"We can still distinguish science from scientism, a view in which science, which allows us so admirably to find our way around in the world, is elevated (?) to the status of metaphysics. By metaphysics I mean here a position, reaching far beyond the ken of even possible experience, on what there is, or on what the world is really like. Scientism is also essentially negative; it denies reality to what it does not countenance. Its world is as chock-full as an egg; it has room for nothing else. Commitment to the scientific enterprise does not require this. If anyone adopts such a belief, he or she does it as a leap of faith. To make such a leap does not make us ipso facto irrational; but we should be able to live in the light of day, where our decisions are acknowledged and avowed as our own, and not disguised as the compulsion of reason."¹

Though I have argued against the "material" and the "substance" of Naturalism as metaphysical existences, there is a deeper -and truly metaphysical-sense of substance that I do wish to maintain. It is embodied in our, (and Kant's), minimal realist assumptions -in the axioms of externality and of experience.

Though Cassirer argues for a broad range of symbolic forms, there is another form implicit in his thesis, (roughly equivalent to the whole of the natural forms), -and innate in Kant's as well. It is the metaphysical form, i.e. the whole of the metaphysical context of the problem itself. (It was as a "Prolegomena to any Future Metaphysics" that Kant himself characterized his work, after all.) This metaphysical form is the proper context for any conception of cognition, (and realism), but, precisely because of Kant, it is necessarily severely restricted and analytic.

Inside of the form of metaphysics, (wherein we are now framing the problem), we are constrained by Kantian parameters -i.e. the fundamental, (rather than the historically limited), parameters discussed in chapter 3. These abstract limits, the axioms of externality, and of experience, and the relativity of perception to the (human) instrument whereby it is effected, dictate a general, relativized and abstract solution to the problem.

Always implicit in Kant, however, was the assumption of some connection between our cognition, and the reality which is perceived, (metaphysical reality),

¹ Bas Van Fraassen, Quantum Mechanics, p.17
-and that connection was assumed to be reflected in experience, ("intuition"). Always implicit in Kant is the relationship between the absolute external existence which he affirms and the modifying, coupling relationship of cognition itself. Kant's is very much a modern mathematical conception. He argues that we cannot separate the facts of our "instrument", (our cognition), from that which it "measures", (cognates). The relationship between that cognating entity and its object, however, is understood in a very profound and sophisticated sense -very much in the sense of modern algebra. His concept of intuition, (experience), is a relativistic one. The connection is seen as a limit concept -as the most abstract possibility- conceived relativistically to "the X" of metaphysical reality. Alternatively, we might today characterize this connection as the most abstract reinterpretation of Maturana and Varela's "structural coupling", but removed from its strict Naturalistic (metaphysical) formulation. I think the most natural characterization of it is, simply and abstractly, "interface"! This interface, this connectivity, between cognator and that which is cognated, is assumed in any realist conception of reality, (most definitely to include Kant's itself). It is implicit in materialism, in dualism ...; it is implicit in behaviorism, and identicism ..., in "memes" and in neural process. I mean it to be the minimum intersection, (the limit), of all of these realist, (i.e. non-idealist), possibilities. This minimum conception of interface is then, (by definition), necessary and apodictic to any realist position. Realistically, it does, therefore, metaphysically exist! This is the metaphysical reality that Kant does not name, but which is implicit in his, and any other realist position. As a realist, I claim it therefore to truly metaphysically exist, and I call it "substance". This is not, however, the "substance" of materialism, but an analytic conception -i.e. it is the metaphysically minimal necessity of realist cognition.¹

That there is something more, some other "substance", some externality other than the interface,² is also apodictic to realism -it is presumed in the axiom of externality -and I confirm it as well. Kant has stripped the latter of all

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¹ There is an understandable demand here for a more precise definition, a more concrete characterization of this "interface". But I think the demand, truly considered, is really for a metaphysical characterization of precisely the kind that Kant and Cassirer obviated. It is the essential and invariant -i.e. the relativistic and "context-free" component of all realist philosophies that I wish to isolate, and that is approached, legitimately and solely, as a limit concept. Mathematicians will best understand my meaning. It is the analytic and limiting essence, (i.e. invariant), of the connectivity of cognition in general that I define as "interface" and that I propose as apodictic to all realist philosophies and as itself metaphysically real.

² Though real, matter, (external substance), itself is, for Kant, "substantia phaenomenon".
knowable determinate form, (but not of existence),¹ but it is the former with which I wish to concern myself here.

**The Last Hurdle**

There remains one last difficulty with my (Naturalist) hypothesis of Chapter 2. From the standpoint of my original claim of a complete solution to the mind-body problem, "mind", (at the stage of chapter 2 -and even at the stage of Chapter 4), remains conceivable only in a reductively materialist, (alternatively: an organizational), sense. It remains only process and without "awareness" except as the latter is itself considered reductively.

*What is "mind" and where is it? How could it be? The answer is that it is!* It must "be". For it is the (apodictic and metaphysical) "substance" of the

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¹ Cassirer's "Symbolic Forms" is an extension of the Kantian position, and relativizes experience. Or rather, it relativizes the *interpretation* of experience. Experience itself is a primitive. We can describe it in various ways under the differing "forms", (e.g. sensuous impressions" under Naturalism), but ultimately it is a limit concept. (See Kant "limits" vs. "bounds"), -it is what remains invariant under all consistent interpretations, (forms). "Objects" are implicitly defined *within* the variant forms. Are there *ontic* objects, then, (i.e. ontic localizations)? We will never know!

Consider Kant:

"Now, if I go farther and, for weighty reason, rank as mere appearances the remaining qualities of bodies also, which are called primary (such as extension, place, and, in general, space, with all that which belongs to it (impenetrability or materiality), shape, etc.) -no one in the least can adduce the reason of its being inadmissible. As little as the man who admits colors not to be properties of the object in itself, but only as modifications of the sense of sight, should on that account be called an idealist, so little can my thesis be named idealistic merely because I find that more, nay, all the properties which constitute the intuition of a body [object] belong merely to its appearance." Kant, Prolegomena, P.37, his emphasis.

He goes on: "The existence of the thing", (my emphasis), “that appears is thereby not destroyed, as in genuine idealism, but it is only shown that we cannot possibly know it”, (my emphasis), “by the senses as it is in itself."

I would modify Kant's last sentence to delete "of the thing". [To: "The existence that appears is thereby not destroyed, as in genuine idealism, but it is only shown that we cannot possibly know it by the senses as it is in itself."

If extension, place, space, impenetrability, materiality, shape are brought into question, (even *cardinality* in QM), then objects, *as objects* are also questioned. What remains are my two axioms: the Axiom of Externality and the Axiom of Experience. But these are *limit* concepts in a strict mathematical, (and Kantian), sense.
interface itself that I propose is the substance of mind. The reality, the metaphysical presence of this interface is the immediate and necessary consequence of the synthesis of our two realist fundamentals: externality and experience. It is the relativistic equation between a cognitive entity and externality. This necessary presumption of connective "substance" supplies the last remaining element for the complete solution of the mind-body problem.

The Third Hypothesis: a formal statement:

Given that the interface, (as just defined), metaphysically exists¹ and given further that it is structured as postulated in my first and second hypotheses, (and this is my third hypothesis), then it internally and necessarily defines our objects and what they do -and they too exist! And, as demonstrated by my arguments in Chapter 2, it knows them! All the problems of structure, all the problems of logic have been dealt with in the previous hypotheses, and a plausible Naturalist rationale is in place. All that remained was existence. It is the metaphysical existence of the interface itself which supplies the reality, (the existence), of sentiency! Mind is the unified concept,² (the rule), of this interface. Under the combination of my three hypotheses, then, mind becomes quickened, becomes aware, becomes "live". We do know, we are aware, we are real.³ What we are

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¹ which I have demonstrated that we must, as realists, assume
² i.e. the unified constitutive concept
³ There is a wonderful, (and I think very relevant), passage in Cassirer's "Spirit and Life" that I ran across many years ago:

"For man it follows that he must traverse his appointed orbit, in order at the end of his road to find his way back again to its beginning. That is the fate imposed by our 'circular world'. 'Paradise is bolted fast, and the cherub far behind us; we must travel around the world and see whether perchance an entrance can be found somewhere from the rear.' "Spirit and Life", P.858 in "The Philosophy of Ernst Cassirer", Tudor, 1958

Let me paraphrase it: Man has been expelled from the eastern gate of Eden, (from simplistic connection to his naive world), by his acquisition of knowledge, (and its innate skepticism). The gate is now guarded by an angel with a flaming sword, (the consequence of reason), preventing his return. Forced to face the harsh and bitter world outside, he has embarked to walk clear round the world, (in his acquisition of knowledge), and hopes to find a gate unguarded on the other side so that he may re-enter paradise!" Man was shut off from simple contact with reality when he first questioned that contact. Cassirer asserts that the whole of the human project of knowledge was to return to the simplicity, (in the good sense of the word), from whence we came! I feel we are very close to that gate. Rationality and
sentient and aware about however, is not metaphysical externality. Rather, it is the metaphorical organization of primitive process with which we deal.

The problem was that the "egg" of Naturalist metaphysics, (as characterized by Van Fraassen), was just too full and left no room for anything else. Or, rather, we were ignoring the shell!

The difficulty of the substance of mind was the result of an illegitimate metaphysical dogmatism, (presumed, incorrectly, as innate to Naturalism) -by its asserting more than we can ever know. It asserted relative organizations -i.e. its "material objects" as absolute referents to absolute material reality and thereby claimed completeness, (and exhaustion), of reference. Nowhere in that domain, however, could specifically sentient mind exist. It excluded the very possibility of "mind" in our ordinary sense of it.

The problem is resolved, however, by reducing our metaphysical presumptions to the minimal -and legitimate- basis possible. That basis is the minimal and universal assumption of ontic interface, (conceived in its most abstract mathematical sense), which proves to supply the "matter" of mind sufficient in itself.¹

\textit{Philosophical Implications}

I think my thesis opens a new perspective on the classical dilemma of idealism versus materialism, i.e., the question of the primacy of the mind versus the primacy of the physical world. My metaphysical answer comes down, therefore, on the side of the mind, relativizing Naturalism. In that sense my answer is "idealistic". But, (big "but"), "mind", as I redefine and reduce it, (in a very real sense of the word "reduction"), is specifically a metaphysical interface. This interface is real, that is to say, "substantive" (=="physical"). I do not say, (nor do I believe), that it is \textit{all} that is real but rather that it is innately impossible to know the unmediated nature of that something more. This latter, of course, is just a restatement of Kant's essential conclusion.

That interface, as I propose it, is not the ephemeral and capricious "mind" of classical speculation. It is not "spirit" as opposed to "material". It is specifically and scientifically interface. Mind is purely "physical" in that sense -i.e., it is a metaphysical thing and no more. It is \textit{part of} the world -it is real, but it is not separate or "purely personal". This is what we know exists. That \textit{more} exists, we must also accept as realists. But, once again, specifically as realists we

\begin{footnote}{1}{It is curious to me that materialists always seem to be deriding metaphysics. They are its strongest proponents.}

perception, mind and reality are no longer antithetical. (Cassirer's quotation is from Kleist's "The Marionette Theatre".)

²
must accept the interface as well. The interface is the only assumption needed for mind, and that is all, I propose, that mind is.

Given the reality of a system of axiomatic relationality in the sense of my first two theses, then "mind" becomes "live" in all the senses we normally demand of it. The mind-body problem is solved in all its aspects. I think I have "cracked the code" of mind and brain. It is a strange and disturbing one, I admit, but I believe it is, overall, the most plausible alternative on the table.

This concludes the presentation of the core of my overall thesis. The next chapter is a brief statement of conclusions and consequences, and the last chapter serves as an epilogue. Appendix F will deal briefly with Dennett's "color phi" and briefly foreshadow a future extension of my model. Dennett supplies the clue. (The "Afterward: Lakoff / Edelman" is a restatement and further clarification of the logical problem.)