Towards a Spiritualized Science Concerned with the Beings around Us.

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According to spiritual conceptions such as those of anthroposophy, the world only consists of spiritual beings. They range from elementals to the beings of the hierarchies and to the divine. Modern science on the other hand appears to teach a completely contradictory philosophy; the laws of physics, that is the laws of what is material, explain everything. Scientific results are based on rational deduction following experiments and observations; they have had to survive criticism by those who challenged them, and are known to work in modern technology. In comparison spiritual teachings given by a few or even in some cases by only one master can appear crazy, in particular in their descriptions of various spiritual beings.

The aim of this article is to indicate a path which may unite science with the spiritual, to show that present results of science if developed in certain directions may lead in quite a rational way to a spiritual view of the world. An attempt to identify the nature of consciousness in a clear way will be made, and the concepts so formed will then be applied in four stages to indicate the path. An aim for science will be suggested, also related to its various roles in human society.

I What is the nature of conscious beings?

A basic thesis which is proposed here is that the presence of a conscious being manifests itself by *something which another being cannot control.* If there was only one being in the world, it could in principle decide everything, as nothing else could have the desire and the ability to thwart it.

This statement can be made in a more precise way for certain conscious beings at least. In order to produce a desired situation, a being needs both knowledge and the ability to act; with only one of these it would be impossible to produce a desired result. The being must know both the results of different possible acts as well as be able to make them. Suppose one wishes to arrange objects in a regular pattern; one needs both to know the result of putting a particular object in a certain place, as well as have the ability to move it. Similarly if one wishes to divide an object such as a cake into a number of equal parts, one needs to both know the effect of any particular cut, and be able to make the cut. This kind of reasoning suggests that in the simplest possible situation the attractiveness of a desired result D is proportional to the amount of knowledge K multiplied by the ability to act A. In a case where the amount of knowledge is proportional to the exactness of a kind of measurement, and the ability to act proportional to the exactness with which one can act, the attractiveness of the result is proportional to the multiple of the two kinds of exactness. This simplest situation will be seen presently to be relevant for "dead matter", but of course more complex situations can exist where such a simple mathematical expression is not appropriate. In slightly less simple cases however the attractiveness of a result D might not increase if the multiple of K and A was larger than a certain value, while in yet another case D might be proportional to the sum of different multiples K times A.

If a second being is present, and does not want a result desired by the first one, and cannot change the desires of the latter, it can either act to reduce the first being's knowledge, or its ability to act, or both. Hence the presence of other beings when they only resist, can produce limits to K and A. Other kinds of relationship between different

beings are possible. One may wish to use another and increase its knowledge and ability to act in a restricted way, so as to acquire an advantage. In *love* however the basic aims of one are also aims of the other one, who therefore wishes the increase of the knowledge and ability to act of the former.

It must be emphasized that knowledge and ability to act may not be present in the same way as for human beings, but can also have "higher", "lower", or different forms. A dog knows its master; this is clearly not the same kind of knowledge as the abstract knowledge of a scientist.

Knowledge, the attractiveness of a result, and the ability to act, are clearly related to thought, feeling, and will. Knowledge can be considered a result of perception combined with thought, though in the case of an animal for instance, this process need not be entierly due to the animal itself. Other beings such as "group souls" can be present. Attractiveness is related to present feeling, while the ability to act preceeds an act of will. Therefore one can say that there is a relationship between knowledge, the attractiveness of a result, and the ability to act; and the three basic abilities of the soul. However it may be noted that all these abilities may not be directly associated with an organism perceived by the senses such as a plant or an animal. Other "elemental" beings for instance may also be present.

There is also a relation between the three abilities of the soul and the nature of time. Knowledge is related to the past, attractiveness to the present, and the ability to act to the future. However knowledge need not necessarily be the same as "memory" but can be something more general.

Let us now try to find conscious beings with the characteristics considered here in the world.

II The realm of "dead matter".

A major revolution occurred in physics during the early decades of this century. The concepts of classical physics were replaced by those of relativity and especially by those of the quantum theory. In particular nature was found to be not completely determinate.

In classical physics which can be considered to have been founded by Galileo and Newton, one can predict the evolution of a physical system if one knows the initial conditions. Such a system can be considered as made up of particles, each of which has a position, a velocity, and a mass. If the positions and velocities are known at any one time, future movements are determined by the forces between the particles. When the forces are only gravitational as is approximately the case for the motions of the planets, the physics (though not the mathematics) is fairly simple. Other forces such as those of electromagnetism exist however, and need to be taken into account. The existence of other forces can according to such conceptions, be for instance responsible for the mechanical properties of a body consisting of many particles. Nevertheless the presence of such forces does not change the principle of determinism, and predictions can be made based on knowledge of the initial conditions.

In order to know the initial conditions measurements need to be made. Modern science is that of the onlooker, who tries as little as possible to interfere with the phenomena he studies. He relies on "objective" measurements made by instruments observed by him, and is suspicious of the scientific value of his own experiences. In fact one may say that the onlooker studies interactions between physical phenomena and his instruments, that is between matter and matter. This approach is clearly far removed