

Hand. Doch gibt es viele fruchtbare Bemühungen, die vielleicht – obwohl weniger spektakulär als Gewichtsveränderungen und «Wirksamkeiten» – der Sache eher gerecht zu werden vermögen als die distanzschaffende Methode des Messens und Wiegens.

In diesem Sinne zeigt die Schrift von St. B. deutlich, wo die «Erkenntnisgrenzen» liegen. Fruchtbare Bemühungen um eine Einsicht in das Lebendige finden nicht in Vermehrung der dargestellten Experimente ihren Ausdruck, sondern im Ernst des denkenden Umganges mit den konkreten Erscheinungen von Pflanzen und Tier.

Johannes Wirz

Can the World of Quantum Physics Teach Us Something About the Trinity?

In this short article I shall do something rather risky. There is a story about the great medical teacher Alain de Lille, called «Doctor universalis». He was walking on the banks of the Seine in Paris in 1168 the day before he was due to talk about the Trinity. He saw a small boy, who was trying to put all the water of the Seine into a small hole. When Alain de Lille told him that what he was trying to do was impossible, the boy replied that it was also impossible to speak about the Trinity. According to the story Alain de Lille was so moved, that he abandoned teaching the following day ... What I shall do is to indicate what appears to be a connection between two fields, which are normally thought to be widely separated. After briefly summarizing conclusions in previous articles of mine about the nature of quantum physics, reasons for believing in such a connection will be indicated.

The world studied by modern physics is a world of the interaction of physical phenomena with instruments of measurement, that is between matter and matter. A long road has been followed in the history of physics, which has brought it into a world very far from direct human experience. It is in this world that quantum mechanics must be invoked, when events over very small distances or involving very small energy differences are considered. As I have endeavoured to show for instance in the article «Towards a Spiritualized Science Concerned with the Beings Around Us» («Elemente der Naturwissenschaft» no 41, page 35, 1984 and «Science Forum» no 6, page 10, 1986), we can begin to at least partly understand the nature of quantum mechanics, by considering that it studies a domain where elementary conscious beings exist. It was reasoned that consciousness exists everywhere in the universe and when more than one conscious being exists, it cannot completely predict or control the activity of other beings. However in the domain of quantum mechanics, the different beings resist each other. What would correspond for human beings to feeling, has there become a constant of physics! In fact it is possible to conclude that it is an inhuman almost «dead» world; such a world without human feelings is in the language of anthroposophy that of a being called Ahriman, who is one of the adversaries of Man. In this world we can say that conscious-

ness has been modeled by him. We can also understand this world containing quantum mechanics, if it is thought to be a world *below* Nature as experienced by humans, that is a world of sub-nature. That world partakes in and acts in the world of human experience. Indeed the world perceived by incarnated Man and where he acts, then can be conceived of as being between higher worlds and that of sub-nature.

Nevertheless, Ahriman is not a creator. He may be thought of as a dragon who has corrupted things, but even in this corruption a reflection should still exist of creation. In addition modern Man must fight this dragon, but if he is strong enough to win, he can as in certain legends, obtain as a reward the treasure guarded by the dragon. Before proceeding further let certain arguments be recalled. In the domain of quantum mechanics there is a certain amount of indeterminacy. Classical physics, which was known before the discovery of quantum theory, was deterministic; when enough sufficiently precise measurements had been made of a physical system, it was at least in the principle possible using known laws to predict its future (in fact it is now known that even according to classical physics, what will happen to certain types of system is extremely sensitive to their physical conditions, so such systems are in practice unpredictable). According to the Heisenberg indeterminacy principle of quantum physics, it is in principle impossible to make all the necessary measurements with infinite precision and at least according to the orthodox interpretation of this situation, all the quantities to be measured do not even exist with such a precision. In fact a physicist can only predict *probabilities* of certain types of event occurring. As a result of Heisenberg's principle it is not possible to determine with more than a certain accuracy the position of a particle multiplied by its momentum and so according to the orthodox interpretation mentioned, these quantities do not even exist with more than that precision. The same is true for simultaneous measurements of energy and time. One way of stating the last result is

$$\frac{1}{\Delta t} \cdot \frac{1}{\Delta E} \leq \frac{2\pi}{h}$$

where Δt is the limit to the precision with which time t can be measured, ΔE the limit to the precision with which energy E can be measured and h is the fundamental constant of physics called Planck's constant. This expression can according to the reasoning of my previous writings be understood as due to the resistance between very elementary conscious beings associated with or behind a studied phenomenon and those associated with the instrument of measurement. One being limits something corresponding in a primitive way to the quantity of relevant knowledge needed before acting to produce a result ($1/\Delta t$) and the ability to act precisely enough to produce this result (corresponding in a primitive way to $1/\Delta E$, remembering the significance of energy in elementary physics) of any other similar being. The desirability of any result which can be produced by such a being for it, proportional for a being of this type to this quantity of knowledge it possesses, multiplied by its ability to act (desirability is something which for Man would be connected with his feelings) is limited by the other similar beings with different desires, to not exceeding the constant $2\pi/h$. This resistance also explains fundamental properties of atoms as conceived of in today's science. In addition it should also be