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**Hypothesis Concerning Soul Substance Together
with Experimental Evidence of The Existence of Such
Substance**

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If personal continuity after the event of bodily death is a fact, if the psychic functions continue to exist as a separate individuality or personality after the death of brain and body, then such personality can only exist as a space occupying body, unless the relations between space objective and space notions in our consciousness, established in our consciousness by heredity and experience, are entirely wiped out at death and a new set of relations between space and consciousness suddenly established in the continuing personality. This would be an unimaginable breach in the continuity of nature.

It is unthinkable that personality and consciousness continuing personal identity should exist, and have being, and yet not occupy space. It is impossible to represent in thought that which is not space-occupying, as having personality; for that would be equivalent to thinking that nothing had become or was something, that emptiness had personality, that space itself was more than space, all of which are contradictions and absurd.

Since therefore it is necessary to the continuance of conscious life and personal identity after death, that they must have for a basis that which is space-occupying, or substance, the question arises has this substance weight, is it ponderable?

The essential thing is that there must be a substance as the basis of continuing personal identity and consciousness, for without space-occupying substance, personality or a continuing conscious ego after bodily death is unthinkable.

According to the latest conception of science, substance, or space-occupying material, is divisible into that which is gravitative, solids, liquids, gases, all having weight, and the ether which is nongravitative. It seemed impossible to me that the soul substance could consist of the ether. If the conception is true that ether is continuous and not to be conceived of as existing or capable of existing in separate masses, we have here the most solid ground for believing that the

soul substance we are seeking is not ether, because one of the very first attributes of personal identity is the quality of separateness. Nothing is more borne in upon consciousness, than that the ego is detached and separate from all things else - the nonego.

We are therefore driven back upon the assumption that the soul substance so necessary to the conception of continuing personal identity, after the death of this material body, must still be a form of gravitative matter, or perhaps a middle form of substance neither gravitative matter or ether, not capable of being weighed, and yet not identical with ether. Since however the substance considered in our hypothesis is linked organically with the body until death takes place, it appears to me more reasonable to think that it must be some form of gravitative matter, and therefore capable of being detected at death by weighing a human being in the act of death.

My first subject was a man dying of tuberculosis. It seemed to me best to select a patient dying with a disease that produces great exhaustion, the death occurring with little or no muscular movement, because in such a case the beam could be kept more perfectly at balance and any loss occurring readily noted.

The patient was under observation for three hours and forty minutes before death, lying on a bed arranged on a light framework built upon very delicately balanced platform beam scales.

The patient's comfort was looked after in every way, although he was practically moribund when placed upon the bed. He lost weight slowly at the rate of one ounce per hour due to evaporation of moisture in respiration and evaporation of sweat.

During all three hours and forty minutes I kept the beam end slightly above balance near the upper limiting bar in order to make the test more decisive if it should come.

At the end of three hours and forty minutes he expired and suddenly coincident with death the beam end dropped with an audible stroke hitting against the lower limiting bar and remaining there with no rebound. The loss was ascertained to be three-fourths of an ounce.

This loss of weight could not be due to evaporation of respiratory moisture and sweat, because that had already been determined to go on, in his case, at the rate of one sixtieth of an ounce per minute, whereas this loss was sudden and large, three-fourths of an ounce in a few seconds.

The bowels did not move; if they had moved the weight would still have remained upon the bed except for a slow loss by the evaporation of moisture depending, of course, upon the fluidity of the feces. The bladder evacuated one or two drams of urine. This remained upon the bed and could only have influenced the weight by slow gradual evaporation and therefore in no way could account for the sudden loss.

There remained but one more channel of loss to explore, the expiration of all but the residual air in the lungs. Getting upon the bed myself, my colleague put the beam at actual balance. Inspiration and expiration of air as forcibly as possible by me had no effect upon the beam. My colleague got upon the bed and I placed the beam at balance. Forcible inspiration and expiration

of air on his part had no effect. In this case we certainly have an inexplicable loss of weight of three-fourths of an ounce. Is it the soul substance? How other shall we explain it?

My second patient was a man moribund from tuberculosis. He was on the bed about four hours and fifteen minutes under observation before death. The first four hours he lost weight at the rate of three-fourths of an ounce per hour. He had much slower respiration than the first case, which accounted for the difference in loss of weight from evaporation of perspiration and respiratory moisture.

The last fifteen minutes he had ceased to breathe but his facial muscles still moved convulsively, and then, coinciding with the last movement of the facial muscles, the beam dropped. The weight lost was found to be half an ounce. Then my colleague auscultated the heart and found it stopped. I tried again and the loss was one ounce and a half and fifty grains. In the eighteen minutes that lapsed between the time he ceased breathing until we were certain of death, there was a weight loss of one and a half ounces and fifty grains compared with a loss of three ounces during a period of four hours, during which time the ordinary channels of loss were at work. No bowel movement took place. The bladder moved but the urine remained upon the bed and could not have evaporated enough through the thick bed clothing to have influenced the result.

The beam at the end of eighteen minutes of doubt was placed again with the end in slight contact with the upper bar and watched for forty minutes but no further loss took place.

My scales were sensitive to two-tenths of an ounce. If placed at balance one-tenth of an ounce would lift the beam up close to the upper limiting bar, another one-tenth ounce would bring it up and keep it in direct contact, then if the two-tenths were removed the beam would drop to the lower bar and then slowly oscillate till balance was reached again.

This patient was of a totally different temperament from the first, his death was very gradual, so that we had great doubts from the ordinary evidence to say just what moment he died.

My third case, a man dying of tuberculosis, showed a weight of half an ounce lost, coincident with death, and an additional loss of one ounce a few minutes later.

In the fourth case, a woman dying of diabetic coma, unfortunately our scales were not finely adjusted and there was a good deal of interference by people opposed to our work, and although at death the beam sunk so that it required from three-eighths to one-half ounce to bring it back to the point preceding death, yet I regard this test as of no value.

My fifth case, a man dying of tuberculosis, showed a distinct drop in the beam requiring about three-eighths of an ounce which could not be accounted for. This occurred exactly simultaneously with death but peculiarly on bringing the beam up again with weights and later removing them, the beam did not sink back to stay for fully fifteen minutes. It was impossible to account for the three-eighths of an ounce drop, it was so sudden and distinct, the beam hitting the lower bar with as great a noise as in the first case. Our scales in the case were very sensitively balanced.

My sixth and last case was not a fair test. The patient died almost within five minutes after being placed upon the bed and died while I was adjusting the beam.

In my communication to Dr. Hodgson I note that I have said there was no loss of weight. It should have been added that there was no loss of weight that we were justified in recording.

My notes taken at the time of experiment show a loss of one and one-half ounces but in addition it should have been said the experiment was so hurried, jarring of the scales had not wholly ceased and the apparent weight loss, one and one-half ounces, might have been due to accidental shifting of the sliding weight on that beam. This could not have been true of the other tests; no one of them was done hurriedly.

My sixth case I regard as one of no value from this cause. The same experiments were carried out on fifteen dogs, surrounded by every precaution to obtain accuracy and the results were uniformly negative, no loss of weight at death.

A loss of weight takes place about 20 to 30 minutes after death which is due to the evaporation of the urine normally passed, and which is duplicated by evaporation of the same amount of water on the scales, every other condition being the same, e.g., temperature of the room, except the presence of the dog's body.

The dogs experimented on weighed between 15 and 70 pounds and the scales with the total weight upon them were sensitive to one-sixteenth of an ounce. The tests on dogs were vitiated by the use of two drugs administered to secure the necessary quiet and freedom from struggle so necessary to keep the beam at balance.

The ideal tests on dogs would be obtained in those dying from some disease that rendered them much exhausted and incapable of struggle. It was not my fortune to get dogs dying from such sickness.

The net result of the experiments conducted on human beings, is that a loss of substance occurs at death not accounted for by known channels of loss. Is it the soul substance? It would seem to me to be so. According to our hypothesis such a substance is necessary to the assumption of continuing or persisting personality after bodily death, and here we have experimental demonstration that a substance capable of being weighed does leave the human body at death.

If this substance is a counterpart to the physical body, has the same bulk, occupies the same dimensions in space, then it is a very much lighter substance than the atmosphere surrounding our earth which weighs about one and one-fourth ounces per cubic foot. This would be a fact of great significance, as such a body would readily ascend in our atmosphere. The absence of a weighable mass leaving the body at death would of course be no argument against continuing personality, for a space-occupying body or substance might exist not capable of being weighed, such as the ether.

It has been suggested that the ether might be that substance, but with the modern conception of science that the ether is the primary form of all substance, that all other forms of matter are

merely differentiations of the ether having varying densities, then it seems to me that soul substance which is in this life linked organically with the body, cannot be identical with the ether. Moreover, the ether is supposed to be nondiscontinuous, a continuous whole and not capable of existing in separate masses as ether, whereas the one prime requisite for a continuing personality or individuality is the quality of separateness, the ego as separate and distinct from all things else, the nonego.

To my mind therefore the soul substance cannot be the ether as ether; but if the theory that ether is the primary form of all substance is true, then the soul substance must necessarily be a differentiated form of it.

If it is definitely proved that there is in the human being a loss of substance at death not accounted for by known channels of loss, and that such loss of substance does not occur in the dog as my experiments would seem to show, then we have here a physiological difference between the human and the canine at least and probably between the human and all other forms of animal life.

I am aware that a large number of experiments would require to be made before the matter can be proved beyond any possibility of error, but if further and sufficient experimentation proves that there is a loss of substance occurring at death and not accounted for by known channels of loss, the establishment of such a truth cannot fail to be of the utmost importance.

One ounce of fact more or less will have more weight in demonstrating the truth of the reality of continued existences with the necessary basis of substance to rest upon, than all the hair-splitting theories of theologians and metaphysicians combined.

If other experiments prove that there is a loss of weight occurring at death, not accounted for by known channels of loss, we must either admit the theory that it is the hypothetical soul substance, or some other explanation of the phenomenon should be forthcoming. If proved true, the materialistic conception will have been fully met, and proof of the substantial basis for mind or spirit or soul continuing after the death of the body, insisted upon as necessary by the materialists, will have been furnished.

It will prove also that the spiritualistic conception of the immateriality of the soul was wrong. The postulates of religious creeds have not been a positive and final settlement of the question.

The theories of all the philosophers and all the philosophies offer no final solution of the problem of continued personality after bodily death. This fact alone of a space occupying body of measurable weight disappearing at death, if verified, furnishes the substantial basis for persisting personality or a conscious ego surviving the act of bodily death, and in the element of certainty is worth more than the postulates of all the creeds and all the metaphysical arguments combined.