

Introspecting Brain

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Suggestions and arguments put forward by the philosophers Herbert Feigl, Paul Feyerabend, Richard Rorty, and Paul Churchland are critiqued as to the feasibility of a “direct,” quasi-perceptual apprehension of neural states through neuroscience-informed introspection. The conceptual origins of this presumptuous direct introspecting are shown to be derivative from a scientifically inadequate theory of philosophical realism. Direct perception and its integral realist theory, as well as an analogical equation of perception with introspection, are focused as to their inherent intelligibility and coherence with sensory psychology. Claims of nominal intertheoretic identities are reviewed as to possible mind–brain applications. A summary elucidation of the known nature of perception and its phenomenology reveals that though there may be an initial plausibility given to a projected direct introspection of brain from a supposed equally direct perception of stimuli, once the latter is definitively rejected from considerations of psychology, so its extrapolation to nominal brain introspection must be rejected.

“As he [the practical man] always carries his brain and nervous system about with him wherever he goes, he would naturally tend to ignore the part which it plays in perception; just as a person who always wears glasses forgets that he has them on and that he could not see properly without them It is . . . simply [a] waste of time to try to rehabilitate naïve realism; or to regard it as any serious objection to a theory of the external world and our perception of it that it is ‘shocking to common-sense’ We can only advise common-sense to follow the example of Judas Iscariot, and ‘go out and hang itself.’”

C.D. Broad, 1925
The Mind and Its Place in Nature

The psychoneural identity thesis is the leading research paradigm in extant neuroscience and its complementary reductionist philosophy of mind (Bickle, 2003; P.S. Churchland, 1986; Churchland and Churchland, 1997; Dennett, 1991; Kalat, 2002; Smythies, 1994). While presumably useful as a working

hypothesis in the domain of actual empirical investigation and its implicate theorization (but see Smythies, 2002a), a number of its outlying extensions in philosophy of mind appear curious, belabored, even farfetched in their further reaches of analogy (the preferred method of extrapolation in this milieu). Among the more inordinate claims is that mind will simply cease to exist as an independent ontological category once a consummate neuroscience is attained (eliminative materialism); that veridical phenomenology of waking exteroception is actually nonexistent (Dennett, 1991; but see Crooks, 2003); that no visual imagery actually appears in REM dream states (Malcolm, 1959); that non-veridical percepts as afterimages are not really manifest within the visual field during illusory perception (Armstrong, 1968; Smart, 1959, 1963, 2002). Or, for our present purpose, that with the conceptual categories afforded by a futuristic ideal neuroscience, we should be able to master and apply such constructs to our introspected mental contents and thereby attain to an “immediate” apprehension of neural states and processes said to be ontologically identical with those contents (Churchland, 1985, 1988; Feigl, 1958/1967; Feyerabend, 1963; Rorty, 1965).¹

Brain Gazing

Apparently the earliest premonition of such a possibility as neural introspection came from the psychoneural identity theorist Herbert Feigl, who speculated that such introspective terminology might itself be reducible to the sciences of the brain’s underlying neurochemistry and physics:²

Suppose further that we could teach children the vocabulary of the language of brain states If we took care that these expressions take the place of all introspective labels for mental states, the child would immediately learn to speak about his own mental states in the language of neurophysiology [H]aving acquired this vocabulary, the child, when growing up and becoming a scientist, would later have no trouble in making this terminology coherent with, and part of, the conceptual system of neurophysiology, and ultimately perhaps with that of theoretical physics. (Feigl, 1958/1967, p. 103)

Following upon Feigl’s suggestion, the “anarchist” philosopher of science Paul Feyerabend added behaviorism and “direct” brain introspection to the mix:

¹Perhaps the nadir of such utopian neuroscience speculation came from President Nixon’s personal physician, who anticipated that salutary day when mass neurological screening of adolescents might detect budding presidential assassins. The physician might profitably have calibrated such a screening device on his own charge’s brain, as the Mafia don of Chicago, Sam Giancana, implicated by a U.S. Congressional committee in the death of John Kennedy, told his brother that Nixon himself had been a participant in that conspiracy (Giancana and Giancana, 1992; cf. Haldeman, 1978).

²Churchland (1989, p. 55) misattributes Feigl’s (1958/1967) priority of speculation to Feyerabend (1963) and Rorty (1965).

It is quite entertaining to speculate about some results of an identification of what is observed by introspection with brain processes. Observation of microprocesses in the brain is a notoriously difficult affair. Only very rarely is it possible to investigate them in the living organism. Observation of dead tissue, on the other hand, is applied to a structure that may differ significantly from the living brain. To solve the problems arising from this apparent inaccessibility of processes in the living brain we need only realize that the living brain is *already connected with a most sensitive instrument* — the living human organism. Observation of the reactions of this organism, introspection included, may therefore be much more reliable sources of information concerning the living brain than any other “more direct” method. Using a suitable identification-hypothesis one might even be able to say that introspection leads to a *direct observation* [original emphasis] of an otherwise quite inaccessible and very complex process *in the brain*. (Feyerabend, 1963, p. 55)

Richard Rorty subsequently adopted this same thesis, combining Feigl’s initial speculation with Smart’s (1959) construction of psychoneural “contingent identity”:

The oddity of saying that when I think I am reporting on a stabbing pain I am actually reporting on a stimulation of my C-fibers is similar [I]magine a situation in which we can envisage ourselves *non-inferentially* [emphasis added: “directly”] reporting such stimulation (periscope hitched up to a microscope so as to give us a view of our trepanned skull, overlying fibers folded out of the way, stimulation evident by change in color, etc., etc.) Why, after all, should we think that brain-processes are *not* a fit subject-matter for non-inferential reports? And why should it not be the case that the circumstances in which we make non-inferential reports about brain-processes are just those circumstances in which we make non-inferential reports about those sensations? For this will in fact be the case if, when we were trained to say, e.g., “I’m in pain” we were in fact being trained to respond to the occurrence within ourselves of a stimulation of C-fibers. If this is the case, the situation will be perfectly parallel [analogous] to the case of demons and hallucinations. We will, indeed, have been making non-inferential reports about brain-processes all our lives [without having been any the wiser]. (Rorty, 1965, pp. 39–40)³

Paul Churchland added the following variant upon their theme, adducing projective illustrations of brain introspection in a paper whose very title cites this presumed “directness”:

Consider now the possibility of learning to describe, conceive, and introspectively apprehend the teeming intricacies of our inner lives within the conceptual framework of a matured neuroscience, a neuroscience that successfully reduces, either smoothly or roughly, our common sense folk psychology. Suppose we trained our native mechanisms to make a new and more detailed set of discriminations, a set that corresponded not to the primitive psychological taxonomy of ordinary language, but to some more penetrating taxonomy of states drawn from a completed neuroscience. And suppose we trained ourselves to respond to that reconfigured discriminative activity with judgments that were framed, as a matter of course, in the appropriate concepts from neuroscience. (Churchland, 1989, pp. 54–55)

Glucose consumption in the forebrain, dopamine levels in the thalamus, the coding vectors in specific neural pathways, resonances in the *n*th layer of the peristriatal cortex, and countless other neurophysiological and neurofunctional niceties could be

³See Addendum on such rhetorical equations of phenomenology with the supernatural.

moved into the objective focus of our introspective discrimination and conceptual recognition, just as [analogically] Gmin7 chords and A + 9 chords are moved into the objective focus of a trained musician's auditory discrimination and conceptual recognition. (Churchland, 1988, p. 180)

I shall argue below that there are too many imponderables involved in Churchland's casual projections to admit such introspective possibilities without empirical and logical demurrers, if we were to admit them at all.

Inferring Semantics

There are a number of possible meanings ascribable to this "directness" of perception, and by derivation to that hypothesized direct introspection. A primary signification has its provenance in the battle within early twentieth century philosophy of mind respecting the presumed "direct" objects of perception, whether sense data or physical objects (e.g., Broad, 1925; Firth, 1949, 1950; Joad, 1936; Lovejoy, 1929; Price, 1950; Sellars, 1963).

Much of this controversy devolved from Locke, Berkeley, and Hume as to mental contents' proper interpretation within the representative theory of perception. Certain interpretations held that these sensations were the immediate objects of perception, while material objects "behind" the sensations were "indirectly" inferred by means of those sense data (e.g., Locke, 1690/1959, pp. 185–186; but see Crooks, 2002b, pp. 252–254). The bent of most extant philosophy of mind, certainly including Churchland's, emphatically rejects representationalism and substitutes an implicit or explicit perceptual realism that in effect takes Berkeley's "immediate perception" of "sensible qualities" (colors, sounds, tastes — "qualia") and makes them discriminated by a "direct, non-inferential observation" of physical objects and their properties (e.g., Armstrong, 1968; Churchland, 1985; Kelley, 1986; Smart, 2002). The fact that these philosophers usually employ a realist account of perception makes it germane to summarily explicate their "direct" realism, as a means to showing its faulty analogy to a supposedly equally direct introspection of brain, an introspection passing through what Churchland calls "subjective qualia" (a pleonasm, as all qualia are inherently subjective).⁴

My reasoning is that Churchland illicitly extrapolates from a direct perception of material objects and their properties ("objective qualia": Churchland, 1985) to an equally direct introspection of brain (via its properties as subjective qualia), such that as direct perception is fictitious, so its analogous form

⁴Several of my previous papers have scrutinized Churchland's idiosyncratic contrast between so-called objective and subjective qualia. I have chosen to focus repeated attention upon this scientifically unsubstantiated construct not to flog a dead philosophic horse but instead because these "objective" qualia are a usefully modern, though confused, expression of the perennial philosophic issue of secondary qualities.

of introspection must be likewise. This refutation first requires determination of what exactly (or even loosely) is meant by “non-inferential.” Regarding Churchland’s account, there is no question (e.g., Churchland, 1979, p. 91) as to the genesis of his usage of this term and concept, namely, Wilfred Sellars (1963). Sellars himself situates the concept of directness (equated with *non-inferential*: 1963, pp. 61, 169) within constructs from phenomenalism or sense datum theorists (e.g., Price, 1950).⁵

As it appears there is within Churchland’s opus no systematic and continuous treatment of “non-inferential judgments” (Churchland, 1979, p. 116), we will have to settle for gauging his purport by a collation of his citations to this “directness.” There is “discrimination” by our “external senses” (1988, p. 29) of so-called objective qualia, e.g., a “prelinguistic representation of redness in her mechanisms for noninferential discrimination” (1988, p. 34). Learned constructs (even if only folk psychological: Churchland, 1979, 1985) inform such discriminating perception. These theory-laden perceptual judgments can be made faster and automatic (“direct”) through training and practice in applying such assimilated (e.g., neuroscience) constructs (1989, p. 55; cf. Kelley, 1986). The parallel to direct introspection from direct perception is plausible because they are primarily differentiated only by their “direction,” i.e., inward versus outward: “Self-perception consists in the disposition-governed occurrence of conceptual responses to one’s internal states, responses made within whatever matrix of self-understanding that one has [culturally] developed or acquired” (Churchland, 1979, p. 116).⁶

⁵Sellars cavils superficially with this concept of non-inferential perception, e.g., whether it consists of apprehending sensory particulars or inferring facts about those particulars (1963, p. 61). The attendant irony is that, as he indicates (e.g., p. 66), the terms directness and non-inferential come from sense data theory, which he seems hard put to distinguish from his own thesis, nominally antithetical direct realism. Cf. Sellars (p. 88) on his avoidance of the representative theory of perception, not adherence to science or scientific realism, as the ideological, programmatic rationale motivating his direct realism. Thus paradoxically he both embraces representationalism in partial, derivative form, viz. sense data theory, while nominally repudiating its general thesis as devolved from Descartes and Locke. And just as Sellars and Churchland incorporate the concept of “immediate” perception as devolved from “passé” sense data theorists into their philosophical lexicon, so the Churchlands retain logical empiricism in its construct of “intertheoretic identities” while inconsistently repudiating its general scheme (Crooks, 2007).

⁶Churchland (1979, p. 120) seems to follow Sellars (1963, p. 67) in ascribing this notion of non-inferential perception ultimately to inadequate folk psychology. But Wilkes (1991) and Haldane (1988) suggest that certain of Churchland’s folk sciences are dubious in origin or even nonexistent. To their list I would add “non-inferential,” which I consider an obscure philosophical distinction, not at all originated by “folk,” i.e., the philosophical vernacular. These fictitious folk sciences or principles appear as projections of reductionist or eliminativist dogmas upon universes of discourse unfamiliar with them, projections that then facilitate the posit of bogus “intertheoretic identities” or even “objective” qualia (Crooks, 2002a, 2002b, 2007). Such finagled folk sciences have materialized where no one realized they had existed before. My personal favorite is a confabulated, unintentional lampoon rather pompously entitled “folk thermodynamics” (Churchland, 1989, p. 116, following Hooker, 1981).

Churchland's extension of the concept of non-inferential perception (or introspection) is that as properly scientific models displace our folk sciences, our "non-inferential judgments" (Churchland, 1979, p. 116) of perceptual and introspective contents can be trained up once we assimilate the improved conceptual categories of those sciences (pp. 116–120). This constitutes theory-laden (conceptually permeated) perception or introspection that can be made of deeper penetration and understanding through scientific acculturation. Thus, for Churchland, "non-inferential" signifies entrained, reflexive perceptual/conceptual judgments operating without conscious direction or initiation. Such a doctrine seems derived not from folk psychology at all but rather from structuralism (see Hochberg, 1964). This nineteenth-century scientific psychology maintained (following Berkeley in particular, whom ironically Churchland [1988, p. 30] singles out for dismissal) that consolidation of sensorimotor judgments into associative memory occurs so completely ("second nature," versus "first nature" or innate reflexes) that thereafter we make perceptual judgments efficiently and effortlessly, not even realizing we are operating "from" memory, i.e., concepts devolved from maturation and experience.

Notwithstanding realists' and reductionists' trivial modifications of the sense datum theorists' conception of non-inferential "knowing," the key point is that Sellars, followed by Churchland, retains both the term and (undefined) fundamental concept of non-inferential or direct perception. *Both Sellars and Churchland situate this so-called direct perception in the context of a demonstrably naïve realistic paradigm of perception.* Thus Sellars (1963, pp. 140–149) takes as axiomatic the premises of philosophic color realism, including its dubious distinction between "real" and apparent colors as differentiated by standard illuminating conditions (cf. Armstrong, 1969; Byrne and Hilbert, 2003; Kelley, 1986). Churchland (1985) for his part makes this direct perception over into a perceptual discrimination of objective color qualia said to be identical with reflectance efficiencies of distal stimuli. Just as we directly perceive color qualia, themselves numerically identical with stimulus surfaces, so we can introspect subjective qualia as desires, thoughts, and emotions that *ex hypothesi* (Feyerabend's "suitable identification hypothesis") are identical with neural routines. Churchland thereby splices the naïve realism of Sellars with the identity thesis of Feigl, Smart, Armstrong, and others by way of his confabulated bifurcation of qualia into objective and subjective varieties.

Naïve Realism: Sellars

This notion of neuroscience theory-laden, non-inferential introspection is credited by Churchland to Feyerabend and Rorty, having "occurred in a theoretical environment prepared largely by Sellars [1963, Chap. 5]" (Churchland, 1989, p. 55). Again, the theoretical environment Sellars prepared includes naïve

or direct realism as this was taken over by Churchland in such constructs as objective qualia and folk sciences (Sellars's "manifest image": 1963, Chap. 1).⁷

The simplest form of phenomenalism would be that "naïve" realism which holds that while the verb "to see" has many uses . . . its primary use is one in which a person is said to see a physical object and to see that it is of a certain color, e.g. green, where this implies that the physical object in question exists and that it is in fact green. According to "naïve" realism, seeing that a leaf is green is a special case of knowing that a leaf is green. Indeed, it is a special case of direct, i.e. non-inferential, knowing. (Sellars, 1963, p. 61)

Sellars then immediately goes on to define "direct" realism as a minor variant of naïve realism, eschewing the title "naïve" to avoid "the paradox of calling anything as sophisticated as an ably defended philosophical position 'naïve.'" But such a verbal qualification pertains to the mere subjective agreeableness or disagreeableness of terminology, not substantive issues of interpretation. Sellars's construct of direct realism is in effect tantamount to traditional naïve realism, and Churchland incorporates this scheme into his analysis of direct perception and its extrapolation to direct introspection.

In my own usage, "naïve" realism does not mean the epithet "simple minded," contra Sellars or Smart (2002). *Naïve* means "innate" or "done without thought," which is precisely how mundane perceptual ordering generates a default "realist" framework in which our visual phenomenal field "out there" appears to us in its *given* simplicity. It appears with absolutely no hint in that experience itself of the underlying, staggeringly complex neural machinery (Smythies, 2002b) that generates from one specious present to the next our manifold phenomenology and its presentation to our waking consciousness as a Kantian "simple representation." The problematic character of naïve realism lies not in its inducing our adaptive belief in the (fictitious) percipience-independent reality of those phenomenal contents, but in the way philosophers as Sellars, Churchland, Armstrong (1961, 1969), and Smart (2002) rationalize such belief in the form of realist doctrines that sit poorly with science of perception. Thus, our default belief in sentient-independent phenomenology might better be termed *naïve realism proper*, contrasted with its philosophical rationalization as *intellectualized naïve realism*. I fault the latter, not at all the former that makes possible our efficient negotiation of the physical world.⁸ The ballyhooed sophistication of philosophical naïve realism is purely intellectual contrivance, whereas "naïve" is properly a non-pejorative referencing the non-intellectual nature of perception's orderings, by which means the neurophysiologically "in here" appears

⁷Churchland's preface to his 1979 text acknowledges the "enormously stimulating influence" of Sellars upon him during and after the time Churchland was his student at Pittsburgh.

⁸If phenomenal objects appeared in the brain where the proper psychoneural identity thesis says they *should* or must reside (see below), instead of *appearing* where their stimuli actually are, we would never have come into existence for lack of biological adaptation.

phenomenally “out there.” Further, intellectualized naïve realism is not merely the presumption that “things are everything they [perceptually] seem to be” (Sellars, 1963, p. 61; cf. *Oxford Companion to Philosophy*, 1995, p. 602). It presumes that phenomenology, requiring both (physiological) subject and physical object (energy) for its generation, is attributable solely to the object; or equivalently perceives “out there” are presumed statically existent independent of percipients’ presence. The proper question pertains to the ontological nature of perception’s appearances, not terminological preferences. Accordingly, such construal of “naïve” qua epithet by these philosophical realists and reductionists is a straw man fallacy.

[My] argument . . . can be more positively construed as a defense of direct [naïve] realism, and therefore of a position which is phenomenalist in that broad sense which amounts to the idea that things are, in standard circumstances, what they [perceptually] seem to be [p. 95] Direct Realism gives an excellent reconstruction of the ways in which physical things, perceivers, sense impressions, perceptions of physical objects, perceptions that they are thus and so . . . fit together to make one [naïve realistic] framework of entities and knowledge about these entities [p. 97] Standard circumstances [of perception] are, indeed, the circumstances in which things look as they are [in themselves, outside perception]. (Sellars, 1963, p. 147)

According to this naïve realism philosophy, “*standard circumstances*” of perception establish the determinate nature of things as they subsist *independent of perception* (?). The perceptual vernacular informed by those standardized circumstances is indeed naïve realistic through and through. This means that Sellars’s folk theory-laden direct realism must find in phenomenology a “confirmation” of the naïve realism that originally articulated the terms and concepts of folk perception; for example, that phenomenal (“real”) colors “out there” subsist in absence of our visual faculty. Such pseudo-confirmation simply retrieves and makes explicit the folk perception built into the naïve realistic observational language from the start (cf. Ryle, 1949).

“Things look as they are under standard circumstances” translates into “things that appear in perception are not ontologically different in absence of that perception.” Here reside logical and empirical howlers of superlative magnitude. Standard circumstances of perception (as standardized illumination), necessarily implicating a percipient’s presence, are made by Sellars necessary conditions for determination of the nature of an *object in itself*, i.e., out of relation to all objects and percipients. Why would standard illumination be required for determining the ontology of a thing existentially independent of its perception? Standardized conditions of perception determine sensory experience of the perceiver (e.g., the visual field: Smythies, 1996), not an oxymoronic object as “perceived-in-itself.”⁹ Again, to define the conditions of

⁹Cf. Armstrong, 1969, on “real” colors ostensibly existent independent of percipience, whose intrinsic hue independent of perception is ideally determined visually through a microscope expressly designed for the human eye (!).

“standard” perception evidently pertains to the physics (distal and proximal stimuli) and physiology of percipients’ interaction with those stimuli. A standardized (“sanitized”?) visual percept of percipients is then stated to constitute the “objective color” that supposedly exists independent of that perception. Thus parameters pertaining solely to stereotypical viewing circumstances of an observer are averred to demarcate the objective reality of objects independent of those viewing circumstances. But viewing conditions obviously pertain solely to, and necessarily implicate, percipients, not unobserved objects in themselves! This clearly makes no empirical or logical sense, and furnishes another illustration of professorial logicians (e.g., Armstrong, 1961, 1968, 1969) wedded to realism unwittingly making statements of empirical impossibilities in order to rationalize and justify naïve realism at any logical cost (cf. Crooks 2002a, 2002b; also Smythies, 1965, 1994).

The phenomenal world . . . of public physical objects, sounds, flashes, etc., exhibits a lawfulness which is formulable in phenomenal terms, i.e. in terms of the directly perceptible qualities and relations of these [physical] objects. (Sellars, 1963, pp. 89–90)

Then, Sellars equates “observable” with “phenomenal” objects (p. 90). In this direct realism, *phenomenal*, *physical*, and *observable* are made linguistically interchangeable. Note “phenomenal” signifies “as seen or appears in the senses or perception.” Again, such terminological and conceptual confounds are tantamount to the assertion that physical objects as they appear in “direct” perception exist independent of our perception, even unto the same “phenomenalistic” form in which we perceive them. This is unreconstructed naïve realism, which Sellars charitably denominates “direct” realism with only one proviso, viz. that physical objects be seen in the most “advantageous” lighting *for our viewing* (Sellars, 1963, p. 89). These visual appearances may then justifiably be construed as the ontology those physical objects possess (“exhibit”?) independently of our perception — whatever that might mean in the advantageous light of physics and neuroscience.¹⁰ Just as phenomenal properties are made constituents of physical objects by *recherche* phenomenologists, so Sellars, followed by Churchland (“objective qualia”), makes phenomenology constitutive of physical objects, showing that these phenomenalist and realist positions are fundamentally identical in terms of their interchangeable constructs.¹¹

¹⁰Cf. Armstrong (1969, p. 120) on “real colors,” whose opposite number Sellars (1963, p. 89) terms “wrong colors,” i.e., those disadvantageously perceived — apparently disadvantageous primarily for direct realist philosophy, certainly not for percipients or the objects themselves.

¹¹Sellars’s (1963) “directly perceptible qualities” appears to be the original of Churchland’s (1985) “objective phenomenal properties,” just as Churchland apparently took over and transmogrified “objective qualia” from Smart (1963, pp. 75, 149).

In short, "physical objects are not really colored" makes sense only as a clumsy expression of the idea that there are no such things as the colored physical objects of the common sense world . . . (Sellars, 1963, p. 173)

While that "clumsy" expression might be taken to express such a meaning by realist philosophers, Sellars seems not cognizant of its proper interpretation, viz. phenomenal color apparently "out there" is actually resident in the brain qua percepts, identical with neural tissue according to a strict interpretation of the mind-brain identity thesis (of neuroscience coupled with science of perception: e.g., Smythies, 1953, 1994). *Science*, least of all science of perception, would not say phenomenal coloration is inexistent; that is a dictum of scientism, of positivist philosophy (cf. Dennett, 1991). The psychoneural identity thesis would say phenomenal colors are existent qua brain states and processes, neither externalized to distal surfaces of objects nor nonexistent. That Sellars could not conceive such an alternative interpretation shows he must not have understood the scientific description of perception or even the identity thesis proper, but instead construed matters of phenomenology through the lens of naïve realism (as indeed he makes this preferential interpretation repeatedly known).

When talking about color vision, we do not generally talk of "colors," but rather of "hues." This is simply to avoid the difficulty that "colors" are apt to mean sensations [percepts] to which we can give a specific name, such as "red" or "blue." We thus speak technically of "spectral hues" rather than "spectral colors," but this is not always necessary . . . Strictly speaking, light itself is not colored: it gives rise to sensations of brightness and color, but only in conjunction with a suitable eye and nervous system. The technical [especially philosophical!] language is somewhat confused on this matter: we do speak sometimes of "colored light," such as "yellow light," but this is loose. It should be taken to mean: light which generally gives rise to a sensation, described by most people as "yellow." Without attempting to explain how physical intensities and wavelengths of radiation give rise to different sensations (and ultimately we do not know the answer) we should realize quite clearly that without life there would be no brightness and no color. Before life came all was silent though the mountains toppled. (Gregory, 1973, pp. 73–74)

This unpretentious, straightforwardly scientific account summarily debunks any and all philosophical speculations on color vision devised by Armstrong, Sellars, Churchland, Byrne, Hilbert, and other realists. This debunking would more specifically be inclusive of an "intertheoretic identification" of unperceived distal and proximal stimuli with "objective color qualia" and "light," respectively (Churchland, 1988, 1995). For what might "sentient-independent real colors" mean in such an elementary scientific analysis? It means the realist philosophers must be engaging in a fallacy of verbal equivocation upon "color," upon its meaning qua stimulus and qua phenomenal percept, thereby mistaking phenomenal color with the perceptually independent ("unseen") stimulus for phenomenal color. The only thing to add to Gregory's account is

to further reason that, just as phenomenal “color” requires eye and brain, so it must be localized in visual cortex, at least according to the strict identity thesis many of these realists claim to uphold (cf. Crooks, 2002b, p. 258; Smythies, 1953.)¹²

Sellars’s direct realistic presumption of “perceiving things as they are, independent of perception” makes little or no sense logically or empirically. Logically it is unintelligible because a relation of one term to another introduces just that, *relata*, which do not obtain when the terms are taken singly. Its empirical unintelligibility arises in that context because to attribute properties to a stimulus that obtain only when that stimulus has had light reflected from it to an eye that receives it, and a nervous system to transduce, encode, and ultimately represent it as a percept of the object, is incoherent with known perception and physiology.

Finally, we observe there is no logical connection between perceptual and epistemic or scientific realism, but Sellars and Churchland appear to have unwittingly run them together. The representative theory of perception posits an independently existent physical world that is the presumed material cause of our intermittent perception of it. Thus one can be an epistemic realist without believing we have direct perception of material objects, or that this fabled direct perception is the only form of sensory awareness enabling epistemic access to the world (cf. Smythies, 1965, 1994, 2002a). Indeed, as direct realism is impossible according to science of perception (see Smythies, 1954, on “sensory projection”) yet we obviously do have epistemic justification for our scientific knowledge of the empirical world, that discrepancy is itself evidence for making the proper conceptual divorcing of a legitimate epistemic realism from an erroneous direct or naïve realism incongruously saddling it.

Naïve Realism: Churchland

We might render a slightly tongue-in-cheek analysis as follows. Sellars (1963, p. 169) equates “direct” and “noninferential” perception; but additionally he equates (p. 61) direct and naïve realism. Transitively, then, *noninferential* and *naïve* may be equated. Hence Churchland’s prediction, under the inspiration of Sellars, concerning non-inferential access to brain states through neuroscientifically informed introspection, is derivative from naïve realism, *Q.E.D.* But obviously more is required to demonstrate Churchland’s

¹²By “colors,” Sellars (1963, pp. 140-149) must mean phenomenal coloration, because his context defines these with respect to their discrimination by the human eye under his standard and nonstandard conditions of illumination. Hence, as Churchland (1985) uncritically used such as source citation, “colors” qua his “objective phenomenal properties” must mean “looks of colors *out there*,” misidentified with stimuli. Such misidentification constitutes an intellectualization of naïve realism.

own expressions of naïve realism and forsooth they are not difficult to ferret out and expose.

The inherent subjectivity of phenomenal coloration “out there” (within visual space) has been properly acknowledged since antiquity so it is curious that Churchland (1985, 1988) should insist upon its ostensible objective essence, exteriorized to distal surfaces of objects and denominated by him “objective (color) qualia.” Insofar as there is any concession by him as to colors’ obvious dependence upon the varying perceptual conditions of an observer, these phenomenal effects (e.g., a singular surface appearing differently colored according to lighting conditions: Locke, 1690/1959, p. 176) are contrasted as “subjective” qualia. Churchland (1988, 1989, 1995; Churchland and Churchland, 1997) has illicitly substituted what is universally construed in psychophysics as veridical sensory phenomenology with what is known in psychology as sensory schema (Brain, 1950; Smythies, 1994; Vernon, 1962). By labeling brain-based schema vector computations as “phenomenology,” “sensation coordinates,” or even “qualia,” Churchland (1989) is able to give the appearance that he has justified the theoretical identification of phenomenal percepts with their neural substrates when all that has really occurred is the incorrect substitution of one name and concept for another via a fallacy of equivocation (Crooks, 2007).

Churchland’s (1985) reasoning is that his objective qualia, as sound, colors, and heat “out there” are discriminated by our sense modes and that these objective qualia have now been “identified” by progressive physics to be physical objects or energies.¹³ *Mutatis mutandis*, what we know today “from the inside,” through introspecting first person perspective, as the subjective qualia of tastes, thoughts, desires, and emotions will tomorrow have their ontological identities revealed as neural structures or functions by a futuristic completed neuroscience. It will be noticed that this analogical extrapolation rests upon the premised actuality of those objective qualia said to be symmetrical with their subjective variety. This question is amenable to definitive resolution by examination of elementary physics and physiology of perception, specifically addressed to the localization of phenomenal contents, i.e., of the supervening qualia of that perception.¹⁴ As phenomenal fields are in the brain

¹³On the soundness and actual purport of these supposed intertheoretic identifications, see Crooks (2002a, 2002b, 2007).

¹⁴Churchland (1988, pp. 30–31), following Feyerabend and Rorty, writes that it is essentially a matter of terminology whether introspecting brain contents makes sense, the terminology and idiom themselves being justified by theoretic advances in neuroscience. The dictate of extant science of perception respecting philosophical realism at bottom of their collective speculation appears to have been neglected by such reasoning; this is what is being addressed at present. That semantics follows science, which itself determines ontology, I do not question. I question only what science of perception says at present, not what a projective millenarian neuroscience might pronounce respecting philosophical realism and reductionism in some indefinite future.

if anywhere in the material universe (but see Smythies, 1994) and sensory receptors do not extend outside the CNS, we cannot “directly perceive” distal stimuli, though properly speaking we do “perceive” stimuli insofar as there is a causal chain linking those objects to our nervous systems, via proximal stimuli impinging (say) our cutaneous or retinal receptors. Above was mentioned the origins of a model of perception said to be “direct,” “immediate,” or “non-inferential,” these adjectives being of programmatic purport designed to eschew the representative theory’s scheme of perception that nominally posits an “indirect inference” from sense data to an independently existent material world “behind” those sensory phenomena (but see Crooks 2002b, pp. 252–254). The representative theory is not fundamentally a philosophical doctrine at all, neither is direct realism a legitimate competing thesis that one may choose or reject *ad libitum* according to doctrinal preference (contra Armstrong, 1961; Kelley, 1986; Smart, 2002). Representative theory is properly construed as scientific fact (Fiegl, 1958/1967; Smythies, 1994, 2002), or at least it may be said to fall straight out from science of perception while direct realism falls out onto its head.

The purpose for the division of stimulus and sensory fields of perception arises from the neurological datum that afferent projections terminate in sensory cortices and conversely do not extend outside the nervous system. The conventional and justifiable wisdom, meaning psychoneural identity thesis proper sans philosophical realism, is that where these neuronal projections end, there must be their content *qua* phenomenal re-presentations of material reality. This means further that topographic visual and somatic sensory fields “out there,” i.e., outside the somatosensory representation of our physical organism, called the body image, itself situated within that total sensory field *per se*, necessarily cannot be existentially one and the same with the physical world (Crooks, 2002a, pp. 195–197; 2002b, pp. 249–250; Smythies, 1953, 1954, 1956). The twain is spatiotemporally discontinuous, one inside the CNS and the other without. The paradox that the “out there” is really “in here” has been physiologically mandated for upwards of two centuries.¹⁵

¹⁵John Smythies (personal communication) has requested the following clarification of his position be inserted in this context: “Smythies (1996) has emphasized that it is essential to distinguish between the stimulus field and the visual field. The former contains physical objects that we do not experience. The latter contains our visual sensations (phenomenal objects) that we do experience. The former is the INPUT into the brain’s neurocomputational systems. The latter is the OUTPUT of these systems. It is an elementary error to suggest that the input to a computer could be identical to its output. This conclusion is upheld by the abundant experimental evidence that we perceive not what is actually ‘out there’ (as direct realists believe) but what the brain computes is most probably ‘out there’ (Smythies, 2002a; Smythies and Ramachandran, 1998). Obviously ‘X’ and ‘probably X’ cannot be identical.”

What is actually perceived [sensed] could be regarded only as the terminal effect of a more or less long and complex causal series of events happening at different places and times, only at the perceptually inaccessible other end of which series the *cognoscendum* [distal stimulus or physical object] was supposed to have — or rather, to have had — its being. (Lovejoy, 1929, p. 26)¹⁶

It is clear from Churchland's examples and descriptions of his objective qualia ("secondary qualities": Churchland, 1985) that he is referencing psychology's percepts, following Sellars in interpreting them as a kind of self-subsistent "material phenomenology" that inexplicably straddle the ontologically disparate statuses of objectivity and subjectivity. This notion is conceptually and empirically confused (Crooks, 2002a, 2002b, 2007). It was designed to facilitate an acceptance of reductionist agenda rather than objectively explicate the nature of perception. Combining inexistent objective qualia with the fictitious non-inferential route of perception, their complex used as basis for an analogical leap to introspection, necessarily entails a wildly improbable inductive argument.

Perception = Apperception

Consciousness is not known by introspection in a way analogous to the way objects in the world are known by perception The model of "specting intro," that is, the model of an inner inspection, requires a distinction between the act of inspecting and the object inspected, and we cannot make any such distinction for consciousness. (Searle, 1992, p. 105)

One's introspective consciousness of oneself appears very similar [analogically] to one's perceptual consciousness of the external world. The difference [disanalogy] is that, in the former case, whatever mechanisms of discrimination are at work are keyed to internal circumstances instead of to external ones It is evident that perception, whether inner or outer, is substantially a learned skill Self-consciousness, on this view, is just a species of perception: self-perception. It is . . . the perception of one's internal states with what we may call (largely in ignorance) one's faculty of introspection. Self-consciousness is thus no more (and no less) mysterious than perception generally. It is just directed internally rather than externally What perception requires is no more than that one's faculty of judgment be in systematic contact with the domain to be perceived, in such a way that we can learn to make, on a continuing basis, spontaneous, noninferred [emphasis added], but appropriate judgments about that domain (Churchland, 1988, p. 74)

Contrary to this passage in which introspection is described as quite lucid in its nature and penetrating in its powers, is the puzzling contrast given by Churchland immediately thereafter in that same text (pp. 76–79), in which claims of introspection's incorrigibility are rejected. Superficially it might be thought that

¹⁶Lovejoy's term "perceived" might be better rendered "sensed," according to Smythies's (e.g., 1994) terminological distinction — for certainly we do "perceive" stimuli, while attending to percepts per se is properly labeled "sensing" — in any case, a usage clearly coherent with Lovejoy's "epistemological dualism."

Churchland is allowing a degree of inner penetration though not infallibility to introspection, hence there is not inconsistency in his varied treatment. I suggest instead that Churchland has in the one context played up the powers of introspection so as to facilitate his equation of introspection and perception, thus better entertaining the plausibility of direct brain gazing; while in another context those same powers of introspection are played down because what they reveal, namely, mind stuff per folk psychology, is inimical to his more general reductionist or eliminativist programme. (See also his disarmingly brusque admission of his propensity to “deny and play down” any data contrary to his preferred hypothesis, in Churchland, 1989, p. 237). Accordingly there is one topic, namely introspective penetrative power, that is given two quite different interpretations, cheek by jowl, as to possible strengths of that apperception, depending on the needs of the argument at hand and irrespective of any “inner” consistency that might obtain between those distinct interpretations overall.¹⁷

Apropos this cavalier equation of internal and external penetrative powers, we wish to state a dissension or at least qualification as to any hypothetical interchangeability of perception and introspection. Are they differentiated merely by direction of attention (“inner” versus “outer”) but sharing the commonality of exhibiting learned skills and having an equivalent “non-inferential” nature?¹⁸ The physics of photic or mechanical radiant energies, with their physiological reception, transduction, and encoding in sight and audition, are well known in theory respecting their concretized interactions as investigated by psychophysics (e.g., stimulus thresholds of supervenient sensory phenomenology). Taxing Churchland’s analogy in kind between our inner and outer “perceiving” (fallacy of equivocation upon “perception”?), it may properly be asked what might then correspond, within introspection, to perception’s causal antecedents within the external world, its distal and proximal stimuli. It is not clear what answer might be given in order to flesh out his analogy because it appears incomprehensible what “stimuli” are involved in our apperception of memories, imagery, emotion, cognition and the like. Does the internal stimulus consist of spontaneous, endogenous, and clairvoy-

¹⁷After citing a number of psychophysical correspondences misinterpreted as “intertheoretic identities” (see Crooks, 2002a, 2002b), in the broader context of detailing the supposed inadequate resolution of our senses, Churchland (1988, p. 15) gives away the agenda behind contesting the presumed depth and accuracy of introspective access: “The argument from introspection is therefore entirely without force, unless we can somehow argue that the faculty of introspection is quite different from all other forms of observation.” Accordingly Churchland must argue that perception and introspection are on the same epistemic footing, so as to head off dualist claims of their contents’ ontological incompatibility.

¹⁸Churchland, following Sellars, leaves noninferred undefined, though perhaps variously illustrated. That imprecision makes this term of his analogical equation between perception and introspection inherently nebulous and consequently the equation is strained to that degree.

ant “neural flaring” in the absence of actual sensorial impingement (cf. Churchland, 1995, p. 101, on recurrent networks)? This conjecture leads to the following more convolute analysis.

The reason for the explanatory inadequacy, at least as an analogy from perception, of positing spontaneous neural firings as the sufficient “stimulus” for apperception, is that within psychology of perception there are objective, concrete physical and physiological parameters of explanation. Contrarily, with introspection, the “subject” of inner contents is no longer a material organism involved in transactions with the material world but presumably some form of homunculus “reading” the brain’s activities, instead of the brain’s reading patterns of afferent volleys from sensory receptors.

Ultimately, there is an ontological conundrum facing both intellectual scenarios of perception and apperception, but in reverse order. For science of perception begins with quantifiable physical and physiological variables and ends in a black box, i.e., afferent projections’ firings mediate between proximal stimuli and cortical termini, where one is then faced (if philosophically minded enough) with the question as to “who” is executing the “final” interpretation (cf. Dennett, 1991). Contrariwise with introspection, one “begins” with that homunculus black box while yet it is not clear that such an enquiry from that starting point even has a beginning — “where” does an analysis from that presumed inscrutable prime mover lead us?¹⁹ At least with perception the “subject’s” existence and role are clearly defined and intelligible within that psychological construct: the material percipient’s sense organs, and central and peripheral nervous systems constitute the locus of perspective relative to the external world. With apperception, the “subject” is an unknown quantity at every point of discussion and accordingly its conceptual fuzziness cannot be relinquished in principle.

Certainly “both” forms of “sensing” are implicate with the quandary as to this final common pathway that leads, at least in our habitual experience or folk psychological interpretation thereof, to the presumed purview of an all-surveying homunculus, whether it engage in exteroception or introspection. Yet note that obviously our analysis of their distinct starting points makes all the difference for this question, for there is indeed a flourishing psychology of perception while a science of apperception has yet to get off the ground (cf. Churchland, 1988, p. 87). This empirical fact alone, an existent empirical science or not, is itself proof that any such analogy that would straightforwardly equate perception and introspection must be inherently improbable. Perception

¹⁹Indeed, denial of an inner homunculus forms a bedrock assumption of modern realist and identity theories of mind from Ryle (1949) to at least Dennett (1991). Accordingly there appears not even a starting block for such a science of apperception, at least from reading these accounts.

is a black box only at its terminus of execution; apperception is one from start to finish.²⁰

We know much of exteroception; one has simply to peruse a textbook on sensory psychology to perceive this. We know absolutely nothing comparable regarding introspection, of its capacity to access our memories or emotions, how it ascertains relevance or otherwise, how by its concentrative focus we may consummate numinous insight where moments before only perplexity reigned. But if we should grant for the sake of argument that somehow they were convertible in kind, still we have demonstrated above that there is no "theory-laden direct perception" of physical objects. Accordingly there would not be, by proper analogy, any parallel direct introspection of brain states either.

An Impossible Analogy Made Easy

Mental states and properties, as revealed in introspection, appear radically different from any neurophysiological states and properties. How could they possibly be the very same things? The answer . . . is, "Easily." In discriminating red from blue [color percepts], sweet from sour [gustatory percepts], and hot from cold [thermal percepts], our external senses are actually discriminating between subtle differences in intricate electromagnetic, stereochemical, and micromechanical properties of physical objects. But our senses are not sufficiently penetrating to reveal on their own the detailed nature of those intricate properties. That requires theoretical research and experimental exploration with specially designed instruments. The same is presumably true [analogically] of our "inner" sense: introspection. It may discriminate efficiently between a great variety of neural states, without being able to reveal on its own the detailed nature of the states being discriminated . . . [And this is no more surprising than our inability to perceive the real nature of "visible" light, qua electromagnetic energies.] The argument from introspection, therefore, is quite without force. (Churchland, 1988, p. 29)²¹

Red and blue, sweet and sour, hot and cold are percepts, misidentified by Churchland (1985) as objective qualia. But there are no objective qualia *discriminated* by perception outside the physical body; such percepts are *generated* by neurocomputations, by means of reception, transduction, and encoding of proximal stimuli, and phenomenally appear outside the somatic body image (Köhler, 1929/1971; Smythies, 1954, 2002a). For example, an apple's redness appears visually "out there," beyond the boundaries of the body image's

²⁰Even if, as per Rorty, Feigl, Feyerabend, and Churchland above, future neuroscience with its implicate technology were able to outperform "mental talk," its very futurity bespeaks a plain recognition, on the part of these philosophers, of the past, present, and furthest foreseeable efficacy of introspective description, prediction, and extrapolation, contrasted with that merely heralded millenarian neuroscience-speak, and hence of the disanalogical epistemic statuses of perception and apperception.

²¹Churchland states here in effect that our seemingly incorrigible apprehension or identification of introspective phenomenology, via first person perspective, is definitively ("quite") nullified by an analogy, the weakest form of induction.

“touchable” contours. Just as Churchland cavalierly runs together perception and introspection, so he assimilates conception to perception: our senses are supposedly not discriminating enough, so theoretical constructs are needed and able to extend them, as though discriminating percepts were continuous with framing scientific concepts.²²

While our senses do indeed discriminate amongst “electromagnetic, stereochemical, and micromechanical properties of physical objects” it is not the case that our color, gustatory, and tactual percepts are numerically identical with those objective causes of their phenomenal appearances. Accordingly it is not possible that by a more acute perception of them, through a scientifically informed theory-laden perception or whatnot, we might be able to ascertain their “exteriorized” physical nature, as whether they have such is what is in question. The presumed physical nature of percepts is properly to be ascribed to localization within the brain, not to the stimulus field in which the material causes of percepts’ being are to be found. Thus while perceptual discrimination amongst physical energies impinging upon visual, tactual, and gustatory sensory receptors does in fact occur, yet as the phenomenal percepts generated by interacting stimuli and physiology are not ontologically identical with those energies, no “deeper” perceptual acuity (or introspective sensing, for that matter) would or could discern any such objective causation *per se* outside the CNS, as phenomenal fields and their constitutive percepts are wholly confined, *qua* representations, within the brain.²³

Depth of perceptual acuity is quite beside the point when it comes to our alleged capacity to “immediately” perceive, as no known kind of sense mode’s discrimination permits of such immediacy, let alone any degree thereof. Ironically, if Churchland is correct concerning the possibility of a heightened introspection’s ability to penetrate the contents of mind down to the level of its neural ground, then if, as percepts are properly localized in the brain, such “perception” of objective qualia, supposedly resident in the stimulus field — actually an introspection (“sensing”) of percepts numerically identical with brain states, according to proper identity theory — would result in percepts “out there” becoming transparent through to their neural essence, not in our

²²Oddly, Churchland recognizes and exposes this fallacy in another context several pages later (1988, p. 34) when adverting on the equivocation upon “knowing” in both perceptual and conceptual references; yet in a later work (1995, pp. 198–205) he commits the fallacy again when remonstrating with his philosophical loyal opposition over first person- versus third person-perspectives on phenomenal content. It appears he is discriminating when it comes to anti-reductionist fallacies but not similarly with pro-reductionist fallacies of the identical type.

²³I must immediately qualify this denial by recognition that discursive or hypothetical conceptuality, in the form of progressive physical science, can of course properly conceive of the composition of such a material nature in its independence from our perception — and this tenet would appear axiomatic in Sellars and Churchland’s “scientific realism.”

penetration of objective qualia down to their supposed inanimate physical basis outside our nervous systems.

Thus Churchland's conjecture of identity of such phenomenal contents qua material substances and properties would prove correct but in an inversion of the form in which he expresses such, via his implicit confounding of veridical perception of physical objects with an introspective sensing of phenomenal percepts. Alternatively, we see that by correct analogy from psychophysics, in which there is mere psychophysical correspondence (not even one-to-one at that) between our percepts and their material causes, there would in this latter hypothesis be only correlation between introspected contents and brain, not their identity.

As perception does not leave the nervous system to espy "objective phenomenal properties" resident upon distal surfaces, and indeed as such exteriorized phenomenal qualities do not exist except in academic philosophical realism, we conclude that it is equally impossible in principle that by analogy there might supervene, by means of neuroscientific knowledge or any other type of conceptual insight coupled with introspection, a direct apprehension of brain states through the "medium" of mental phenomena per se. As phenomenally exterior percepts (so-called objective qualia) are only psychophysically correspondent with their material causation, this does not permit of analogical extrapolation to that projective neural introspection, as Churchland's argument requires a posit of their numerical identity to obtain his analogy, nominally from the physical sciences, to mind and brain.

Whatever degree of intelligibility might be ascribed to that realist construct of "perception," having little semblance to the accepted psychological account, there is no way that even the most modern and corrected scientific model of (say) color percepts' objective cause(s) could possibly afford us any "direct" perception of surface efficiencies if only our visual discriminations were more acute. The concept of effluxes devolved from Plato and the Stoics might work just as well or poorly in such futile endeavors by theory-laden perception, because as perceptual discrimination at its limits of function (terminal bulbs of afferent receptors) barely attains to (literally) "direct" contact with proximal stimuli at the outermost boundaries of our somatic nervous systems, the question is moot as to whether any scientific conceptual refinement might be of more avail in any fictitious "direct" perception of physical (distal) objects themselves. As such "sensory projection" or "immediate perception" (or however it is termed and conceived: Smythies, 1954, 1965) never has and never will occur, any amount of conceptual overlay might be larded upon those sensory discriminations and yet we would get not one perceptual mite closer to those stimuli per se (rather than to their neurally encoded or phenomenal representations) than with a transient, bald, and viciously ignorant glimpsing of them.

Besides, Churchland himself admits (e.g., 1988, p. 29) that our perceptual faculties are too feeble to get beyond his objective qualia to their nominal

material natures, as with “light” qua photic energy. Thus using his preferred method of argument, analogy, we should then properly conclude that we could not get beyond subjective qualia to their presumed real identity qua brain states by any means as a theory-laden introspection. Though there have been devised instrumental means of extending our exteroception, e.g., optical microscopy, to what “inner eye” of what homunculus might we possibly couple any neurotechnology so as to analogically parallel those devices used in standard, physical science applications?²⁴

In the following excerpt, Churchland rewrites scientific history to include his objective qualia as the ostensible properties reduced to material identities. Then, he presupposes the truth of these fictitious reductions and extrapolates to introspection from a model of perception based upon scientifically exploded naïve realism.

If mental states are identical with brain states, then they must have the very same spatial location. But [the philosophical competition claims] it is literally meaningless . . . to say that my feeling-of-pain is located in my ventral thalamus, or that my belief-that-the-sun-is-a-star is located in the temporal lobe of my left cerebral hemisphere . . . But it is senseless, runs the argument, to say that some resonance in my association cortex is true, or logically entails some other resonance close by, or has the meaning that *P*. But even if they struck all of us as semantically confused, this would carry little weight. The claim that sound has a wavelength, or that light has a frequency, must have seemed equally unintelligible in advance of the conviction that both sound and light are wave phenomena. (See . . . Bishop Berkeley's eighteenth-century dismissal of the idea that sound is a vibration motion of the air . . .) The claim that warmth is measured in kilogram · meters²/seconds² would have seemed semantically perverse before we understood that temperature is mean molecular kinetic energy. (Churchland, 1988, p. 30)²⁵

²⁴All this is of course to charitably presume there is any meaning in that dialectical contrast of objective versus subjective qualia; a complementation that is, incidentally, a clandestine reintroduction of mind–brain dualism — dualistic kinds of qualia — into an ostensibly physicalist monist account of mind.

²⁵Churchland (e.g., 1988, 1989) repeatedly highlights a nominal intertheoretic identity obtaining between “temperature” and average kinetic energy. In explication is referenced “a familiar phenomenal property, *temperature* . . . By ‘phenomenal,’ we mean a property that is reliably discriminated in [sensory] experience . . . [“folk thermodynamic”] concepts are regularly applied in casual observation on the basis of our native sensory systems” (Churchland and Churchland, 1997, p. 68). In this passage there is no room for any doubt that by “temperature” the Churchlands mean thermal percepts of warmth and coldness derived from the senses and are misidentifying these with their objective cause. Thereby they both seem to have momentarily forgotten the elementary puzzler devolved from antiquity and put to every beginning philosophy student, viz. that differentially warmed hands of one percipient immersed in water of uniform temperature yields two perceptually conflicting sensations of warmth versus coolness. But two distinct sensations are incompatible with a presumption of such “temperature’s” one-to-one identification with a unique, given average kinetic energy state of the water. If it were rejoined, following Paul Churchland’s teacher Sellars (1963), that such an anomalous perceptual situation does not furnish proper “standard conditions” of perception that are requisite for determining the “real warmth” of the water independent of all perception, I have in this paper already answered that self-contradictory rationalization of naïve realism, within the section *Naïve Realism: Sellars*.

This analogy per se from semantic oddness may be a relatively probable induction or otherwise, but its present application is incoherent because “warmth,” “sound,” and “light” are construed by Churchland (1985) as his objective qualia, which do not even exist, let alone exist in numerical identity with stimuli as light and sound waves. Further, Churchland’s singling out of Berkeley’s supposed ignorance is inappropriate insofar as Berkeley in the eighteenth century held a perfectly sound grasp of the nature of perception, in essence coherent with elementary science of perception today, unlike the scheme of Churchland and his fellow philosophic realists in the twenty-first century.²⁶

The reductions whose existence [philosopher Thomas] Nagel denies are in fact so complete that one can already displace entirely large chunks of our commonsense [Sellars: “manifest image”] vocabulary for observable properties [objective qualia], and learn to frame one’s perceptual judgments directly in terms of the reducing theory. The mean kinetic energy (KE) of the molecules in this room, for example, is currently about 6.2×10^{-21} joules. The oscillatory frequency of this sound . . . is about 524 hertz. And the three critical electromagnetic reflectance efficiencies . . . of this white piece of paper are all above 80 percent. These microphysical and electromagnetic properties can be felt, heard, and seen, respectively. Our native sensory mechanisms can easily discriminate such properties, one from another, and their presence from their absence. They have been doing so for millennia. The “resolution” of these mechanisms is inadequate, of course, to reveal the microphysical details and the extended causal roles of the properties thus discriminated. But they are abundantly adequate to permit the reliable discrimination of the [objective phenomenal] properties at issue. (Churchland, 1989, pp. 56–57)

Churchland’s citation of these objective qualia is made in order to render more inductively plausible his parallel to contents of our introspective mode. Those “symmetrical” subjective qualia should reduce to brain by dint of progressive neuroscience’s findings, just as other sciences supposedly have reduced “their” nominal objective phenomenal properties in externality to their “material natures” (read: objective causes).

Implicitly, by depositing these objective qualia outside the material percipient, Churchland undermines his own argument because if this type of material quale is localized in the world of physics rather than within the multiform phenomenal field of ethereal mentality, then it would be material in its inherent nature and accordingly must have little value for an analogical extrapolation to “subjective” qualia proper. For if objective qualia are material then

²⁶For example, Berkeley (1713/1908, p. 317) emphasizes the rational necessity for distinguishing distal and proximal stimuli, and consequent impossibility of identifying a color percept in visual space with its objective cause, because of their spatial discontinuity — thus repudiating naïve realism. Presumably any denial by Berkeley of (phenomenal) “sound’s” nature being equated with mechanical radiant energy was based upon that same proper distinction between percepts and their material causes, which Churchland, as evidenced by his construct of objective qualia, shows he does not comprehend.

how could they ever form a bridge to mind, by analogy or by any other means, toward the end of showing that supposed equal reducibility of “both” types of qualia? This is the very thing in question, whether mind stuff is indeed brain stuff, and so to presume beforehand that mind and matter can be so equated by analogies from material science is question begging (Crooks, 2004, p. 115; Crooks, 2007).

Indeed how is it possible that material qualia might partake of mind at all, to be so denominated “qualia,” if they are completely outside the boundaries of that percipient’s mind and body? A mere verbal intimation that they are identical, by using a common term (“qualia”) for the properties of both is additionally a fallacy of equivocation. “Objective phenomenal properties” is necessarily ambiguous and self-contradictory because any term inclusive of “phenomenal” necessarily connotes subjectivity, antithetical to objective status. Notwithstanding this solecistic neologism, such a hybrid term has properties of equivocation that permit one to implicitly shift one’s meaning as the context of exposition requires. Thus Churchland emphasizes the material nature of objective qualia when it is required to show that these “objectivities” have supposedly been reduced to physical matter; while their integral “phenomenal” (subjective) nature is played up when the proffered analogy to eventual mind–brain identification is stressed subsequently.

But how is it then possible that Churchland can make his case at least superficially plausible, if the contradiction in terms and in conception is as pronounced as suggested here? His way round that contradiction is to make those objective qualia half-stimulus and half-sensory. Now it is possible to neatly equivocate in meaning and terminology between “qualia” respecting its objective and subjective varieties. Just as objective qualia (heat, colors, pitch) are objective-*cum*-subjective, and allegedly have been shown to be numerically identical with physical properties of proximal and distal stimuli by progressive physical science (Churchland, 1979, 1988, 1989), so analogically his subjective qualia (“internalized” secondary qualities as emotions, thoughts, imagery, somatic sensations) will presumably be reduced to brain by another progressive material science, viz. neuroscience. (The reductions of these internal and external qualia are to different types of matter, organic and inorganic, so this further weakens the analogy.) The capstone of this schematized symmetry is that subjective qualia share in those properties of their objective form: they too exhibit that unique ontological nature that is half-“stimulus” (neuronal firings) and half-“sensory” (introspective contents).

As there has never been any such reduction of objective qualia to their putative material substrates, so there cannot be, at least by any analogy such as the foregoing, any demonstration that our mental contents as disclosed through introspection will be reduced to brain and thereby afford us untrammelled access to their “real” material nature through a heightened conceptual

insight obtained by a conceptual assimilation and application of progressive neuroscience. Analogically, as no physical science has ever elucidated the material nature of any fictitious objective qualia, so there will be no introspection into subjective qualia “down under” to their presumed material identity qua brain, at least to the extent that the past history of science is any guide to future reductions, mental or material.

Neuro-science Fiction

Churchland, in his 1995 text (p. 64), appears to obliquely reference his brain introspection hypothesis, as a “looking into” our brains under conditions of stereoscopy generating three-dimensional phenomenology. Horst’s (2005) psychophysical characterization of such stereoscopy would be that of psychoneural correlation posited between the apparent phenomenology and its hypothetical neural substrate. Are such hypothetical correlations as far as projective brain “introspection” might advance? If so, we could not introspect brain at all, but merely hypothesize psychophysical constructs (cf. Smythies, 1994, pp. 123–124), which, even in the most propitious scenario of confirmed hypothesis, could experientially never get beyond internal phenomenology per se (“veil of images”).

Granting Smythies’s (1994) observation from neuroscience, that there are at least thirty topographic maps in visual cortex yet one unified phenomenal visual field, it appears we would be required to introspect all thirty maps before we might be said to actually introspect the neural reality behind visual phenomenal appearances, according to the brain introspection thesis. But all such speculation hinges on the truth of direct realism, from which brain gazing is analogical extrapolation; and we know from psychophysics that there is only correlation between percept and stimulus, not identity. Accordingly, no more can we taste the “neural reality” of peach flavors (Churchland, 1995, p. 23; but see his contrary identification of fruit flavors with gustatory stimuli, 1989, p. 30) than by analogy introspect subjective qualia down to brain.

This critique has nominally assessed only Paul Churchland’s ramification of philosophical speculation by Feigl, Feyerabend, Rorty, and Sellars. It might properly be asserted that even should Churchland’s formulation be held untenable, disabled as it is by naïve realistic presumption, that should not reflect negatively upon the speculation per se, freed from the dross of philosophical realism.²⁷ But this charitable demurrer hinges upon two posits, namely, the ultimate status accorded to non-inferential perception and introspection, coupled with the tenability of the psychoneural identity thesis itself.

²⁷It is clear that Feigl (1958/1967, p. 92) in particular was anything but a naïve realist, following his colleague Köhler (e.g., 1929/1971) in explicitly distinguishing the somatic body image from the physical body.

“Directly” introspecting brain presupposes its analogical base in direct perception; so if this latter is debunked, *a fortiori* respecting the possibility of the former. What about “indirect” perception? Might this resurrect possible brain introspection for Churchland and his co-thinkers? No, because such indirect perception lands one straight into the representative theory of perception, which is anathema to Churchland and the others, excepting Feigl. But even if they were temperamentally amenable to representationalism, such indirect perception, by analogy to introspection, could deliver only an indirect access to brain, analogous to mere psychophysical correspondence between percepts and stimuli. This would be of no help to reductionists, for their claim is that introspected contents as emotions, thoughts, and desires *are* brain states, not mental states. If we had only indirect introspection of brain through so-called subjective qualia, there would appear to be two different entities involved, brain and qualia, thereby implying dualism. (Traditional representative theory holds that material objects are “inferred” through a “veil” of phenomenology. Thus two existentially distinct classes are implied, sensory phenomena and their stimuli.) This means, at least for the purpose of reductionist speculation (or agenda), that direct perception is *sine qua non* for any presumed direct introspection by analogy, i.e., that the parallel does not consist merely in semantics, in the shared term “direct.” Accordingly, this construct of brain introspection fails of its purpose in both cases, whether assuming as axiomatic either direct realism or indirect perception. No matter which philosophical or scientific doctrine of perception one holds, brain introspecting is empirically and logically incoherent or at least programmatically inutile. This then generalizes the proof against Churchland’s argument, applying also to his predecessors’ suggestions about possible brain introspection, supposing any offered full-blown arguments beyond mere throwaway speculation.²⁸

Canvassing the relevant “reality” of introspected subjective qualia, whether neural identities or otherwise (cf. Crooks, 2004, p. 108, on “neural reality” versus phenomenal reality), the proper analogy from science of perception is that percepts are not their objective causes and hence introspected contents could not be brain states. I am not saying this is necessarily the analogy to make or that in fact mind is not brain, only that if any analogy is going to be made from the known nature of perception, this would be the proper extrapolation, thus consequentially inimical to a brain introspection hypothesis.

²⁸Only presumption of non-inferential perception, as analogical basis, could furnish an equally non-inferential introspection of brain; for if there is inference from subjective qualia, as such, to what lies “under” those qualia, this would not be introspecting brain but rather *infering* brain (cf. Smythies, 1994, pp. 123–124). Thus there is required an explicit presumption of direct realism to make a case for introspecting brain. As such philosophical realism is incoherent with science of perception, that incoherence renders unsound its presumptuous analogical brain introspection.

My reasoning charitably construed might be taken as negating Churchland's argument for neural gazing and minimally constitutes nothing except a reaffirmation that folk psychology is correct in regarding introspection as solely of the mental. But as Churchland (1988, p. 14) rightly appends, this makes introspective contents only trivially "mental" in essence, not necessarily non-physical in nature.²⁹ But attentive readers will notice that nowhere in this paper or in my previous papers has my argument been directed against the psychoneural identity thesis *per se*; indeed I have often presupposed it to make my arguments. It is directed against the philosophical realism that happens to have been amalgamated with identity theory by Churchland and his predecessors.³⁰

If any reader has presumed that because I have been challenging the academically fashionable complex of realism plus reductionism, therefore I am questioning identity theory itself, this represents an index of the extent to which that reductionism has become intellectually melded with realism for almost fifty years (at least since Smart, [1959]), seemingly as though they were logically implicate. In fact, realism and reductionism are not logically implicate (Crooks, 2002b, pp. 271–272); they are indeed logically incompatible (Smythies, 1953, 1994) in that identity theory proper identifies sensory phenomenology with brain tissue or functions, not with distal and proximal stimuli, despite perceptual ordering imbued with naïve realism making such phenomenology appear "out there." Proper identity theory is thus allied to representative theory of perception (e.g., Feigl, 1958/1967; Köhler, 1947; Smythies, 1956, 1994; Wright, 1990). Apparently the only reason this rather obvious fact has been ignored or misunderstood is that, inexplicably, a seemingly inextinguishable penchant for rationalizing, justifying, and intellectualizing naïve realism has thus impelled academic philosophers for more than half a century. This contrasts with an earlier relinquishing of naïve realism, coupled with a cognizance in the first half of the twentieth century of the scientific rationale for that relinquishing, a cognizance considered as elementary by such eminent philosophers of mind as Russell, Lovejoy, Broad, and Price. I believe that recovery of their collective insight is prerequisite for any fruitful advance of extant philosophical psychology. The implications of elementary science of perception have at least as much relevance for an investigation of mind's place in the natural world as the currently fashionable research emphasizing neuroscience, neuropsychology

²⁹Whether the mental is inherently non-physical is a distinct question. It is not clear that folk psychology of perception ever made the equation of mental with non-physical, though Descartes certainly did. But his differentiation of mind versus matter presumed extension as the essence of the material; this overlooks that mental visual percepts, e.g., afterimages, have spatiality (Smythies, 1994).

³⁰The speculation by Churchland on introspecting brain resides not only upon the truth of identity theory but at least as much upon the truth of direct realism that has been built into the implicit premises of the speculation.

gy, and neural net simulations within the interdisciplinary umbrella called neurophilosophy.³¹

Addendum: Demonology Pseudoscience

A standard illustration of eliminativist argument proceeds from modern debunking of the supernatural. We are informed that just as demons, witches, warlocks, and familiars play no part in scientific explanation of ostensibly paranormal phenomena, so everyday phenomenal experiences of afterimages and visual imagery are to be ontologically banished by means of their analogical equation to that supernatural. This was the implicit allusion in the Australian materialist school's citation of mental "ghost stuff" that was then developed by Rorty, the Churchlands, and Dennett among others. Leaving aside the obvious rhetorical nature of such a posited parallel between phenomenology and demonology, we may better ascertain the analogy's inductive probability by critiquing these writers' suggestions.

How can mind stuff *both* elude all physical measurement and control the body? A ghost in the machine is of no help in our theories unless it is a ghost that can move things around — like a noisy poltergeist who can tip over a lamp or slam a door What about the option . . . of concluding that mind stuff is actually a special kind of matter? In Victorian séances, the mediums often produced out of thin air something they called "ectoplasm," a strange gooey substance that was supposedly the basic material of the spirit world (Dennett, 1991, pp. 35–36)

A certain primitive tribe holds the view that illnesses are caused by demons — a different demon for each sort of illness. When asked what more is known about these demons than that they cause illness, they reply that certain members of the tribe — the witch-doctors — can see, after a meal of sacred mushrooms, various (intangible) humanoid forms on or

³¹Churchland's penchant for "greedy reductionism" (Dennett, 1995, p. 82) makes him easy prey for simplistic equations of the mental with the neurological. In particular, he (Churchland, 1995, pp. 175–177) all but embraces the unsubstantiated identification of depressive affect with serotonin deficiency, touting Prozac as a "benign countermeasure to major depression," incidentally comparing (p. 312) that prescription cocaine-like stimulant to OTC antihistamines. "In some patients . . . there is a dramatic transformation in affect and behavior, a flowering that invites description as the birth of a new personality" (p. 177). Breggin (1994) more circumspectly attributes this effusive "new personality" to a pathological eruption of hypomania, continuous with more extreme expressions as suicide and homicide for which the drug is notorious. Most people would not know whether to laugh or cry when hearing of Nixon's physician waxing enthusiastic about neurological tests to diagnosis and weed out delinquents "predisposed" toward assassinating U.S. presidents, but Churchland dilates upon the untapped promise of such a psychiatric brave new world. "The current lock-'em-up-and-lose-the-key reaction must be respected. Indeed we should probably support it, vigorously if need be" (Churchland, 1995, p. 310). Underwriting that respectable reaction, greedy reductionism plus futuristic neurotechnology enable us to envision "a non-invasive scan of a defendant's neural activities during various standard sorts of social observations and interactions Presentation of that neurofunctional profile to a standard and [NIMH-, i.e., government-?] approved [computer] neural network, previously trained on a large data base of such profiles, in order to get a detailed socio

near the bodies of patients . . . (There are various competing theories about what demons do when not causing diseases, but serious witch-doctors regard such speculations as unverifiable and profitless.) . . . What do we reply to such a sophisticated witch-doctor? I think that all we would have left to say is that the simplicity of the accounts which can be offered if we forget about demons is an excellent reason for saying that there are no demons. Demon-discourse [mental talk] is one way of describing and predicting phenomena, but there are better [neuroscientific] ways. (Rorty, 1965, pp. 28–29)

Psychosis is a fairly common affliction among humans, and in earlier centuries its victims were standardly seen as cases of demonic possession, as instances of Satan's spirit itself, glaring malevolently out at us from behind the victims' eyes. That witches exist was not a matter of any controversy. One would occasionally see them, in any city or hamlet, engaged in incoherent, paranoid, or even murderous behavior. But observable or not, we eventually decided that witches simply do not exist. We concluded that the concept of a witch is an element in a conceptual framework that misrepresents so badly the phenomena to which it was standardly applied that literal application of the notion should be permanently withdrawn. Modern theories of mental dysfunction led to the elimination of witches from our serious ontology. (Churchland, 1988, p. 44)

Taking Churchland's analysis here as a resumé of the others, we observe that only two possibilities are cited when there would appear to be an additional third. Beyond Churchland's either/or fallacy, which contrasts the Infernal One's diabolic possession with more naturalistically interpreted cases of psychotic delusion, there is an equally naturalistic perspective to take that posits non-schizophrenic, sincere devotional practices exercised by votaries of a nonexistent satanic being. In this sense, real (literal) witches have existed since antiquity and still do (Cavendish, 1970, pp. 2–11). Accordingly, there has not been any elimination of them as an ontological category. Churchland is of course correct when he states that modern psychiatry has supplanted exorcism in any serious treatment of delusional or psychopathic disease states. But his point is applicable only to actual instances of psychosis, not to the legally sane and rational-if-eccentric occult practitioners engaging in relatively benign acts as nudist rites or bewitching by hoodoo. Even this must be qualified, because though diagnoses

pathic diagnosis, an estimate of future behavior problems [assassination attempts?], and recommendations about possible treatments [psychotropic drugging] . . . Such high-tech evaluations may also help the courts to be more effective at protecting the innocent public. Identifying the truly problematic offenders is the first thing, if only to lock them away [emphasis added] . . . More selfishly, think of our tax dollars. If only half of our convicts could be deflected from prison in this way, maintained by cheap pharmaceutical implants perhaps, voluntarily received, we would save many billions of dollars . . ." (Churchland, 1995, pp. 313–314). The Orwellian nature of this "voluntarily received" psychopharmaceutical straightjacket is further clarified, in keeping with a Nixonian "law and order" judicial philosophy: "If he insists on keeping his dangerous sociopathology, then perhaps he should be free [emphasis added] to contemplate it, untreated, behind locked doors and barred windows" (p. 313). Such extremist, dichotomous either/or fallacies, here, of draconian criminal sentencing versus toxic suppression of neuro-transmission, as though other alternatives were inconceivable or not worth mentioning, are characteristic of Churchland's thinking. In the Addendum I furnish another illustration of this illiberal reasoning.

as schizophrenia have displaced accusations of witchcraft, such diagnostic categories are themselves contested within psychiatry and psychology (Breggin, 1991; Brown, 1990; Kirk and Kutchins, 1994; Mirowsky, 1990; Sarbin, 1990). Szasz (1970) even seriously equates psychiatry with the Inquisition, meaning in this context that there would have been no substantive therapeutic advance from witch-hunters to psychiatrists (“witch-doctors”)!

According to the evidence repeatedly brought out in specific detail by confessions at witch trials, the celebrants of a “sabbat” . . . would anoint themselves with drugs . . . likely to induce ecstatic states (including particularly the sensation of flying) and then engage in ritualistic dancing, feasting, and sexual orgies. The leader of the group wore the mask of an animal (usually a bull or a goat), and was considered an embodiment of a god, for which reason he was supposed by Christians to be the devil in person If no witch cult existed, it is difficult to account for all these specific [corroborating trial] details, or indeed for the whole persecution It seems more plausible to suppose that Neolithic religious practices lingered on in backward rural areas. The black magic attributed to the witches was also a prehistoric [folk scientific] survival . . . knowledge of which may have been handed down in rural families. (Parkes, 1959, pp. 50–51)

This is no logomachy, no fallacy of equivocation upon the word “witch” with its alternative connotations of ritual versus psychosis. The point is that through faulty selection of evidence and case examples, as articulated within fallacious either/or antitheses, Churchland gives two options only. These two, while seemingly conclusive in their pat opposition, overlook a viable third alternative that dispels the very claim to have eliminated an ontological category.

From his passage it is not clear which of two analogies Churchland means to argue. There is the weaker induction, namely that witches as satanic minions have been ontologically debunked and hence the same fate probably will befall all mental contents, particularly sensory phenomena. There is also the tighter analogy that one mental category, namely demonic possession, has suffered eclipse and that therefore other more coherent forms of thought and phenomenology may follow the same path to intellectual bankruptcy and thus conceptual oblivion. That first induction is extraordinarily weak because between (say) a percept as studied in psychophysics and a fictitious witch on a broomstick there appear few if any points of resemblance. The second analogy too appears bogus, because if Churchland is claiming that demonic possession qua mindset has been eliminated, he tacitly admits the enthronement of another one right into its place, namely psychotic delusion or, with my counterexample, occult devotions. What psychiatry has replaced in lieu of demonic possession, namely organic and functional disease states, and social anthropology has accredited as devotional intention — thus intentionality — still bears the manifest imprint of mentality. Nothing of its kind has been eliminated by any supplanting modern explanation, medical or social anthropological. There has been only reinterpretation of empirical psychological and behavioral phenomena, not any conceptual elimination thereof. Churchland’s account

seems to oscillate between these two adduced interpretations, but in either case the analogy would fail of its purpose.³²

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³²In his affected persona as debunker of the paranormal, e.g., comparing himself to a policeman in the “red-light district” of parapsychology (Churchland, 1987), Churchland appears merely to regurgitate the philosophical scientism of the late Carl Sagan’s popular science works, specifically his *Dragons of Eden*. Here are several parallels that collectively would not credibly admit of coincidence: bloodhounds’ olfactory expertise (Churchland, 1995, pp. 26–27; Sagan, 1977, pp. 155–157); chimpanzees’ (e.g., “Washoe’s”) language capacities (Churchland, 1995, pp. 257–264; Sagan, 1977, Chap. 5); dismissal of parapsychology (Churchland, 1988, pp. 17–18; Sagan, 1977, pp. 237–238); “billions and billions” of possible mental states supervening upon neural synapses (Churchland, 1995, pp. 4–5; Sagan, 1977, pp. 41–42); Galileo’s martyrdom for science perpetrated by a scheming Catholic Church (Churchland, 1988, p. 15; Sagan, 1980, pp. 140–143). There is also the obscure adjective “triune” used by both authors (Churchland, 1989, p. 65; Sagan, 1977, *passim*), customarily cited in theological contexts but unusually employed by both men for referring to neurological functions or structure. The proposal might plausibly be made that Paul and Patricia Churchland are essentially eclectic popularizers of other philosophers, primarily of the reductionist or eliminativist stripe. Respecting Sagan in particular, Paul Churchland’s recorded materialist worldview appears to constitute a philosophical popularization of a scientific popularization.

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