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Shifting Position?*

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“To urge or establish any particular philosophical doctrine” is not the primary purpose of Paul Churchland’s latest book, *The Engine of Reason, the Seat of the Soul* (ERSS, p. 19).¹ The book aims rather at making recent developments in connectionist neuroscience “available, in a lucid and pictorial fashion, to the general reading public”, and it begins “to explore the philosophical, social, and personal consequences they are likely to have for all of us” (p. xi). Yet the philosopher might wonder where Paul Churchland is standing presently with regard to a number of philosophical doctrines for which he has become famous. In particular, I shall raise the question of whether the results of connectionist neuroscience that Churchland describes so admirably do not refute three philosophical views which he cherished in the past: (1) the general network theory of language, according to which all knowledge is theoretical, (2) the thesis of the plasticity of perception, and (3) eliminative materialism. Let me first remind the reader very briefly of these doctrines and their logical interrelations.

I

Churchland’s early works—the papers published between 1970 and 1989 and his first book, *Scientific Realism and the Plasticity of Mind* (SRPM, 1979)—contain three kinds of ingredients that each have a very different epistemic status.² First, there is pure neuroscience, such as the conception of

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¹ Unless indicated otherwise, all references are to Paul M. Churchland, *The Engine of Reason, the Seat of the Soul. A Philosophical Journey into the Brain* (Cambridge, Massachusetts, and London, England: MIT Press, 1995).

² See for the papers 1981–1989: Paul M. Churchland, *The Neurocomputational Perspective: The Nature of Mind and the Structure of Science* (Cambridge, Massachusetts, and London, England: MIT Press, 1989). I shall refer to *Scientific Realism and the Plasticity of Mind* (Cambridge and New York: Cambridge University Press, 1979) as *SRPM*. Churchland’s early position is also presented in his *Matter and Consciousness. A Contemporary Introduction to the Philosophy of Mind* (Cambridge, Massachusetts, and London, England: MIT Press, 1984), to which I shall refer as *MC*.

state-space sandwiches as the mechanisms of sensorimotor coordination.³ These ingredients are part of the “natural science of epistemic engines” that Churchland advocated in the fifth chapter of SRPM, and the connectionist neuroscience described in ERSS is nothing but a later development belonging to this kind. At first sight, there is no good reason to think that neuroscience is more philosophically relevant than, say, the physics of interstellar dust, but, as we shall see, the next kind of ingredient was meant to provide such a reason.

For in the second place, Churchland likes to speculate about the consequences of a mature neuroscience for our common-sense conception of human beings. We characterise ourselves and our fellow humans as *persons* who have specific *desires*, *wishes*, and *aspirations*, who *think* or *believe* that so and so is the case, who *reason* and *argue*, who *feel* things and are in a determinate *mood*, and who *act* for specific *reasons* and out of *motives*. Let us call the conceptual framework that we use daily in describing and explaining the behaviour and mental life of human beings the P-framework, where ‘P’ stands for ‘person’. Notoriously, Churchland predicted that the P-framework will be eliminated by “completed neuroscience”, because he diagnosed it as a radically false theory. Assuming *à la* Quine that ontology is a function of theory, he claimed that “the familiar ontology of common-sense mental states will go the way of the Stoic pneumata, the alchemical essences, phlogiston, caloric, and the luminiferous aether”.⁴

This view, called eliminative materialism, presupposes the possibility and implies the necessity of an “enormous conceptual revolution”, for large parts of our present culture, such as literature, politics, economics, ethics, scientific discussion, law, and the humanities, cannot be expressed without the P-framework.⁵ Churchland advocated this revolution because, according to him, the most excellent theories are of the “Pythagorean type” exemplified by mathematical physics, whereas the P-framework cannot be of this type, for it contains the so-called propositional attitude concepts.⁶ Only by eliminating the P-framework and replacing it by a Pythagorean theory of the nervous system would we be able to formulate a unified scientific *Weltanschauung*. “Should we ever succeed in making the shift”, Churchland exclaimed in a romantic mood, “we shall be properly at home in our physical universe for the very first time”.⁷

³ Cf. “Some Reductive Strategies in Cognitive Neurobiology”, *Mind* XCV (1986), pp. 279–309.

⁴ SRPM, p. 114; cf. pp. 114–20; MC, pp. 43–49; and “Eliminative Materialism and the Propositional Attitudes”, *The Journal of Philosophy* LXXVIII (1981), pp. 67–90 (EMPA).

⁵ MC, p. 45.

⁶ SRPM, pp. 100–107, and EMPA.

⁷ SRPM, p. 35.

To many critics the conceptual revolution which Churchland propagandised was not only undesirable—it would eliminate humanity as we know it—but also inconceivable. Terms of the P-framework such as ‘pain’, or ‘believe that’ are not like ‘phlogiston’, ‘caloric’, or ‘aether’ but rather like ‘fire’ or ‘flower’ or ‘horse’. They do not refer to theoretical posits of science, but to phenomena which we are able to register without having any theoretical background. Surely fires, flowers, and horses were not eliminated in the course of scientific progress? In order to refute this objection, Churchland needed a third kind of ingredient in his early works: philosophical doctrines about language and perception. Eliminative materialism did not make sense without two philosophical speculations in the tradition of Sellars and Quine: the absolute network theory of language and the thesis of the plasticity of perception.

The network theory of language claims that each and every term of a language is a theoretical term. This means two things. First, all terms in a language allegedly function as theoretical terms function according to later Logical Positivism: their semantics is entirely determined by their place in a linguistic network or “theory” and not by links to perception. Second, the reference of each and every term is fixed by the theoretical network as well, because reference is a function of meaning. In other words, all terms of a language refer to what is “posited” by theory, and we might change what we posit by changing our theory. If this Quinean view is correct, eliminative materialism at least makes sense as a prediction of the fate of the P-framework. The future development of science would decide about the truth of the eliminativist prediction.

One might object at this point that if we stop using the words ‘pain’, ‘flower’ and ‘horse’, trying to talk physics the rest of our life, we shall still go on feeling pain and perceiving flowers and horses. Surely a change of theory will not transform the *phenomenal content* of perceptual and inner awareness, even though we may learn to describe *what* we perceive in different terms. For example, we might learn to describe the Sun as a hydrogen burning star, but this will not cause a change in the way in which the Sun appears visually to us. If we are asked to make a painting of what we actually see with our naked eyes when we look at the Sun at sunset, the painting will not be different in the case that we have studied astrophysics. But if the phenomenal content of perception does not change as a function of theoretical change, there seems to be no good reason why we should not go on using common-sense descriptions of what we perceive. Accordingly, Churchland’s network theory of language did not suffice to secure the possibility of the drastic conceptual revolution that he advocated. He needed a second speculation, the doctrine of the plasticity of perception.

Churchland claimed in chapter 2 of SRPM that “perception consists in the conceptual exploitation of the natural information contained in our sensations

or sensory states”.⁸ This means that, supposing that we are in a specific sensory state, *what* we perceive is a function of the theoretical network which we use to “exploit” the information contained in this state. Because Churchland assumed that a sensory state “contains natural information” about all its causal antecedents, learning the physics of these antecedents might enable us to “perceive the world directly in terms of modern physical theory”.⁹ What he must have meant by this is that by looking at the Sun at sunset, for example, we might actually perceive the proton-proton chain reactions in the Sun. For the prediction of a radical conceptual revolution does not make sense unless even the *phenomenal content* of perception changes as a function of a change in the theories we accept.

The network theory of language and the doctrine of the plasticity of perception do not have the epistemic status of credible scientific hypotheses. Indeed, they are utterly implausible from an empirical point of view. How would we ever be able to learn a language if accepting a linguistic network or “theory” is a precondition for perceiving anything? Rather, these theories are philosophical speculations in which Churchland drew the ultimate consequences of Quine’s philosophy. Like Quine, Churchland is a naturalist, holding that philosophical epistemology “should be conducted along the lines of any other natural science”.¹⁰ But the naturalist ideology masks the fact that he argued for his theories of language and perception on the basis of *a priori* considerations and of assumptions belonging to traditional armchair epistemology.

In his argument for the network theory of language, for instance, Churchland implicitly assumed the representational theory of perception, according to which perceiving a white object consists in, among other things, having a *sensation* of white that is *caused* by physical antecedents.¹¹ He then raised the question of what entity the term ‘white’ refers to: to our private sensation or to its physical causes. He argued that the first alternative is untenable and concluded that terms for perceptual qualities such as ‘white’ are used to refer to the physical causes of sensations. According to the representational theory, we are not *perceptually conscious* of these causes. It followed that even terms for perceptual qualities refer to theoretical posits, so that they must function as any other theoretical term. Paradoxically, Churchland rejected the representational theory of perception later on, thereby destroying the assumptions that supported the network theory of language.

⁸ SRPM, p. 7. Cf. pp. 15, 24–25, 39–40, §13 and §16.

⁹ SRPM, p. 15.

¹⁰ SRPM, p. 124.

¹¹ SRPM, §2. See for an extensive analysis of this argument and of Churchland’s early philosophy: Herman Philipse, “The Absolute Network Theory of Language and Traditional Epistemology”, *Inquiry* 33 (1990), 127–78.

II.

The ingredients of Churchland's early philosophy are logically related to each other in interesting ways. For instance, the prediction of eliminative materialism does not make sense without the network theory of language and the doctrine of the plasticity of perception, which imply that all terms are theoretical. The network theory of language, on the other hand, cannot be formulated without propositional attitude terms that belong to the P-framework. But eliminative materialism demands the elimination of the P-framework, because the latter is considered as a false theory. It follows that if eliminative materialism is true, the network theory of language must be false. And if the network theory is false, eliminative materialism is nonsensical. In short, eliminative materialism, if true, is nonsensical. Therefore, eliminative materialism is either false or nonsensical.

Furthermore, according to the neuroscientific view on language which Churchland sketched in chapter 5 of SRPM, "language appears as a peripheral phenomenon idiosyncratic to a single species of epistemic engine". For that reason, the natural science of epistemic engines should not assume that the "basic parameters of rational intellectual activity" are comprehensible in terms of propositional attitudes and "sentential kinematics".¹² But this scientific view of the role of language contradicts the network theory and the doctrine of the plasticity of perception, according to which language has a fundamental role in cognition.¹³ In other words, the neuroscience in SRPM contradicts the philosophical doctrines of that book, which had the very function of making neuroscience philosophically relevant.

In *The Engine of Reason, the Seat of the Soul*, the neuroscience occupies the front stage. As I said, it is not the primary purpose of the new book "to urge or establish any particular philosophical doctrine". Yet, in view of the contradictions exposed above, we may expect that the shift of emphasis towards neuroscience implies also a shift in philosophical position, a shift away from eliminative materialism, from the network theory of language, and away from the doctrine of the plasticity of perception. My main question to Churchland is whether he is prepared to swear off these three philosophical speculations entirely and absolutely, among other reasons because they fly in the face of empirical evidence.

III.

Let me now make this question more specific by arguing on what grounds the early speculations have to be relinquished.

¹² SRPM, §§18–19.

¹³ Churchland noted the contradiction on p. 137 of SRPM and tried to resolve it without success.

(1) The network theory of language and the doctrine of the plasticity of perception imply that linguistic networks or theories are *constitutive* of our “phenomenal world”. This neo-Kantian thesis is contradicted both by a great number of empirical results and by connectionist hypotheses. In the second chapter of ERSS Churchland argues, for instance, that “our capacity of verbal description comes nowhere near our capacity for sensory discrimination”. This disparity supposedly arises “from a fundamental difference between the coding strategy employed in language and the coding strategy employed in the nervous system” (p. 22). Colours are coded by the nervous system, he says, in a “colour space” of three dimensions, one for each of the three types of photo-sensitive cones in the retina. If the brain uses about 20 different positions along each of the axes, we will be able to discriminate among roughly 8000 distinct colours and shades. Our capacity for verbal description falls drastically short of our capacity of colour discrimination, and the same holds for smells and the perception of faces. Churchland explains this fact by saying that perceptual mechanisms use vector coding along real number continua, whereas language has to employ a relatively small set of discrete names. We must conclude, with Churchland, that there is a priority of the preverbal over the verbal in almost all domains of cognitive capacity (p. 144), and this conclusion is corroborated by the study of brain lesions (p. 159). If so, how could the network theory of language and the plasticity thesis concerning perception be correct? Churchland’s analysis of perception in ERSS substantiates traditional empiricism rather than the speculative doctrines of SRPM. For in the course of the perceptual training of a neural network, partitions across the higher-level activation spaces of cells slowly emerge and are stabilised. Churchland identifies these partitions, somewhat rashly, with concepts or categories (pp. 50, 83, 88–91, 145). My first specific question is whether Churchland now rejects the network theory of language and endorses the traditional empiricist thesis that many observational concepts emerge from perception.

(2) This shift of position would imply that not all terms of a language are “theoretical” in the sense of the network theory of language. In particular, the semantics of terms such as ‘pain’ or ‘red’ will be dependent on empirical facts, such as the fact that people feel pain and exhibit pain-behaviour or the fact that humans are able to perceive red, so that the network theory is refuted. Because the speculation of eliminative materialism does not make sense unless all terms are “theoretical”, it has to be abandoned as well. In ERSS, Churchland seems to shift his position in the philosophy of psychology towards the type-identity theory. Talking about the vector coding of tastes, he says that “the subjective taste just is the activation pattern across the four types of tongue receptors” (p. 23). Although he admits that cognitive neuroscience still has to discover systematic neural analogues for all of the intrinsic and causal properties of mental states (pp. 203–8), he argues that it

is well on its way to doing so and that the prospects for the identity theory are promising (pp. 221–26).¹⁴

But did Churchland really give up the idea that all knowledge is theoretical, as he should have done? And did he really abandon the speculation of eliminative materialism? There are reasons for doubt here. In the volume *The Churchlands and Their Critics*, edited by Robert McCauley, Churchland reaffirms that “human and animal understanding is theoretical in nature from its earliest stages and in even its simplest incarnations”.¹⁵ It seems that Churchland faces a dilemma regarding the precise meaning of the word ‘theoretical’ in this quote. ‘Theory’ cannot mean here what it meant in SRPM: a linguistic structure. This is ruled out by Churchland’s view that the basic units of cognition are not linguistic. And if it means something else, for instance a “configuration of connection weights that partition the system’s activation-vector space(s) into useful divisions”, the thesis that cognition is theoretical falls drastically short of proving the possibility of eliminative materialism. Churchland would have to show, in addition, that a configuration of connection weights in a perceptual sub-system might be transformed radically “from above” if the knowing subject adopts a new “theory” in the original sense of SRPM. But this hypothesis is highly implausible from the empirical point of view. My second question is, then, in which precise sense Churchland maintains that “all knowledge is theoretical”.

One cannot be sure whether Paul Churchland is willing to answer this crucial question, for in the McCauley volume the Churchlands declare that “the eliminativist does not need an explicitly discursive sense of ‘theory’”. They claim that the real issue is located elsewhere: “The bottom-line claim of the eliminative materialist is and always has been that *the content and the character of our social practices in the domain of mutual perception, explanation, anticipation, and behavioural interaction are going to change, and change substantially, with the drawing of a truly adequate neuropsychology*” (pp. 254–55, italics in the original). However, in this quotation the Churchlands retreat from a relatively clear position into the safety of intellectual fog. Surely the advance of science changes social practices of all kinds, but do the Churchlands still predict that the P-framework will be eliminated by advanced neuroscience? And if they stick to eliminative materialism, how do they argue for the conceptual possibility of this view, the arguments of SRPM having been refuted implicitly by ERSS?

(3) Surprisingly, the “philosophical journey into the brain” in ERSS seems to culminate in the anticipation of an eliminativist conceptual revolu-

¹⁴ Cf. also Paul M. Churchland, “The Rediscovery of Light”, *The Journal of Philosophy* XCIII (1996), pp. 211–28.

¹⁵ Robert N. McCauley, ed., *The Churchlands and Their Critics* (Cambridge, Massachusetts: Blackwell, 1996), p. 266.

tion of a kind that is ruled out by the connectionist results of the book (pp. 322–24). According to present folk psychology, Churchland says, the basic units of cognition are thoughts, beliefs, perceptions, and desires. But “these bedrock assumptions are probably mistaken”, and “our traditional language-centered conception of cognition is now confronted with a very different brain-centered conception”. He predicts that in the future this brain-centered conception “will contribute to, or even constitute, a new folk psychology”.

One will not succeed in getting this prediction sharply into focus. What, exactly, is “probably mistaken” according to Churchland? Perhaps he means the view of Fodor and others that all cognitive activities, even unconscious ones, have to be understood on the model of language. This is a speculative hypothesis in cognitive psychology which is not part of common sense. Alternatively, he may mean the P-framework in general, but as I argued, it is nonsensical to claim that this framework is “mistaken”. The ambiguous expression ‘folk-psychology’ is used by the Churchlands both as a label for specific psychological theories which are formulated in terms of the P-framework and as a name of the P-framework itself. This ambiguity enables them to suggest, misleadingly, that rejecting the former implies abandoning the latter.

There are at least two reasons why the P-framework with its propositional attitude expressions cannot be eliminated. First, phrases of the form ‘I am arguing that...’, ‘I promise that...’, ‘I want that...’, or ‘I am stating that’ are used *to do things with words*. Were we to stop using such phrases, our form of life would fall apart. In this sense, the P-framework is partly *constitutive* of what it is to be human. Second, as long as humans go on using language at all, it will be trivially true to describe what they are doing in terms of ‘she is stating that...’, ‘she asks whether...’, or ‘she believes that...’. The truth of such descriptions does not depend on the existence of theoretical posits. That humans use language is a plain empirical fact, which is intimately connected to human psychology. What is more, language use would simply not be intelligible unless utterances were taken to express beliefs, to manifest understanding, etcetera. I conclude that, if the elimination of the P-framework with its propositional attitude words is necessary in order to formulate a coherent scientific *Weltanschauung*, the prospects for this philosophical project are dim indeed.¹⁶

¹⁶ Quine, in *The Pursuit of Truth* (1990), §29, admits that propositional attitude discourse is both irreducible and indispensable. Yet he also wants to avoid weaving it into our scientific theory of the world: “without it science can enjoy the crystalline purity of *extensionality*”. His solution is “the linguistic dualism of anomalous monism”. But the price he has to pay for this solution is high: our “scientific theory of the world” will exclude vast provinces of useful and indispensable knowledge.

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