

Immaterialism.

Words may change their meaning. The one which is the title of this paper may serve as an example. It used to mean a philosophical tendency to deny the reality of matter, (for instance Berkeley). It now often means a form of art which results in images without material support, (for instance holograms). But there must be something in common to those two meanings. If not, why use the same word? It must be possible to extirpate that common nucleus out from those two widely different meanings. And that nucleus will have something to do with the concept "matter". Now if one succeeded in doing this, one would have opened an access to the understanding of the cultural revolution we are witnessing. Because "matter" is obviously a basic concept of our culture, and if it has shifted its meaning, the entire edifice of culture will be shaken. This paper will try to show this.

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Concepts must be defined, if they are to have a meaning. They must be distinguished from other concepts. For instance: the concept "table" can be defined by distinguishing it from the concept "chair". It then becomes operative. One may, for instance, construct a wider concept, namely "furniture", and have it cover the two original concepts. Or one may construct a grey zone between "table" and "chair", in which both concepts apply, and one may install for instance a specific sort of school furniture within that grey zone. Now with the concept "matter" those operations will not work, and for a curious reason. Our tradition defines "matter" with regard to two other concepts namely "spirit" and "form". But it does so "dialectically", meaning that the two concepts defined with regard to each other contradict each other. Thus "matter" is either defined as "object of spirit", or as "contents of form", and, inversely, "spirit" is defined as "the subject of matter", and "form" is defined as "container of matter". Now such negative definitions do not permit operations. Neither a wider concept, nor a grey zone between concepts can be constructed. It is as if we had defined "table" as an "anti-chair" and "chair" as an "anti-table". This type of clumsy concept is called a "metaphysical"

one, and although it might be elegant, it is not very useful.

Non-western cultures do not seem to be troubled with this sort of metaphysical scruples, as far as the concept "matter" is concerned. For instance| they quite happily construct a grey zone between "matter" and "spirit", which they fill with thin matter or thick spirit of the type "ghost", or "angel", or "astral body", and they even photograph those phantoms. Of course: this intermediate population exists in the West just as well as elsewhere, but with us it is considered either as a remnant of a primitive and almost extinct race, or as illegal immigration. Because we, the true heirs to the ancient Jews and Greeks, do not permit any spiritualisation of matter or materialisation of spirit. For us, those are opposite concepts, and an abyss separates them.

Yes, but: if "spirit" means "subject (of matter)", and "matter" means "object (of spirit)", what happens if I think about "spirit"? Does it not become an "object of spirit", and thus a curious kind of "matter"? For instance, as with Descartes, a "res cogitans", a "thinking thing"? And, it being a "thing", must it not be located somehow somewhere at some moment? Which of course will result in such funny problems as the one which searches for the "seat of the soul". And if one pursues this quest further into the direction of elegant spiritism, one will finally come up against thta even more funny problem concerning the "immortality of the soul" .

An even more impressive example for the troubles we are in when trying to operate with the concept "matter": "Spirit" contradicts "matter" and this contradiction manifests itself as "work". The result of which is "culture". Therefore the cultural objects are materialized spirit and spiritualized matter, although not quite in the sense which extra-occidentals mean when talking of phantoms. Which shows that metaphysical concepts are not very comfortable.

Of course: this Gordian knot may be easily cut through: either by denying the "reality" of "matter," (immaterialism in the old sense), or of "spirit," (radical materialism). But this is not a very clever method.

It leaves "matter" and "spirit" undefined, and thus without meaning. To say that "everything is matter, (or spirit)", is just as meaningful as is a cock's crowing. We must try other ways out, and science is trying to do s

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Science developed from philosophy like a butterfly from its cocoon, and what was discussed up to here was that empty shell science has left behind it. Nonetheless, science could not but inherit the concept "matter" from philosophy, because this is a basic concept. And it did not very well know what to do with that clumsy concept, except to try and measure it. Thus it invented the concept "mass", which is not very comfortable either, but which at least permits to pose the question of the structure of matter. The result although not very helpful, if the overcoming of metaphysics is the aim, is, to say the least, surprising.

"Matter" now looks very much like a series of Russian dolls, one containing the others. The biggest doll is astronomical, (einsteinian), it contains the molecular doll, (newtonian), which contains the atomic doll, (where mass and energy merge), which again contains the nuclear doll, (where causality abdicates in favor of statistics), which again contains the particle doll (which poses curious problems of symmetry), and the smallest doll is the quark doll, (where it is difficult, even meaningless, to distinguish between phenomenon and mathematical symbol). Now this does not sound very helpful, except for the big surprise which is this: whatever philosophy says concerning "matter" relates exclusively to the molecular level. On all other levels it is nonsense to say that "matter" is an "object of spirit" or a "contents of form

Thus all the eternal problems of philosophy with matter, like the problem of the immortality of the soul, or the materialisation of the spirit through commitment to culture, are shown to be molecular problems. At first sight, this does not sound very stunning. Do we not live on the molecular level, its dimensions being ours, (our bodies are measured in centimeters, and our age in seconds)? All the other levels of matter are existentially

immeasurable for us, and do not concern us. The eternal problems of philosophy are thus our problems, and nothing science may say can change this, Science is incompetent for this sort of problems.

At second sight however all this becomes untrue. We do not live exclusively within the centimeter/second dimension. Processes go on within our brain and our nervous system which have altogether different dimensions. Particles enter those systems, they jump quantically between the nerve synapses, and they are being processed there. And we experience this as perception, imagination, wishing, thought, decision making. We live concretely just as much on the levels of particles as we live on the molecular level. Which gives rise to a curious suspicion: what if "spirit" were the name we give "matter" on the level of particles, and what if "matter" were the name we give "spirit" on the molecular level? This might not sound like a very original suspicion, (it sounds like spiritism), but unlike spiritism it permits technical experimentation.

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Until recently, all expeditions which men undertook into the various levels of matter started from the molecular level. Democrit left it in search of atoms, Aristotle in search of the stars, and science continued to do so, although it organized the expeditions a little bit more carefully. This is changing. We now witness expeditions coming from the level of particles which invade the molecular level as if from below. Things like thermonuclear power stations, computers, robots, or electromagnetic images are particles invading our molecular level. They explode our eternal problems. It is nonsense to say of a thermonuclear plant that it spiritualizes matter. Of a computer, that it is a materialized spirit. Of a robot, that it decides and acts upon decisions. Or of a TV image that it is a pure, platonic form. All such metaphysical formulations fail, where such particle invasions are concerned. Instead, it becomes possible to experiment with this sort of processes, which are of the order of magnitude which our brain inhabits.

The so-called "artificial intelligences" may serve as examples for this transition from metaphysics to technical experimentation. They are rudimentary simulations of a few brain functions. Neurophysiology has not advanced very far into the secrets of the brain, but far enough to permit those simulations. This is not surprising: paleolithic man did not need a well elaborated theory of mechanics to simulate a few functions of his arm and invent the lever. Of course: it would be an exaggeration to call a lever an "artificial arm". Just as it is an exaggeration to call our crude simulation of brains "artificial intelligences". Still: the lever is the ancestor of all machines, and machines have not only taken over most of the muscular body functions, but have by far exceeded the mechanical capacities of the body. We are, as far as our intellectual capacities are concerned, in the stage of the lever.

Now those crude simulations show that much of what philosophy, (and theology), used to consider "spirit", (like logical reasoning or decision making), can be performed by apparatus. Thus "spirit" is beginning to escape from its imprisonment within the skull, and may be observed as if from outside. The fogs of philosophy, theology, psychology and other ideologies which envelop it are lifting. We shall have to think everything concerning "spirit" all over.

Another such invasion of particles into the molecular level are the electromagnetic images, and they, too, oblige us to re-think the eternal problems. But with them, it is not the dialectics "matter-spirit" which is in question, but the dialectics "matter-form". This must be considered.

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There is a curious myth which sustains Occidental thought in this respect, and what it says is this: In the beginning, (whatever that may mean), there was a formless soup called "matter", and over it hovered empty forms, (sometimes called "ideas"). The forms somehow dipped into matter like spoons and filled themselves, and this is called "creation". Now although

this myth is unbelievable, it is deeply rooted within us. Were we to give it up, we would have given up Judeo-Christianity and the Greek belief that the universe has a mathematical structure. We would also have given up the endless quarrel between "materialism" and "idealism". But we will have to give it up, in the face of what science is saying.

It says that the universe is a process of ever more uniform distribution of the particles it is composed of. It tends toward total loss of form. In fact, this tendency toward loss of form may be taken as a measure of the age of the universe as a whole, and of every phenomenon therein, (example: the carbon test). The equations which permit this measuring are those of the second principle of thermo-dynamics. Now what those equations mean is that everything tends to become ever more probable, and that what we call the "universe" is an improbable, transitory stage of a process. Thus what we call "matter" is an improbable form of energy, and it will decay into uniformly distributed heat, ("thermic death"). Thus "matter" and "form" come to mean the same thing, namely a transitory and improbable stage of energy distribution.

What is surprising in this is not so much that the ancient dialectic "matter-form" has lost its meaning. Even more surprising is the central position which the concept "probability" is taking. It has something to do with games, with chance, with luck, with accidents, in short: with dice. The universe appears as a kind of blind game, which will result in the end in the exhaustion of all its chances, (zero-sum-game), but in the course of which accidents may occur, unforeseeable situations. And it is these accidents, those strokes of luck, which concentrate our attention. The equations of the second principle of thermodynamics, which measure the tendency toward the ever more probable, may be turned around, and they will then point toward the improbable, the accidental. This turning around has been achieved by the theory of information. And the electromagnetic images may be considered to be results of this theoretical understanding of "information".

What one sees, if one looks at those images like videoclips, holograms, or sythetized images on computer screens, are highly improbable configurations of particles like photons. Those improbable configurations have not come about by blind chance, (as they do for instance in genetic information), but by human deliberation. They are the result of deliberate inversion of the universal tendency toward uniform distribution. He who produces them plays with chance against chance, he plays against the blind g of "nature". This may be seen in every immaterial image, but with synthetic images the strategy used in this game against game is clearest. It is the strategy of computation. And this is precisely what the term "immaterialism" has come to mean: a deliberate play with particles, so that they may acquire improbable forms, that they may become "informations", using the strategy of computation.

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One may now try to see how far this paper has succeeded in uncovering the common nucleus in the two meanings of the term "immaterialism". When first used, the word stood in a cultural context where "matter" was either defined as "object of spirit", or as "contents of forms". Those definitions are no longer useful. As it is now being used, the word stands in a cultural context where both "matter" and "spirit" must be thought of as improbable "forms" of what may be called "energy", (which is a term which defies definition). No doubt: we have come up against a profound cultural revolution. The very pillars of Occidental culture, "matter", "spirit" and "form", have fallen. But we have by no means overcame metaphysics. We have de-mythified those three pillars, but mystery now envelops the concepts of "energy" and "probability" instead. If one throuws out metaphysics through the door, it comes back through the window.

Still: the future "immaterial" culture, the culture of "pure information", will be almost completely different from ours. And it is this which is suggested by the shift in the meaning of the word "immaterialism".