



## Chapter 4

### My Mind as a Substance and My Body as a Substance

Not only does the idea of substance seem pre-scientific, it also suffers from accommodating a diversity of meanings. As Aristotle uses it, the word "substance" appears in Greek as "ousia", which ...derives from the Greek verb 'to be' and the English translation as 'substance' comes to us via its Latin translation as 'substantia'. This in turn is derived from the preposition 'sub' ('under') and the verb 'stare' ('stand')<sup>1</sup>

In the Aristotelian usage, "ousia", which is an abstract noun and signifies "beingness", often appears with an article to indicate a particular object, or a particular kind of object.<sup>2</sup> On the other hand, its Lockean meaning has to do with some mysterious underlying support of a thing's qualities or attributes. The points that will be made in this chapter will not appeal to the way the etymology of the term "substance" evolved historically. It is of course unavoidable to allude to some implications of the concept of substance that have

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<sup>1</sup>E.J. Lowe, "Substance" in *An Encyclopaedia of Philosophy* (Routledge, London, 1988), p. 255-256.

<sup>2</sup>Hamlyn, *op. cit.*, p. 60.

their places within the framework of certain philosophical analyses, but our main concern will be to bring out the cogency, and perhaps the philosophical profit, of thinking about the mind under the concept of substance.

It may be asked if we can dispense with the notion of substance. As Lowe points out,

...even though philosophers now fight somewhat shy of the word 'substance' many of the philosophical concerns which motivated its technical use in earlier times are as alive as ever under the guise of different terminology...<sup>3</sup>

In the light of Lowe's comment, the question should be understood to mean something like "Would we be conceptually poorer without this notion of substance?". It has often been noted in the analyses of this concept that substance has some important relations to the ways in which we can conceive of and talk about the world. One way in which this position can be brought out is to consider how the world is divided into things and kinds of things. The question of how we relate to such a division and diversity connects immediately with the idea of substance. As the saying goes, a rose by any other name smells

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<sup>3</sup>Lowe, op. cit., p. 255.

just as sweet. By the same token, to call "substance" by any other name or even to abrogate its usage altogether makes no difference to its conceptual relevance.

In connection with the way in which the world comes to us in the form of discrete objects, which is not to say that this is its only manifestation or its only possible manifestation, our comprehension of such an appearance can be analysed in several contexts. On the simplest level, we identify such diversities in terms of individual things--a table, a moon, a leaf, a bird, an atom, ect. A higher level of complications can be understand in terms of the relations among things or the categorization of individual things into kinds of things. How these ascending complications are to be classified and analysed is of secondary concern at the moment. What is our present focus is the inevitability of the idea of substance.

According to Aristotle, the term "substance" applies to substantial things, concrete objects identifiable in terms of particulars:

...substance is used in contrast with the term 'attribute' so that substances are particulars that can exemplify attributes, but cannot themselves be exemplified. In this tradition the paradigmatic substances are familiar concrete objects--material bodies, plants, animals, and human beings. They are contingent beings: they come into being, persist through

time, and then pass out of existence. Furthermore, they take up space, and they are subject to a variety of changes through which they remain numerically the same...<sup>4</sup>

The category of substantial things picked out by the concept of substance reflects Aristotle's no-nonsense view which emphasizes the ontological primacy of concrete objects. The Lockean idea of substance, on the other hand, is more abstract and the suggestion that substance is an underlying support which hold the properties of a thing together gives rise to further speculation, more metaphysical, that the idea of substance is more properly equated with "bare substrata":

Metaphysicians have often held that an analysis of substance should focus on the "relationship" between ordinary objects and their properties. Typically we think that each of the properties associated with a substance is possessed by some object; furthermore, we tend to think that all of the properties associated with any one ordinary object are possessed by one and the same thing. Indeed, we are inclined to think that it is

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<sup>4</sup>Michael J. Loux, Substance and Attribute (D.Reidel Publishing Company, Holland, 1978), p. 107.

because they have a common possessor that distinct properties come to be associated with a single substance. now, pre-philosophical thought and talk about substance operates on the assumption that it is the substance itself which possess all of the properties we associate with it. An important theme in the history of ontology is that this pre-philosophical conception of the relationship between a substance and the properties associated with it is false. On this view, the possessor of the properties associated with a material body or person is something other than the substance; it is, rather, an "ingredient" in the substance, a constituent of the substance which, along with the properties associated with that substance, makes the substance be what it is.<sup>5</sup>

Despite what appears to be differences between taking concrete object as paradigmatic of substance and the idea of substance as an underlying support, the two views are not incompatible. The concrete individuals are the object of references. We conceive of the world and refer to it through them. Without discrete entities

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<sup>5</sup>Ibid., p. 107-108.

our referring concepts and expressions would collapse into subjectivity. The unintelligibility of the mystical experience of an all encompassing oneness may be indicative of what follows when the boundaries among discrete individuals break down. On the other hand, if it seems impossible to conceive of and talk about the world without referring to its discrete constituents, it is also equally difficult to refer to individuals without also referring to the properties inherent in each one. Of course, you can point to an object and just say "table". But in so doing you would have only picked out one object without having talked about it in any sensible way. Indeed, a world populated by quality-less objects is unthinkable, for even subatomic particles have attributes.

The pull between the necessity to have object of reference, on the one hand, and the unintelligibility of such a reference lacking their attendant properties or attributes, on the other, points to a dilemma that can be described by saying that without discrete objects, references to the world is impossible, but the objects themselves are unknowable without our making further references to their properties. When asked what sort of thing this table is, all we can do is to give a list of its properties. The dilemma focuses on our necessary reference to an individual objects when making an ontological claim about the world and our eventual admission of ignorance about what the individual really is in itself, that is, the individual minus all of its properties.

From this perspective, both the Aristotelian flavor of substance analysis and the Lockean flavor of substance analysis seem to be trying to understand the same equation which comes in the form of "This table is black". The former emphasizes the value represented by the word "table", while the latter pays attention to the value of "black". On the first view, the table is a paradigm of substance. The second view seems to be that any reference to the table redirects us back to the second value in the equation. Does this mean that any genuine reference is not possible? The problem can be alternatively posed as one which seeks to understand what we are talking about when we say that this table is black.

This problem persists as long as concrete objects hold a monopoly on being ontologically fundamental. That such a simple referring expression as "This table is black" can cause an ontological crisis results directly from placing unequal ontological weights on the two sides of the equation. In this case, the table, a paradigm case of concrete entities, becomes the touchstone of reality, while its quality of being black, which is a quality and, therefore, not a substance, is relegated to a position of being descriptive. The surprise of such an analysis lies in the fact that just because qualities cannot be substances, the "beingness" of the table, with its full substancehood, cannot be identified with its being black or with any other possible qualities it might have. This means that any description of the table turns out to be a description of the

quality of the table. But, then, how can we talk about the world in terms of concrete individuals if we cannot talk about the individual themselves?

This problem is forestalled if the notion of substance is metaphysically re-conditioned to signify a neutral context of "being". Just as space and time may be thought of in terms of a container model, the idea of substance may be filled out by analysing it as a kind of neutral ontological basis for various categories of being. This view of substance considers this notion in terms of bare substratum. Instead of trying to make a case for the concept of bare substratum, it would be more relevant to our project to get right down to the reasons why it is cogent to conceive of the mind under the concept of an immaterial substance.

A concrete object such as my physical body is paradigmatic of a material substance, while my mind falls more neatly into the context of an immaterial substance. In the case of our black table, for instance, all the table's qualities would be conceived of as inherent not in the object called "table", but rather in a kind of substance which is conducive to supporting the qualities or properties of a material object such as this table. Similarly, since all my mental properties are not physical properties, they must be held together and given an identity by an immaterial substance. Whether all immaterial substances are homogeneous or whether all mental properties must be



supported by the same immaterial context is another issue that can be left aside. What is important is to note that whether it is a table or a mind that one is referring to, if the notion of substance is left out or if is prejudiced with one ontological basis or another, one is faced with the awkward alternatives of having to avow ignorance of what is being referred to or to deny that one is describing any particular thing at all.

Since it is often alleged that the findings of science make materialism an unequivocal position to hold when viewing the underlying composition of things, let us consider the claim that the mind is an immaterial substance by comparing it to the more respectable theory of chemical substances. We are familiar with the division of the fundamental composition of the world into four substances: earth, fire, water, and air. With the advent of modern science in the seventeenth century, the notion of substance came to be defined in experimental terms using operational definition which focused on what each substance was capable of doing rather than on what it is.<sup>6</sup>

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<sup>6</sup>Isaac Asimov, Understanding Physics, Volume III, The Electron Proton, and Neutron (George Allen & Unwin, London, 1966), p. 6.

In 1661, Robert Boyle wrote a book called the Sceptical Chymist in which he explained his notion of an element.

If an element is indeed one of the simple substances out of which the universe was composed, then it should certainly not be capable of being broken down to still simpler substances or of being produced through the union of still simpler substances. As soon as a substance was broken into simpler substances, it was, at once and forever, not an element...

Of course, not all substances found in nature are elements. Most substances are composed of two or more elements, not merely mixed but intimately joined in such a fashion that the final substance has properties of its own that are not necessarily similar to those of any of the elements making it up. Such a substance formed of an intimate union of elements, is called a compound.<sup>7</sup>

In terms of terminology, elements are truly the fundamental entities. According to this classification, neither earth nor air nor fire nor water qualifies as an irreducible element. In quantum mechanics, sub-atomic particles come closest to the idea of a fundamental entity. However, it is always possible that if quantum

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<sup>7</sup>Ibid., p. 6.7.

mechanics is superseded, the new theory might show that quantum entities are composed of still more fundamental stuffs.

Using the chemical model, we can construct an analogy between the chemical substance which is composed of at least two elements, such a substance being termed a compound, and the atom, the simplest of which is that of hydrogen which is composed of one electron and one proton. According to the chemical model, an atom is a compound which qualifies it as a substance. Materialists would have no objection to this consideration which makes the atom a fundamental substance. On the contrary, it is one of the materialist orthodoxies that atoms constitute the world of concrete objects. Now, let us consider how interaction between two substances is explained for chemistry by quantum ideas:

The cloud of electrons provides the outward face of the atom and the means by which it interacts with other atoms. It is largely immaterial what lies buried that far into the heart of the electron cloud--what another atom "sees" and "feels" are the electrons themselves, and it is the interactions between the electron clouds that are responsible for chemistry. By explaining the broad features of the electron cloud, Bohr's model of the atom put chemistry onto a scientific footing. Chemists already knew that some elements were very alike in their chemical properties, even though they had

different atomic weights. When the elements are arranged in a table according to their atomic weights (and especially when allowances is make for different isotopes) these similar elements show up at regular intervals, one pattern recurring for elements eight atomic numbers apart, for example. This gives the table, when arranged so that elements with similar properties are grouped together, its name "periodic."

Chemistry is concerned with the way atoms react and combine to make molecules. Why does carbon react with hydrogen in such a way that four atoms of hydrogen attach to one of carbon to make one molecule of methane? Why does hydrogen come in the form of molecules, each made of two atoms, while helium atoms do not form molecules? And so on. The answers came with stunning simplicity from the shell model. Each hydrogen atom has one electron, whereas helium has two. The "innermost" shell would be full if it had two electrons in it, and (for some unknown reason) filled shells are more stable--atoms "like" to have filled shells. When two hydrogen atoms get together to form a molecule, they share their two electrons in such a way that each feels the benefit of a closed shell. Helium, having a full shell already,

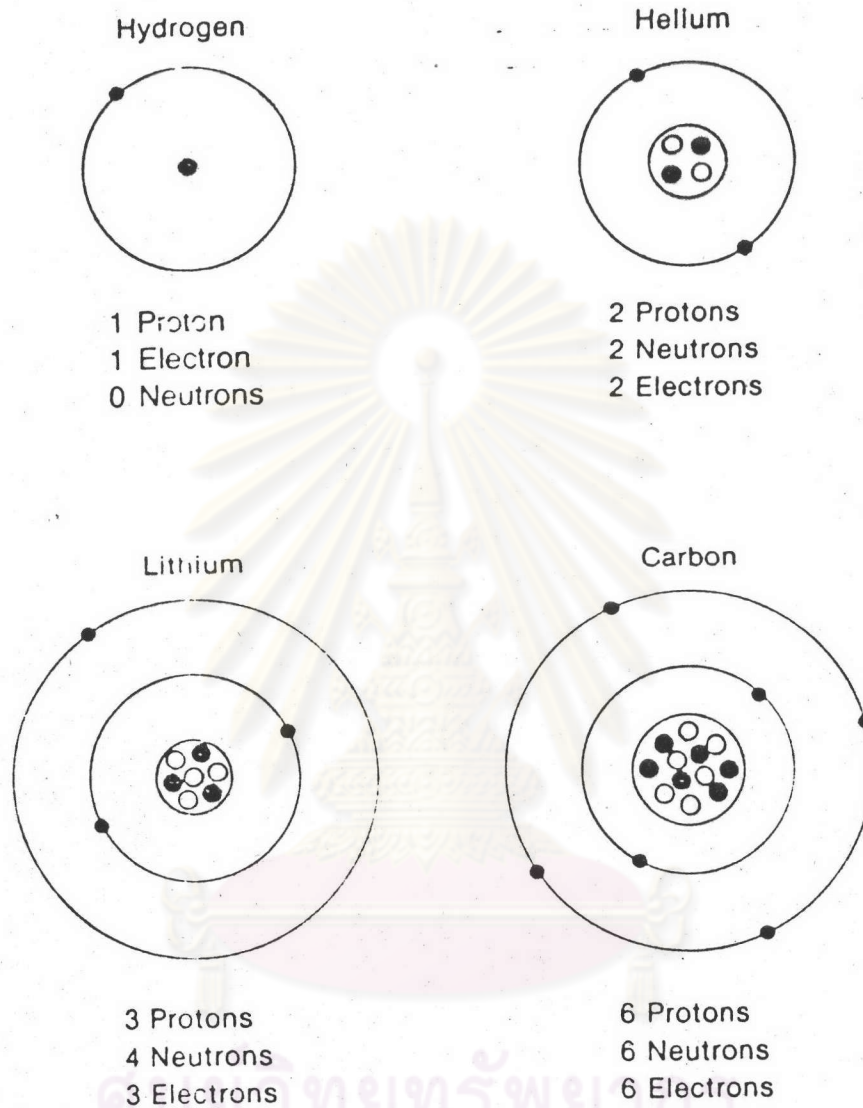
is not interested in any such proposition and disdains to react chemically with anything<sup>a</sup>

Bohr's model of chemical interactions based on quantum considerations suggests to us that to explain why it is that closed shells are "preferred" is to delve deeper than the explanations provided by either quantum mechanics and chemistry. Nevertheless, we can speculate about such a preference. One reason why closed shells are preferred is that they provide stability to the molecules in which they reside. This is the clue to the kind of substance that constitutes the mind.

The fact that our sense of identity, our sense of a personal self, underlies what it is to say that we are whom we are, figures in most analyses of the mental. The notion of selfhood is one of the best reasons for demarcating the mental from the physical. But just as the selfhood is considered to be the strongest candidate for the mental, it has been as strongly denied that selfhood resides in an immaterial substance. However, if we utilize the quantum model of chemical interactions, we might be able to say that self-hood is possible and is explicable in terms of stability, much in the same way that stability explains why certain elements come together in a bond.

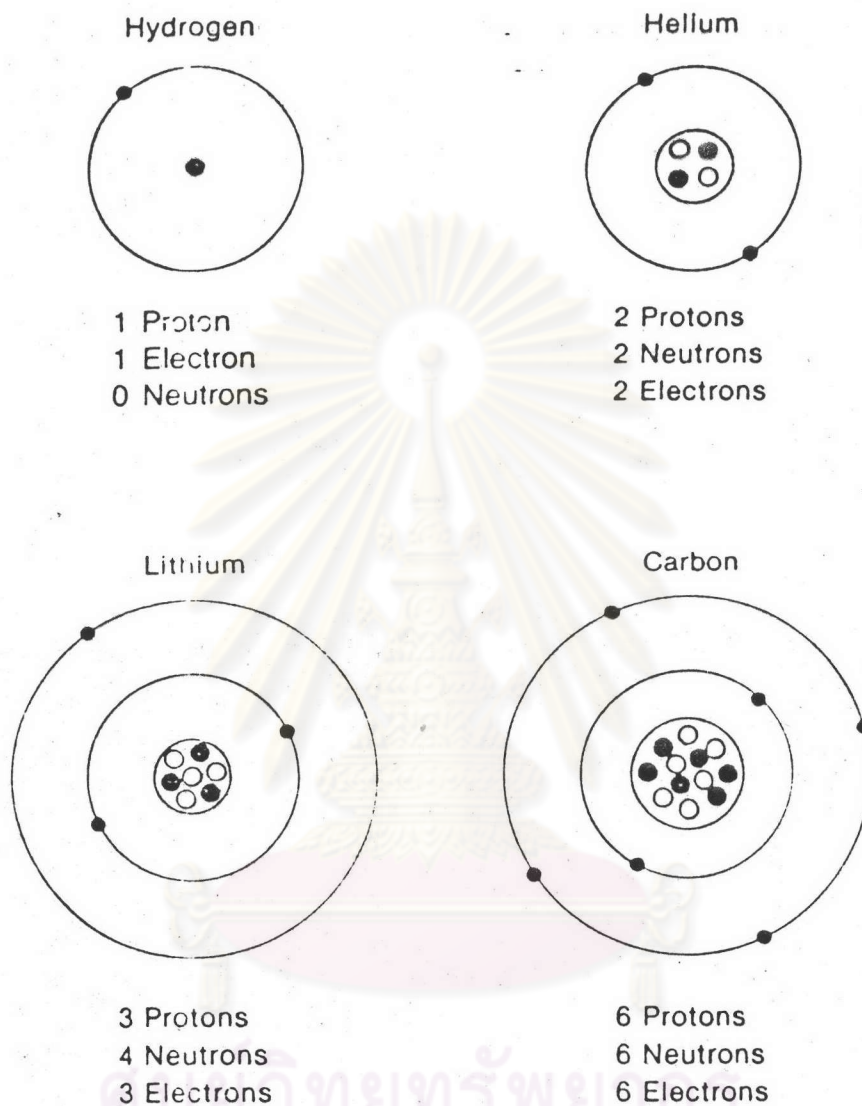
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<sup>a</sup>John Gribbin, In Search of Shrodinger's Cat (Blackswan, Baskerville, 1984), p. 71-75.



*Figure 4.2* Atoms of some of the simplest elements can be represented for many purposes as a nucleus surrounded by electrons in shells corresponding to the steps on the energy-level staircase. The quantum rules allow only two electrons on the lowest step, so lithium, with three electrons, has to put one of them onto the next step up the energy ladder. This second shell has "room" for eight electrons, so that carbon has a shell exactly half full, which is the reason for its interesting chemical properties as the basis of life. \*

\* *Ibid.*, p. 72



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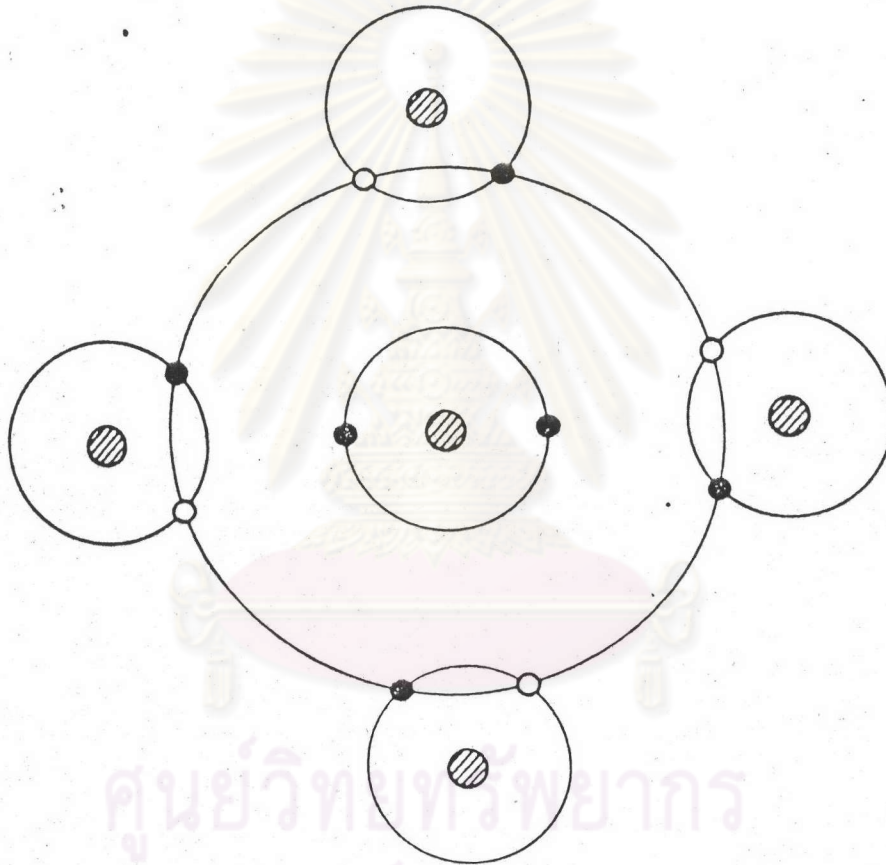


Figure 4.3/When one carbon atom links with four atoms of hydrogen, electrons are shared in such a way that each hydrogen atom has the illusion of a full innermost shell (two electrons) and each carbon atom "sees" eight electrons in its second shell. This is a very stable configuration. \*

\* Ibid., p. 74



Viewing my own mind as an immaterial substance is ontologically prudent. While it has already been seen that the notion of substance is relevant to how we relate to our world, it is only a minimal metaphysical step to acknowledge that since there are qualities which are not applicable to physical things, it is ontologically valid to appeal to an immaterial substance. Moreover, since the qualities which rightly apply to my own mental states are constrained by the subjectivity condition which makes it imperative that I know of my own mental contents that they are my own and no one else's, the assumption that my own mind resides in the stability of an immaterial substance should raise no violent objection



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