in a kind of metaphysics. What is primary is not subject (as it is in idealism)

[6]This deconstructs the last bastion of metaphysics (which even Heidegger and Derrida retain), *viz.* the conviction that the perceptible world is external to us, as it seems both to everyday common sense and science.

or object (as in materialism) but a dynamical process (cf. Heidegger's *Ereignis* and Derrida's *différence* [Globus, 1990, in press]) in which subject/object and all the other metaphysical dualities are derived.

Since this illusion is unavoidable, we might just as well take it as it appears, or perhaps, "we are meant" to live in *māyā* anyway, so why fuss? In our more reflective moments, however, we can labor at deconstructing metaphysics for a time and in so doing transiently appreciate our astonishing monadic plight. Metaphorically speaking, we are each isolated in a species of "Chinese Room," illuminated and encapsulated, where world thrownness comes playfully to presence.

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