Subtle energies or subtle matters?

A conceptual clarification

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ABSTRACT: The concept of energy is central in all of modern science, and is obviously of great importance also in the study of the psychoenergetic phenomena. However, both among conventional physicists and less conventional researchers of parapsychic phenomena, there still is some confusion about a proper understanding of this concept. The purpose of the present article, mainly educational in nature, is to provide a correct interpretation of the concept of energy, and of its transport in the different physical systems. This is in order to facilitate the formulation of scientifically well-posed questions, especially in the study of the energetic dynamics associated to the still controversial subtle paramatters.

INTRODUCTION

Energy is a fundamental concept, not only for conventional researchers, who calculate and measure its exchanges between different physical systems in laboratories of chemistry, physics and biology, but also for the less conventional self-researchers, that is, for that class of scholars who investigate the psychoenergetic phenomena, i.e., the mysterious "subtle forms" of energy[1], also called, depending on the context, bioenergies, consciential energies, extraphysical energies, prana, chi, orgone, etc. (Tiller, 1993), (Zamperini, 1998), (Abs de Lima, 2005), (Bruce, 2007), (Sassoli de Bianchi, 2009a).

These energies would be at the origin of so-called anomalous or paranormal phenomena, such as *psychokinesis* (PK), spiritual healing, remote viewing, and more generally of the multiple

[1] As you will discover from reading this article, the concept of "form of energy" is misleading. This is why the term is in quotes.

manifestations of the consciousness beyond the limits of the physico-biological body (Vieira, 2002).

The writer has a foot in both camps, being both a theoretical physicist, namely a researcher in the most conventional sense of the term, and a self-researcher, who is also dedicated to teaching and self-experimenting with these non ordinary "forms" of energy, whose reality still remains entirely hypothetical in the academic world.

Based on this twofold perspective, I can say without hesitation that there are many confusions, both on the part of conventional researchers, about the nature of the (for them only hypothetical) "subtle energies," and on the part of the non conventional self-researchers, about a proper understanding of the basic concept of *energy*, and its possible application in the description of the parapsychic phenomena, governed by human intentionality.

The purpose of this article is to provide a sort of conceptual map, of an elementary level, on the crucial issue of energy, so that those who today are interested (as students, teachers and/or researchers) in "subtle energies," will be able to operate those important distinctions without which it will be hardly possible to clarify, both theoretically and experimentally, such a vast and delicate subject.

The term "subtle energy," as it will become clear from reading this article, is inappropriate. This is so not so much because the adjective "subtle" might be misleading in some cases, its meaning being only metaphorical, but mainly because *it makes no sense to qualify energy, since there is one and only one form of energy, and not different forms of energy*.

It should be noted that many investigators today working in the field of inner research who are involved in the study of psychoenergetic phenomena, do not necessarily possess a specific culture in the field of physics. So, of course, a certain level of confusion stems from an insufficient understanding of this fundamental branch of knowledge.

This will produce some basic confusion, such as mixing up, for example, the concept of *force* with that of *energy*. Here, then, some people will speak, in an erroneously interchangeable way, of "vital force" and "vital energy." Strictly speaking, however, if "force" and "energy" are different *physical quantities*, it is certainly desirable also to distinguish the related concepts of "vital force" and "vital energy," and possibly explain in what they would differ, so much as to deserve different names.

On the other hand, I have personally been able to ascertain that a lot of confusion is sometimes conveyed also by researchers

with a more solid scientific background, if not by physicists. In this case the confusion is obviously more subtle, as no longer is it attributable to a lack of specific knowledge about the subject, but rather to an insufficient reflection about its conceptual foundations.

Unfortunately, in physics, as in the evolution of biological systems, some real "living fossils" exist, that despite their age mysteriously continue to replicate (Hermann & Job, 1996). These fossils may become formidable obstacles, especially when certain basic concepts must be applied to new fields of investigation, whose phenomenology is still unstable and difficult to demarcate, as is the case of psychoenergetics, and this the more so when many of the researchers working in these fringe areas have a modest scientific background.

I thus believe that the conceptual clarification proposed in this work, despite being truly elementary, can be very advantageous, not only to those who are totally ignorant of physics, but also to those who, despite having a more solid scientific culture, or a very solid one, have never thought deeply, or deeply enough, about the content of certain basic notions, like the one of *energy* and of its exchange mechanisms.

In the discussion I will almost totally avoid the use of mathematical formulas, in order not to discourage those readers who still maintain to this day, unfortunately, a strong idiosyncrasy toward formal languages, even though these are obviously needed to express with the necessary precision certain concepts and their relations. On the other hand, for completeness, I will present a simple mathematical relation in the Appendix.

The article is structured as follows: I will start by presenting what are the basic concepts that it is important to know, and to distinguish, in relation to the theme of energy and, more particularly, in relation to its flow between different physical systems. I will try above all to clarify the difference between *material substances* and *immaterial substances*, between *energy* and *energy carriers*, highlighting some of the most pernicious confusions. To facilitate the understanding, I will make use of many elementary examples.

Thanks to this conceptual clarification, I will then address a few well-posed questions, in relation to the theme of psychoenergetics, i.e., of the exchanges of so-called "subtle energies." I will explain also why many historical terms of physics, and consequently many neologisms of conscientiology, are inappropriate, in the sense of being potentially misleading,

and therefore should be avoided wherever possible (and replaced with more appropriate terms).

I will also spend a few words on the generalization of the concepts presented in the case where the behavior of the material substances under consideration is not classical (in a sense that I will make precise), but for example quantum, or quantum-like.

MATERIAL AND IMMATERIAL SUBSTANCES

Let us define some concepts as from the beginning. By the term of *material substance*, or simply of *matter* (not to be confused, as we shall see, with the concept of *mass*), I will refer in this article to the *substratum* of *physical entities*, i.e., to "the stuff physical entities are made of."

In order not to complicate too much the discussion at a conceptual level, in the following I will only consider material substances of a *classical* nature, i.e., matters having the special property of *being present at all times in our ordinary three-dimensional physical space* (I will say more about non-classical material substances, like quantum substances, later on).

A material substance must therefore be understood as an entity to which one can attribute certain *properties*, namely *physical properties*. Some of these properties will characterize the very identity of the substance, while others will determine its *state*, that is, its specific *condition*, at a given moment.

One of the main characteristics of (classical) physical entities is, as we have said, to be always present, that is "contained," in our *ordinary physical space* (for simplicity, I will hereafter simply use the term "space," meaning by it the ordinary three-dimensional space, which is only a small part of the totality of the physical space). This means that material substances can be contained in certain regions of space, and that it makes sense to speak of the *quantity of a given material substance* (or quantity of matter) present in a given region, as it also makes sense to speak of the flow of a material substance that enters and exits a given region of space, or the flow of a specific substance that is transferred from a physical entity to another.

Conceptually speaking, it is important to make a clear *ontological distinction* between two different categories: the category of *material substances*, and the category of *immaterial substances* (or theoretical substances, abstract substances, etc.). This distinction between "material substances" and "immaterial substances" has to do with the distinction between "material substances" and the "properties of material substances."

Let me explain: we can generally say that a substance has or has not a particular property. For example, the material substance "wood" has the property of "being burnable," but does not possess the property of "being a good electrical conductor." There are however particular classes of properties that certain substances may possess not only *qualitatively* (in the sense of having or not having them), but also *quantitatively*, in the sense that they can possess a certain *quantity* of them, which may vary depending on circumstances.

In other words, these are properties that can be described in terms of *content*, and therefore behave *as if* they were material substances, although in fact they are not, being instead *properties of material substances*. One could say that they are *substance-like* properties, since they behave similarly to material substances, even if they aren't such.

Energy is perhaps the most typical, and certainly one of the most important, examples of an immaterial substance. Material substances do in fact possess energy (material substances without energy are not known), and they can possess a variable amount of it, i.e., they are able to *contain* a more or less considerable amount of the substance-like property "energy", depending on their state and context. Also, akin to a material substance, energy can *flow* (move, be transferred, etc.) from one spatial region to another, and more generally from one physical entity to another physical entity.

The same holds true for many other properties besides energy, which in physics are usually called *physical quantities*, such as *momentum* (either translational or angular), *electric charge* and *entropy*, to name only the better known ones.

Some immaterial substances, such as energy, linear momentum, angular momentum and electric charge, are *conserved* quantities. This means that they can neither be created nor be destroyed, but only transferred from one entity to another. And of course, they can also be stored within the different physical entities.

In other words, in the same way one can speak of the flow of a material substance, like *water*, for example from one container to another container, so it is possible to speak of the flow of energy from one system to another, or of the flow of momentum, electric charge, entropy, etc. However, these flows are associated – I repeat it once again, since it is an important point – to *immaterial substances*, whose behavior certainly resembles that of material substances, but this doesn't mean they have to be considered as such. It is indeed about a "flow of *properties* of material substances," and not a "flow of material substances."

Energy being a property of material substances, it is a sort of "supervening" aspect of our reality. It exists, so to speak, just because there is a universe of material substances that can carry it. Exactly as for the Italian language, which only exists because there are a number of different material supports allowing for its manifestation. But it cannot exist autonomously, regardless of these material supports. In other words, the existence of substance-like immaterial entities such as energy is bound to the existence of the material substances that support them.

Not all immaterial substances are however conserved. *Entropy* for example, can be created from nothing in a physical system, though it can never be destroyed (unless evidence to the contrary). On the other hand, material substances, depending on circumstances, can be conserved, created or destroyed.

A typical example is that of *chemical* or *nuclear reactions*, during which certain material substances are transformed into others, and there is therefore, during their course, a double process of creation-destruction. In other words, the *quantity of a specific material substance* is in general not conserved, and may therefore both increase or decrease in the course of a specific process.

ENERGY AND ENERGY CARRIERS

In this paper our interest is mainly directed to the immaterial substance called "energy," which as is well known is always conserved in physical processes, in the sense that the amount of energy contained in a given region of space may change *if and only if* a *current of energy* flows across the surface of that region. Similarly, the amount of energy contained in a physical entity can increase (decrease) *if and only if* such an entity absorbs (emits) energy, in an exchange with its external environment.

The *intensity of the energy current*, usually symbolized by the capital letter *P*, corresponds to what is conventionally referred to as the *power*. In general, the intensity of the current of a given substance (whether material or immaterial), equals the *quantity of substance that flows through a given area per unit time*. When the current is zero, this simply means that the substance remains stationary (with respect to a given referential), i.e., that it doesn't flow.

But let us consider now what are the modalities with which energy can flow, in general terms, from a physical entity to another physical entity. For this, it is necessary to distinguish 5 basic concepts (see the energy flow diagram of Figure 1):

1. The physical entity *source* of energy (*S*);
2. The physical entity *receiver* of energy (*R*);
3. The *material* substance (*M*) *carrier* of energy;
4. The *immaterial* substance (*I*) *carrier* of energy;
5. The immaterial substance *energy* (E).

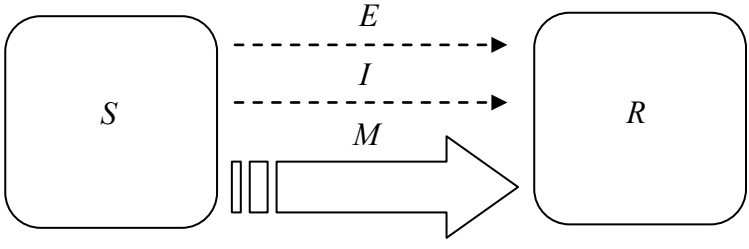

Figure 1. *Energy flow diagram*, schematically describing a process of transfer of energy *E* from a source *S* to a receiver *R*, using a material carrier *M* (indicated by a solid arrow) and an immaterial carrier *I* (indicated by a dashed arrow).

It is important to note that in a process of energy transfer between a source *S* and a receiver *R*, a material carrier *M* is necessarily always present. The following cases can however be distinguished:

- **A.** The material substance *M* flows from *S* to *R*, and it is the only substance carrying energy.
- **B.** The material substance *M* flows from *S* to *R*, but it isn't the only substance carrying energy, which is also carried by one or more immaterial substances.
- **C.** The material substance *M* doesn't flow from *S* to *R* (its current is zero), and energy is only carried by one or more immaterial substances.

To understand the reason for the distinction of these 3 cases, and especially the distinction between the immaterial substance "energy" and its carriers, which can be either material or immaterial substances, the best way to proceed is to consider some concrete examples, to illustrate the different mechanisms involved.

A FEW ILLUSTRATIVE EXAMPLES

Example 1 *(hand-ball-pins).* *S* is a hand, *R* consists of the pins placed on a bowling alley, *M* is a bowling ball, *I* is the momentum.

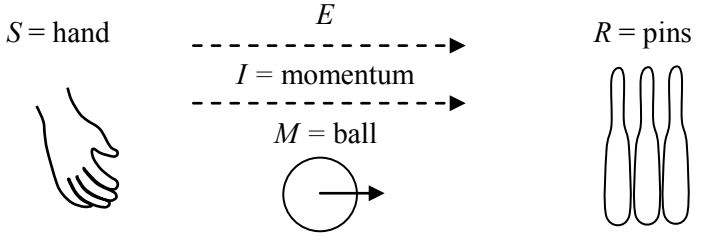

Figure 2. *Energy flow diagram*, schematically describing a process where a bowling player transfer energy from his/her hand to the pins, using for this the material carrier "ball" and the immaterial carrier "momentum."

More precisely, *S* communicates to the ball a certain *momentum*, and since a body in motion carries energy, by doing so it transfers to the ball a certain amount of energy. In other words, between *S* and *R* both a material substance (the stuff the ball is made of) and an immaterial substance (the momentum carried by the ball) flow. When the ball comes into contact with the pins, it transfers to them part of the momentum it carries, and in this way also part of its energy (putting them in motion).

The ball is therefore the material carrier of the momentum, and momentum is the immaterial carrier of the energy.

In this example, besides the presence of a current of energy and of momentum (two immaterial substances), there is also the presence of a current of matter: the substance the ball is made of, moving from the source to the receiver. (We are therefore in case B above).

Example 2 (*water-pump-motor*). *S* is a hydraulic gear pump; *R* is a hydraulic motor; *M* is the water that flows in a closed circuit from the pump to the motor; *I* is the momentum.

More precisely, through the rotation of its gears, the hydraulic pump communicates momentum to the water, putting it into circulation in the pipes. The (high pressure) water flowing in the

pipes confers part of its momentum, and therefore of its energy, to the motor gears, which are thus set in motion.

The water is therefore the material carrier of the momentum, and momentum is the immaterial carrier of the energy.

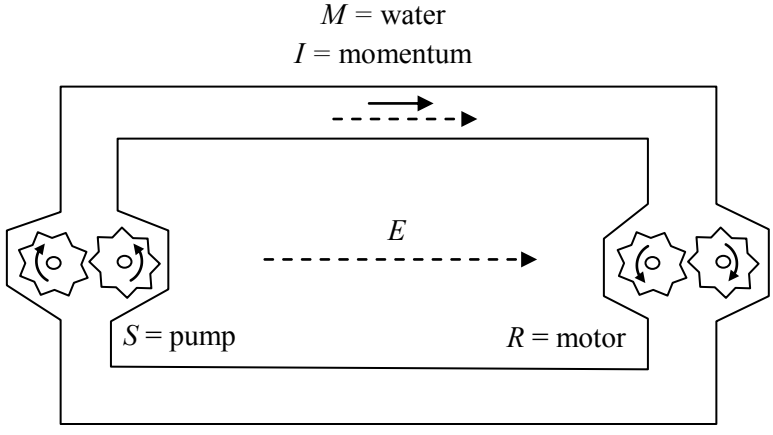

Figure 3. *Energy flow diagram*, schematically describing a process where a pump transfers energy to a hydraulic motor, using for this the material carrier "water" and the immaterial carrier "momentum."

Also in this example, as in the previous one, besides the presence of a current of energy and momentum (two immaterial substances), we have the presence of a current of matter (water under pressure) moving in a closed circuit, from the source to the receiver, and back. (We are therefore again in case B).

Example 3 (*boiler-water-heater*). *S* is a boiler; *R* is a heater; *M* is the hot water flowing from the boiler to the heater, and back; *I* is the entropy.

More precisely, *S* communicates *entropy* to the water, heating it up, by putting it in contact with a vessel at high temperature (entropy passes spontaneously from regions of higher temperature to regions of lower temperature). Via a pump, the hot water circulates in the pipes and reaches the radiator, to which it transfers part of its entropy, by contact (cooling down).

The water is therefore the material carrier of the entropy, and entropy is the immaterial carrier of the energy.

Also in this example, as in the previous two, besides the presence of a current of energy and entropy (two immaterial substances), there is a current of matter (hot water) moving in a

closed circuit, from the source to the receiver, and back. (We are therefore in case B).

Note: It is of course also possible to transfer energy from the boiler to the radiator without letting the water circulate. In this case however, the intensity of the entropy current from the boiler to the heater is going to be much lower, and consequently the efficiency of energy transfer process will also be reduced. Such a situation corresponds to case C, since there wouldn't be then a significant transfer of matter (the water doesn't flow).

Example 4 (*battery-electricity-bulb*). *S* is an electrical battery; *R* is a light bulb; *M* is the electricity (i.e., the current of electrons moving along the wires); *I* is the momentum and the electric charge.

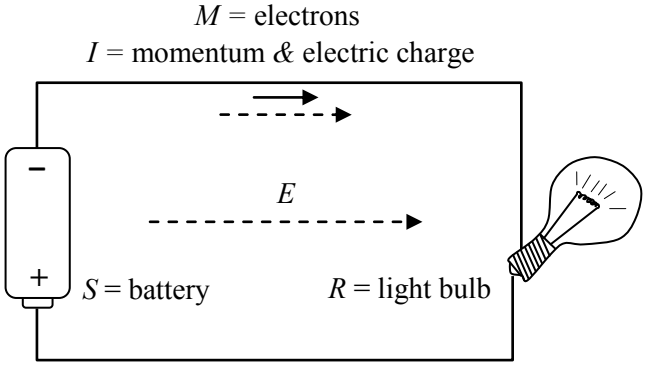

Figure 4. *Energy flow diagram*, schematically describing a process where an electrical battery transfers energy to a light bulb, using for this the material carrier "electricity" and the two immaterial carriers "momentum" and "electric charge."

More precisely, through the electromotive force, *S* communicates momentum to the negatively charged electrons, which are then "pushed" from the negative to the positive pole of the battery[2]. Arriving in the bulb, where there is a strong resistance, due to the friction entropy is created (from scratch). This means that the bulb works as a *transceiver*: energy goes into the bulb carried by electricity, and part of this energy is

[2] Note that the direction conventionally indicated for the electric current is that of positive charges, so opposite to the actual direction of motion of the electrons in a conductor.

transferred to the bulb by means of the entropy produced (energy which in turn the bulb will transfer to the surrounding environment by means of an electromagnetic perturbation, called light).

The electrons are therefore the material carriers of momentum and electric charge, whereas momentum and electric charge are the immaterial carriers of the energy.

Also in this example, as in the previous ones, in addition to the current of energy, momentum and electric charge (three immaterial substances), we also have the presence of a current of matter (the electrons), which flows from the region of higher to the region of lower electric potential. (We are therefore in case B).

Note: the light bulb, as we have seen, is an *energy transceiver*. An energy transceiver, in general, is an entity that receives energy through a specific carrier, and transfers it through a different one. The bulb, as an electrical resistance, transfers energy from the carrier "momentum" to the carrier "entropy" (on the other hand, internal combustion engines do exactly the opposite).

Example 5 (*tank-gasoline-motor*). *S* is the tank of a car; *R* is the motor of the car; *M* is the gasoline.

More precisely, thanks to a pump, the material substance "gasoline" is conveyed to the motor. Inside the motor, a chemical reaction takes place (combustion): the gasoline is combined with oxygen and produces a large amount of entropy, thus transferring energy to the pistons, which receive a boost (i.e., momentum).

The gasoline is therefore the material carrier of the energy and there isn't in this case an immaterial carrier: it is the gasoline itself that, by combining with the oxygen molecules in the piston, is destroyed, and in the reaction conveys energy to the substances produced (carbon dioxide and water), which thus acquire a large momentum, part of which is transferred to the piston[3]. In other words, in this case the only energy carrier is the *quantity of substance* "gasoline." (We are therefore in case A).

In the five examples described above, we have seen that in combination with the immaterial current of energy is always

[3] The momentum is not for this created from nothing. The total momentum, given by the (vector) sum of the momentum of the different products of the combustion reaction, is obviously equal to the total momentum possessed by the gasoline and the oxygen prior to the reaction.

present a current of material substance, of non-zero intensity: bowling ball, water, electrons, gasoline (cases A and B). In some of these examples, but not in others, we have seen that the material carrier of energy flows in a closed loop.

The distinction between "closed circuit" or "open circuit" systems, however, does not have any deep physical meaning. It is simply about observing that different configurations are possible.

On the other hand, this distinction highlights an important point: *energy doesn't necessarily flow along with the material carrier*. This is already quite clear in Examples 2, 3 and 4, considering that the material carrier, in contrast to energy, moves along a closed circuit.

In Example 2, the material carrier departs from the source as "high pressure" water, and once having transferred the energy to the receiver, makes its way back to the source as "low pressure" water. In Example 3, the material carrier leaves the source as "high temperature" water, and once having transferred the energy to the receiver, makes its way back to the source as "low temperature" water. In Example 4, the material carrier quits the source as "high potential" electric current, and once having transferred the energy to the receiver, makes its way back to the source as "low potential" electric current.

In other words, *energy can flow regardless of the flowing of its material carriers*.

We have already emphasized this fact in Example 3, observing that the immaterial substances "entropy" and "energy" can flow from a boiler to a radiator even when the water is not circulating in the pipes[4]. Let us analyze this possibility in more detail, in more specific examples.

Example 6 *(Newton's pendulum).* *S* is the metal ball at the extreme left of the pendulum; *R* is the metal ball at the extreme right of it; *M* consists of the metal balls in-between them; *I* is the momentum.

More precisely, *S* gives *M* its energy, by transferring all its momentum to the second ball, which then transfers it to the third, then the third to the fourth, and so on, until the last ball, which is the receiver, is placed in motion, and therefore receives the energy. As is known, the process takes place without any of the

[4] More simply, one can bring a small metal object to the flame of a candle: very soon a flow of entropy and energy will pass through the object, reaching the fingertips and activating one's nociceptors.

intermediate balls, which form the substance of the material carrier, move.

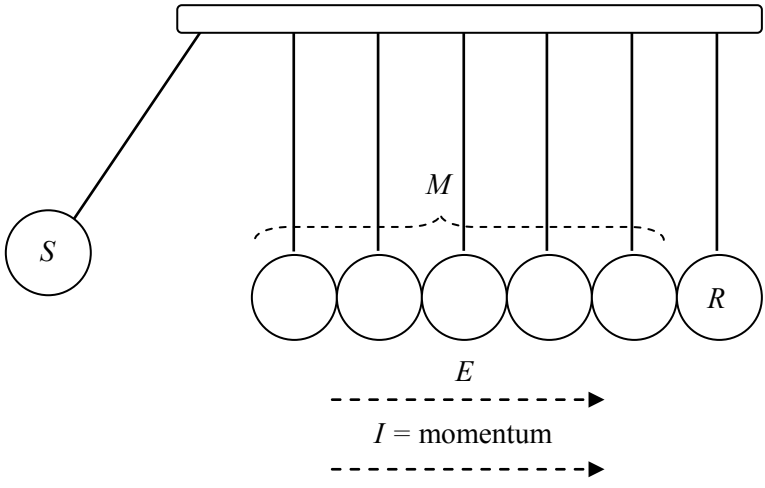

Figure 5. *Energy flow diagram*, schematically describing a process where a metal ball transfers energy to another metal ball, using a number of intermediary metal balls as the material carrier, and the momentum as the immaterial carrier.

In other words, *M* doesn't flow: the metal balls remain steady (the velocity of their center of mass is zero). However, what instead does propagate is a *(shock) wave of longitudinal compression and decompression* between the metal balls (which are elastic), i.e., a deformation (the effect is similar to the well known "domino effect").

The intermediate balls are thus the material carrier of the momentum, and momentum is the immaterial carrier of the energy. However, the material carrier doesn't flow together with the immaterial carrier. (We are therefore in case C).

Example 7 *(sound waves).* The situation with Newton's pendulum is very similar to what happens when a sound wave propagates in the air (*M*), for example between the speaker of a radio (*S*) that generates the wave and the eardrum of a ear (*R*) that receives it.

As for Newton's pendulum, a sound wave is also a longitudinal perturbation, that is, a wave of compression and decompression of the air molecules, which propagates without the need of any

matter current: the air molecules are set locally in motion by the oscillation of the speaker, and communicate, always locally, through collisions, their movement to the closest molecules, and so on, until the oscillation reaches the tympanic membrane of the ear, which is also put in oscillatory motion, thus receiving energy.

It is important to distinguish the situation of the transfer of energy through the propagation of a sound wave, with that of an energy transfer produced, for example, by a hot air heater. The carrier is always air, but in the case of the hot air heater it is driven by the fan. In this way, a "wind of matter" is created, that is, a current of the material carrier (to which is associated an immaterial entropy current), which is not the case for the sound wave.

Example 8 (*hand-trolley-rope*). *S* is a hand; *R* is a trolley (that you want to pull); *M* is a rope that on one side is held by your hand, and on the other side is tied to the trolley; *I* is the momentum.

This example is perhaps even more significant in illustrating the fact that the material carrier doesn't have to flow from the source to the receiver, for the energy to be transported. In fact, the person transfers energy to the trolley by *pulling the rope*. Obviously, the stuff the rope is made of doesn't flow from the hands of the person to the trolley. The rope is simply placed under tension.

One usually says in this case that a *force* is applied, but force, as evidenced by Newton's second law, is nothing but an expression of a *current of momentum*[5].

The rope is therefore the material carrier of momentum, and momentum is the immaterial carrier of the energy. However, the material carrier doesn't flow together with the immaterial carrier. (We are therefore in case C).

ENERGY TRANSFER BETWEEN TWO INTRAPHYSICAL CONSCIOUSNESSES

I would like to now describe the process of energy transfer between an intraphysical human operator (*S*), who exteriorizes energy, for instance through his/her *palmochakra*, and another intraphysical consciousness (*R*), able to receive it. Here of course I'm assuming that the process is completely objective, i.e., that *S*

[5] According to Newton's second law: $f = dp/dt$.

and *R* are not simply imagining exteriorizing and receiving energy. In other words, it is not in question here the fact that there is an objective energy current between *S* and *R*.

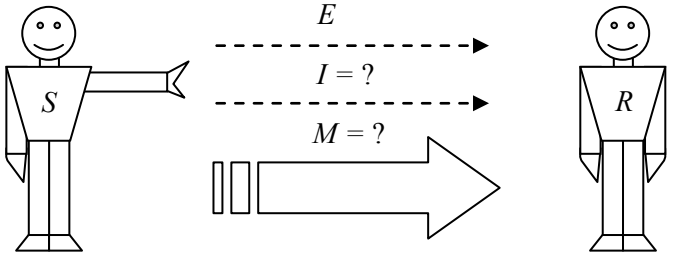

Figure 6. *Energy flow diagram*, schematically describing a process where an intraphysical consciousness transfers energy to another intraphysical consciousness, through some unknown carriers.

Based on what has been described in the previous sections, we are now able to formulate some conceptually well-posed questions, about the nature of this process of emission and absorption of energy between two intraphysical consciousnesses.

Since energy, to be transported, requires the presence of a material carrier, the first question one must ask is the following:

(a) *What is the nature of the* ***material carrier M*** *that connects S and R, allowing for the transfer of energy?*

Also, it is necessary to ask if the material substance is present in the environment between *S* and *R*, or if it is exteriorized by the intraphysical consciousness *S*, or perhaps by both consciousnesses.

One possible hypothesis is that around *S* and *R*, a *field of subtle matter* is always present, with a given spatial range, and that when *S* and *R* are sufficiently close in spatial terms, their subtle matter fields are able to co-penetrate, thus forming the material carrier *M* that will then allow for the passage of energy.

But whether *M* is exteriorized at the moment by *S* and/or *R*, whether it is already present in the environment, or accompanies *S* and *R* as a kind of "personal atmosphere of subtle matter," it is also important to clarify if in the energy transfer process between *S* and *R* the material carrier *M* does flow or not. In other words, the second question one must ask is:

(b) *Does the material carrier M* ***flow*** *from S to R, or its current is zero?*

Here, of course, depending on the response, there can be the following additional questions:

(c) *If the material current is* ***zero****, what is the nature of the immaterial substances carrying the energy?*

(d) *If the material current is* ***non-zero****, is energy only carried by the material substance, or also by immaterial ones? In that case, what is their nature?*

It is not easy, of course, to provide answers to the above questions. Nevertheless, if the energy transfer between the intraphysical consciousnesses *S* and *R* is objective, then we know that, necessarily, a material substance *M* must exist (however subtle it is), which is the material carrier of the immaterial substance "energy."

The central question is therefore about clarifying whether the exteriorization of energy on the part of *S* is mainly due to an exteriorization of a material substance (as when, with our lungs, air is blown from the mouth to the outside), or if it is more like a local perturbation propagating in space, carried by an immaterial substance (such as momentum), without there being any transport of matter (such as when we emit a sound wave with our vocal chords); or if both mechanisms take place simultaneously.

Of course, these same questions can be addressed (and may receive very different responses), when the psychoenergetic process concerns even more subtle substances, such as in the case of empathic and telepathic communications.

ENERGY TRANSFER WITHIN AN INTRAPHYSICAL CONSCIOUSNESS (THE VELO TECHNIQUE)

Of course, we can ask questions similar to the previous ones also with regard to the internal movements of energy, as in the well-known methodology called VELO (Alegretti, 2008), (Trivellato, 2008).

The answer to the above mentioned question (a) is obviously that in this case the material carrier would be the very stuff that forms our extraphysical body, usually called energosoma (or

energetic body, holochakra, etheric body, pranamaya kosha, etc.).

However, the energosoma is not necessarily a homogeneous structure, and when during the execution of the VELO technique one produces (according to a specific protocol) an alternating energy current along with it, it is necessary to ask whether the phenomenon in question can be understood as the movement of a material fluid substance (belonging or not to the energosoma), which would pass through a more rigid energosomatic structure (as for example in the case of the fluid "air," in the physiological breathing, or the fluid "blood," in the internal blood circulation), or whether it is rather a propagation of energy carried out only by immaterial carriers.

In this case, the energosoma would merely constitute the material stuff supporting the conduction of the immaterial carriers, which would longitudinally transport the energy along the body, but with no transport of matter.

Another possibility, of course, is that both these possibilities are implemented simultaneously, during the execution of the technique. That is, a material fluid passes through the structure of the energosoma and, at the same time (or as a result of this material movement), a current of immaterial carriers (e.g., momentum) flows into the structure itself, in a process that could be similar to that of the propagation of a sound or electromagnetic wave.

I will not advance myself further into these considerations, since the purpose of this paper is not to clarify the specific nature of these phenomena, but rather to suggest a clear conceptual language for them, with the scope of formulating well posed questions.

ENERGY OR "ENERGY FORMS"?

It is important at this point to clarify an important misconception. It is customary, even by physicists, to distinguish between different "forms of energy." This subdivision of the immaterial substance "energy" in different forms, however, is quite misleading and should be avoided as much as possible.

Historically, the distinction between different forms of energy has followed two main criteria: (1) how the energy can be stored, that is contained in a physical system; (2) how the energy can be exchanged between different physical systems.

The first criterion has led to the distinction between forms of energy such as kinetic energy, potential energy, elastic energy,

internal energy, etc. The second criterion has instead given rise to the distinction between forms of energy such as heat, work, electricity, chemical energy, etc.

The first criterion is usually applied when the system under consideration can be divided into subsystems[6]. Let's take a simple example, considering a small body of mass m (a classical particle), free falling in Earth's gravitational field, near the surface. In this case, it is customary to say that the body has a certain amount of *kinetic energy* K (carried by its momentum p, according to the well-known formula: $K = p^2/2m$) and a certain amount of *gravitational potential energy* V (given by the formula $V = m \cdot g \cdot z$, where g is the acceleration of Earth's gravitational field and z the height of the body).

This description is however conceptually incorrect. In fact, the gravitational potential energy V is not owned by the body, but by the physical entity named "gravitational field" in which the body is immersed. What happens when the body falls, is that the gravitational field transfers some of its energy to the body, by exchanging momentum. (Conversely, the gravitational field, as a container, receives back energy from a body when it is lifted up).

In other words, there isn't a "kinetic energy" and a "potential energy[7]," that is, two different "forms of energy," jointly possessed by a body of mass m. On the contrary, there is a single immaterial substance, simply called "energy," owned by two different physical systems: the material body and the gravitational field.

The other criterion usually applied to distinguish between different forms of energy, is in relation to the modalities of its transfer. Usually, we say that energy is transferred from one system to another in the form of heat, work, chemical energy, electrical energy, etc. These forms however, as we have seen, have nothing to do with energy itself, but rather with its carriers.

Once the distinction between the concept of "energy" and the concept of "energy carrier" is clear, it also becomes clear that

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[6] Mathematically speaking, this statement means that the Hamiltonian function describing the energy can be written as a sum of independent terms, in the sense that each term depends on variables that do not appear in the other terms.

[7] The term "potential energy," on the other hand, can be considered correct if it is understood not as a form of energy possessed by the body of mass m, but as the energy it could (potentially) receive from the gravitational field in which is immersed.

only a single form of energy exists, although it may be carried from one system to another with entirely different modalities.

What we can observe, as we have shown in different examples above, is that *energy always flows with at least another substance* (understood here as an extensive quantity), which can be either material, or immaterial. These substances that accompany the flow of energy are its carriers. Carriers may change, of course, but this doesn't mean that the form of energy changes. Indeed, only its mode of transportation changes. To use a metaphor, surely it makes no sense to speak of different "forms of eggs," distinguishing "car-eggs" from "bicycle-eggs," depending on the vehicle with which they are transported.

This means that so-called *non-homogeneous* (or hybrid) *transducers*, such as electromechanical, electro-optical, magnetoelectric, piezoelectric transducers, etc., should not be considered as devices where the energy input would be of a "different form" than the energy output. Energy is one and only one! However, what the transducer in fact does, is to change the type of carrier that transports energy.

If we follow this logic, we can see that speaking of different "forms of energy" is as inappropriate as speaking of different "forms of electric charge," depending on whether it is carried by electrons, protons, muons, etc., or different "forms of momentum." Just as it makes no sense to speak of a "bowling ball form of momentum," but it makes sense to distinguish the immaterial substance "momentum" from its material carrier "bowling ball," in the same way it makes no sense to confuse the immaterial substance "energy" and its possible carriers, whether material or immaterial.

MASS, ENERGY AND MATTER

I have already mentioned the importance of distinguishing the concept of *matter* from that of *energy*, since the two concepts are based on entirely different ontological categories, energy being a *property of matter*, whose characteristic is to behave like a substance (*substance-like* property).

Similarly, I mentioned the importance of not confusing the concept of *mass* with that of *matter*. According to the theory of relativity (special and general) we know that (until proven to the contrary) *mass and energy are two entirely equivalent ways of talking about a same reality*: it is exactly the same concept, only described with different units of measurement.

Energy, like mass, determines the intensity with which a physical entity (possessing such energy) is able to receive additional energy from a gravitational field, by means of the weight-force (which, like all forces, describes the intensity and direction of a momentum current). And energy, like mass, also determines the resistance exerted by a physical entity in altering its state of motion (inertia).

In other words, energy and mass have same characteristics and, consequently, describe the same physical property. We can therefore speak indifferently of mass, energy, or mass-energy (a redundant term). Thus, as it is necessary to distinguish between matter and energy, it is also necessary to distinguish between matter and mass, the latter being a substance-like property of matter, equivalent to energy.

The main difficulty in distinguishing matter and mass (and therefore matter and energy) lies in the fact that in physics mass was initially understood as "quantity of matter." But of course we must not confuse the amount of a given material substance, for instance expressed by the number of elementary physical entities of a given kind present in a system, with the mass (or energy) carried by those entities.

TERMINOLOGICAL PROBLEMS

Considering the conceptual clarification offered in the previous sections, and especially the fundamental distinction between the concept of "energy," which cannot be decomposed into distinct forms, and the concept of "energy carriers," which on the contrary are numerous and are certainly to be distinguished, we can question the relevance of terms such as: energies (in the plural), subtle energies, extraphysical energies, immanent energies, consciential energies, energetic dimension, energosoma, energetic body, etc.

First, let us observe that using the term energy in the plural, that is, to speak of "energies," is obviously misleading, as this would suggest the existence of more than one immaterial substance associated with the concept of energy. Instead, as we have seen, there is a single immaterial substance called "energy," which has the remarkable property of being conserved (unless evidence to the contrary) in all processes of interaction between physical entities (in the sense that it can be neither created nor destroyed). Therefore, it is desirable to avoid stating the term "energy" in the plural.

Another inaccuracy is to qualify the term energy, for example when one says "subtle energy," or even worse "subtle energies." If the immaterial substance "energy" is unique, it is obviously incorrect, as we have explained above, to distinguish between different forms of it. It is incorrect to do so when dealing with ordinary physical systems (although it is common practice among physicists, including the author), and a fortiori it is also incorrect to do so when one describes non-ordinary physical systems.

Of course, it is not here in question the utility of using terms such as "subtle" to identify the non-ordinary nature of the phenomenon under consideration. The point is that this adjective doesn't refer to energy, but to the material carriers of the energy.

In other words, if the term "subtle energies" is understood as an abbreviation which stands for "energy conveyed by subtle material substances," its use is certainly acceptable. However, in my experience, when one uses this expression, this is not the way it is usually understood. Therefore, my advice is to use as much as possible the more appropriate terms of "subtle matters," "subtle material substances," or "subtle material fluids," instead of "subtle energies."

Obviously, the same kind of observation also applies to the other terms mentioned above. Instead of speaking of "immanent energies," it would be preferable to say "immanent matters," or "immanent material substances." Same thing for the term "consciential energies," which should preferably be replaced by "consciential matters," or "consciential material substances."

The term "energosoma" (or "energetic body") also lends itself to possible misunderstanding, since each vehicle of manifestation possesses energy, and is therefore an energosoma! Every physical entity has, until proven to the contrary, energy, and to emphasize that a specific entity is of an energetic nature is a kind of pleonasm, which is likely more to confuse than to clarify.

Let me observe that the term "energy" associated with "soma" is usually used to indicate the more *fluid* and translucent nature of this vehicle, when compared to the more rigid and opaque somatic vehicle, also because in one's imagination it is customary to associate the concept of energy with something fluid, vibrant, luminous, electric. In that sense, it would be maybe preferable to use terms such as "fluidosoma," or "vibrational body."

The concept of thosene, from my point of view, could also be revisited, replacing the "e" (or "ene") of "energy," with a "ma," referring to the "matter" aspect, constitutive of physical entities,

be them ordinary or non-ordinary. That is, "thosema" instead of "thosene." Indeed, matter, or rather matters, are the founding elements supporting our cognitive processes, such as emotions and thoughts. And as there are matters of different nature, more or less subtle, so there are emotional and mental processes of different nature, depending on the material substances (and corresponding structures) which are carrying them.

For example, we can feel emotions and think using primarily the matter of our soma, or do the same using the paramatter of our psychosoma, when in extracorporeal states, or the metamatter of our mentalsoma, for example in a mentalsomatic projection.

Let's consider now the term "extraphysical." Here, depending on the meaning one attaches to the prefix "extra," the understanding of the term may vary. First, it is good to understand the etymology of the word "physical." It can be related to the Greek word "phusis," which means "that which is put into existence," which in turn derives from the Greek verb "phuoo," which means "to create, springing up." More customarily, the word is associated to the (always Greek) term "physis," which means "nature," to be understood as the "world," that is, "that which exists in a substantial sense."

In short, whatever the way one wants to understand the etymology of the word, this certainly doesn't create a separation between "coarse-grained" and "fine-grained" realities, but potentially encompasses all of reality. The term "extraphysical" is therefore not to be understood as that which goes beyond the physical, as this would make no sense. The prefix "extra" is rather to be understood in the sense of "extra-ordinary," that is "non-ordinary." This means that the vehicle connecting the soma and the psychosoma – the *fluidosoma* – is to be considered an "extraphysical vehicle" in the sense of being a "non-ordinary physical vehicle."

Therefore, when we talk about "extraphysical dimensions," what we have to understand by this term is "non-ordinary physical dimensions," i.e., "physical dimensions formed by non-ordinary material substances[8]." On the other hand, terms like "extraphysical energies" should be avoided altogether, and be

[8] Similarly, our "intraphysical" condition denotes not so much a condition of physicality, but rather a condition of non-ordinary physicality, associated to our experience of an ordinary, three-dimensional physical space, inhabited by classical substances of a specific kind.

replaced by “extraphysical matters,” to be understood as “non-ordinary physical matters.”

ENERGY AND DATA

The concept of energy is obviously not the only relevant concept when studying the physical properties of substances, be them ordinary or non-ordinary, living or nonliving. Another concept of undoubted importance is that related to the *information* that is constantly being exchanged between different physical systems.

Many self-researchers affirm, rightly, that what most characterizes psychoenergetic phenomena is not so much the amount of energy which is being exchanged, as the information that is conveyed in this way.

Undoubtedly, the psychoenergetic phenomena human beings are able to manifest, both in their intraphysical and extraphysical conditions, do sponsor dynamics that in addition of exchanging energy, also exchange information. In other words, the aspect of “communication of a meaning” in these energy exchanges is probably of primary importance, if one wants to understand the true nature of these phenomena.

A good analogy is that of the human oral language. Being interested in the energetic aspect of human oral communication is certainly important, and requires a thorough knowledge of the characteristics of vocal cords, tympanic membranes, and waves propagating in the air. But to think to understand what really happens when two humans verbally communicate, taking into account only the energetic aspect of the communication, it would obviously be totally inadequate.

In other words, to fully understand the interactions happening in the ambit of a human conversations, one must also, and above all, be interested in syntax and semantics, i.e., in the structure of the language and the meaning conveyed by such a structure, as well as, of course, in the way this meaning is modulated according to the different contexts and minds participating in the interaction.

On the other hand, it is also true that to speak one needs to have well-functioning vocal cords, and to listen one needs well-functioning ears. Moreover, under water, it is certainly not very practical to have a clear conversation with one’s interlocutor, (regardless of respiratory problems). I say this just to draw attention to the fact that one thing is a flow of data, and the

information it potentially carries, and another thing is its transportation.

When I was writing this article, because of a small earthquake, an unexpected power blackout occurred, which suddenly wiped out the flow of energy entering my computer. The consequence of this small energetic incident is that the whole document I was working on was destroyed, together with the data it contained.

With this anecdote I just want to draw attention to a simple fact: the transport of data, and of the information associated with those data, takes energy, and transport of energy, as we have seen, requires at least the presence of one material carrier.

So, even though I do certainly agree that the exchanges of energy associated to mental communications need to be understood not only in terms of quantity of energy, currents of energy and currents of energy's carriers, but also in terms of content, relation, meaning, coherence, structure, etc., it is important to always remember that every communication needs, to be implemented, the presence of material and immaterial substances, able to sustain it.

Therefore, the understanding of such exchanges cannot totally disregard the understanding of the nature of the substances that carry the data, which are the same as those carrying the energy.

In this regard, I would like to observe – and on this I conclude my brief parenthesis on "information" – that also the physical quantity "amount of data" behaves like an immaterial substance, to which one can associate a specific current, the intensity of which is usually calculated in bits per second.

CLASSICAL AND NON-CLASSICAL SUBSTANCES

Before concluding this article, some words should be said about the subject of *non-classical material substances*. In fact, we have assumed in this paper, not to complicate the discussion, that the matters at stake, both in ordinary and non-ordinary physical systems, were classical, in the sense of being present in each moment in our *three-dimensional* ordinary physical space (OPS).

But this is certainly not the rule. A typical example of a non-classical material substance is the carrier of electromagnetic waves. In the past the carrier was named by physicists the *ether*, but with the advent of Einstein's relativity the term almost totally disappeared from their vocabulary.

This is because, as a consequence of the theory of relativity, it seemed totally impossible to attribute to the ether a specific state of motion in space. And if the ether did not have a proper

motion, the logical consequence for many physicists was to simply decree its inexistence, based on the prejudice that our three-dimensional space would be the theater containing the totality of all that exists, and that each spatial entity were compelled to possess a well-defined state of motion.

But once the ether has been eliminated, the electromagnetic waves became, all of a sudden, very paradoxical perturbations, able to propagate into the *nothingness*, i.e., without the presence of a material carrier capable of supporting their propagation.

Actually, if the concept of the ether went out the front door, it re-entered from the back-door, in a different guise. In fact, physicists today no longer speak of the ether, this is true, but they speak of the *vacuum* and its properties, distinguishing this concept from the one of *nothingness*; or they speak of *fields*, meaning with this the set of properties owned by specific regions of the three-dimensional space.

But the trick to delete the word "ether" does not solve the problem of determining what the physical vacuum or the physical fields are. There is no doubt that since they possess physical properties, they must be physical entities, made of some material substances. But these substances, although material, are certainly not of the ordinary kind.

Indeed, the impossibility to describe them in terms of a specific state of motion suggests that they are matters that do not belong to our three-dimensional OPS. But if this is what is indicated by relativity theory, the situation becomes even more serious when quantum theory comes in.

Indeed, it is known that quantum entities, while being certainly physical, cannot in any way be described as substances that would sojourn permanently in our OPS, their spatiality being very different from that of the objects of our everyday experience.

Obviously, I cannot go here into the details about these issues, which are conceptually quite subtle. To deepen their understanding, I recommend the reading of the works of the Belgian physicist Diederik Aerts, especially (Aerts, 1990, 1999). Some references to the work of Aerts can also be found in some of my writings published in this journal (Sassoli de Bianchi, 2006a, 2006b, 2009b), or in some of my most recent publications (Sassoli de Bianchi, 2011a, 2011b, 2011c, 2011d).

In particular, in (Sassoli de Bianchi, 2011c) I suggest looking at our *physical space* as an entity that extends beyond the simple three-dimensional theater of our ordinary experience. The classical substances, that in every moment possess a well-defined

position and momentum, are those that by definition stably reside in the *three-dimensional* OPS, that we all know, but this space is in turn contained in larger theatres, of an *extra-ordinary* nature, and it is in these non-ordinary ambits that usually the quantum entities stay.

These larger spaces, even if extra-ordinary from the view point of our ordinary perception, are still always part of the physical space, since, as I have many times emphasized, everything that exists has by definition some kind of physicality, that is, of materiality.

Therefore, the conceptual framework presented in this paper remains in principle also valid for quantum material substances, although their way of behaving and manifesting their presence differ from that of classical macroscopic bodies. Their presence in the three-dimensional space is in fact only potential: they are available in being "sucked up" into it, in certain circumstances, and their availability can be quantified by means of probabilities, but their primary place of residence is not the OPS of our three-dimensional intraphysical experience (a fact usually described in the scientific literature by means of the concept of *non-locality*).

The same is undoubtedly true also for the subtler paramatters, although their characteristics are probably very different in comparison to the quantum entities today studied by physicists, as are probably also very different the extra-ordinary spaces in which these paramatters usually reside[9].

But regardless of the nature of the various material substances and the spaces (ordinary or non-ordinary) in which they usually reside, there aren't reasons, I think, to deny one of the basic principles outlined in this paper, namely that to transport energy between two entities, regardless of their nature and spatiality, the presence of at least one material carrier (ordinary or non-ordinary) and of some possible additional immaterial ones, is always required.

CONCLUSION

I'd like to conclude this article with a few brief remarks. Regarding the issue of the inadequacy of the concept of "energy

[9] Most likely, the distinction between classical and quantum behaviors does not apply only to the matters today studied by conventional physics, but also to the paramatters that form the higher vehicles of manifestation and related existential dimensions of the consciousness.

form," one could argue that also in conventional science the confusion between energy and forms of energy is continually promoted. This is certainly true, but it is not because a misconception is promoted by a majority that this justifies its perpetuation.

Furthermore, I believe that in the study of the "subtle" paramatters it is particularly important to emphasize the non-subjectivity of such entities – as for example the different vehicles and corresponding interfaces that form the holosoma of the consciousness – not referring to them as "energy structures," but rather as "material structures."

Much of the ideas expressed in this article are inspired by the work of *Karlsruhe*'s German school of physics (Falk et al, 1983), (Schmid, 1984), (Herrmann, 2000). In this school, however, the concept of "immaterial substance" is not considered, in the sense that a distinction between "material carriers" and "immaterial carriers" is not made (one speaks of energy carriers in general terms, whatever their nature).

It is important to observe that the immaterial character of a substance is such because it is a *substance-like property* that cannot exist without the support of a material substance. That this supporting substance is subtle or not, that is not the point. It is therefore good practice not to confuse the "subtle" paramaterial substances with the immaterial substances associated to them, such as for example energy. Energy is, until proven to the contrary, a purely immaterial quantity, regardless of the spatial, dimensional and existential context in which it is considered.

APPENDIX

In this appendix I will only provide a fundamental relation between *intensive* and *extensive* quantities, which determines the intensity of a current of energy $I_E = P$ (power). This relation highlights the fact that to every carrier of energy (characterized by an extensive quantity, like the amount of matter, the electric charge, the momentum, the entropy, etc.) is associated a specific intensive quantity (chemical potential, electric potential, velocity, temperature, etc.) that quantify how much the carrier is charged with energy or, better, the "thrust" the carrier receives, which determines the intensity of the energy flow (Falk et al, 1983), (Schmid, 1984). More precisely, we have the following relation:

$$I_E = \mu \cdot I_M + \phi \cdot I_Q + v \cdot I_p + T \cdot I_S + \cdots,$$

where I_M is the current intensity of the material carrier (measured in number of moles per second) and μ is the chemical potential; I_Q is the current intensity of the immaterial carrier "electric charge" (measured in amperes, that is, in coulombs per second) and ϕ is the electrical potential; I_p is the current intensity of the immaterial carrier "momentum" (measured in newtons, i.e., in huygens per second, usually associated with the concept of force) and v is the speed; I_S is the current intensity of the immaterial carrier "entropy" (measured in carnot per second) and T is the absolute temperature.

BIBLIOGRAPHY

ABS DE LIMA, André; *An Analysis of Bionergy as studied by Projectiology and other Conventional Sciences*; Journal of Conscientiology; Volume 7, No. 27, January 2005; pp. 255-268.

AERTS, Diederik; *An attempt to imagine parts of the reality of the micro-world*, in: Problems in Quantum Physics II; Gdansk '89, eds. Mizerski, J., et al., World Scientific Publishing Company, Singapore, 1990; pp. 3-25. (Traduzione in italiano: AutoRicerca, No. 2, 2011).

AERTS, Diederik; *The Stuff the World is Made of: Physics and Reality*, in: The White Book of "Einstein Meets Magritte", Edited by Diederik Aerts, Jan Broekaert and Ernest Mathijs, Kluwer Academic Publishers, Dordrecht, 1999; pp.129-183.

ALEGRETTI, Wagner; *An Approach to the Research of the Vibrational State through the Study of Brain Activity*; Journal of Conscientiolgy, Vol. 11, No. 42; 2008; p. 217.

BRUCE, Robert; *Energy Work;* Hampton Roads Publishing Company, 2007.

FALK, G; HERRMANN, F. & SCHMID, G.B.; *Energy forms or energy carriers?*; Am. J. Phys. 51, 1983; pp. 1074-1077.

HERRMANN, F. & JOB, G.; *The historical burden on scientific knowledge*; Eur. J. Phys. 17, 1996; pp. 159-163.

HERRMANN, F.; *The Karlsruhe Physics Course*; Eur. J. Phys. 21, 2000; pp. 49-58.

SASSOLI DE BIANCHI, Massimiliano; *A Dialogue About Science, Reality and the Consciousness – Part I;* Journal of Conscientiology; Volume 9, No. 33, 2006a; pp. 365-418.

SASSOLI DE BIANCHI, Massimiliano; *A Dialogue About Science, Reality and the Consciousness – Part II*; Journal of Conscientiology, Volume 9, No. 34, 2006b; pp. 3-56.

SASSOLI DE BIANCHI, Massimiliano; *Interdimensional energy transfer: a simple mass model*; Journal of Conscientiology, Volume 11, No. 43, January 2009a; pp. 297-315.

SASSOLI DE BIANCHI, Massimiliano; Journal of Conscientiology; Volume 12, No. 45, July 2009b; pp. 65-72.

SASSOLI DE BIANCHI, Massimiliano; *Ephemeral Properties and the Illusion of Microscopic Particles*; Found. Science, Volume 16, No. 4, 2011a; pp. 393-409.

SASSOLI DE BIANCHI, Massimiliano; *From permanence to total availability: a quantum conceptual upgrade*; to appear in: Found. Science; doi: 10.1007/s10699-011-9233-z.; arXiv:1010.4942v2 [physics.gen-ph], 2011b.

SASSOLI DE BIANCHI, Massimiliano; *The δ-quantum machine, the k-model, and the non-ordinary spatiality of quantum entities*; to appear in: Found. Science; doi: 10.1007/s10699-011-9284-1; arXiv:1104.4738 [quant-ph], 2011c.

SASSOLI DE BIANCHI, Massimiliano; *The observer effect*; arXiv:1109.3536v2 [quant-ph], 2011d.

SCHMID, G.B.; *An up-to-date approach to physics*; Am. J. Phys. 52, pp. 794-799, 1984.

TILLER, William A.; *What Are Subtle Energies?*; Journal of Scientific Exploration, Vol. 7, No. 3, 1993; pp. 293-304,

TRIVELLATO, Nanci; *Measurable Attributes of the Vibrational State Technique*; Journal of Conscientiolgy, Vol. 11, No. 42; 2008; p. 165.

VERNON VUGMAN, Ney; *Conscientiology and Physics: A Desirable Couple?*; Journal of Conscientiology; Volume 1, No. 4, April 1999.

VIEIRA, Waldo; *Projectiology, A Panorama of Experiences of the Consciousness outside the Human Body;* Rio de Janeiro, RJ – Brazil, International Institute of Projectiology and Conscientiology, 2002.

ZAMPERINI, Roberto; *Energie sottili;* Macro Edizioni, 1998.

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