

Correspondence

The Old Energy Fallacies

- from: Prof. Chris Clarke, 6 Blenheim Avenue, Southampton SO17 1DU

Are we really on the verge of a golden age ushered in by new energy technologies? O'Leary and Kaplan argue that we are, in their article "Miracle in the Void: The New Energy Revolution" (Network 70, 3-10. 1999), and if they are right then this is something of which every citizen of the planet needs to be aware. The article is a much welcomed start on introducing order into a field whose literature has, in me, always produced an impression of more enthusiasm than sense $\frac{3}{4}$ no doubt the opposite from its intended effect. The authors clearly classify the different approaches, make a good effort at segregating the solid experimental and engineering work from the more speculative theory, and give the reader access to some of the literature. They leave me, however, still profoundly sceptical. The real engineering and scientific issues are nowhere set out; the references given, where traceable, very rarely yield much of scientific merit, and the social arguments are, by the standards of the humanistic wisdom normally marking Network articles, remarkably shallow. We could simply wait three years to see if the promised devices appear on the shelves of your local supermarket. But, just in case they don't, and in case the picture in three years is still being described in terms of a commercial breakthrough any day now, I will expand on the above, from my viewpoint as a conventional physicist from outside the field, wanting to be convinced.

The first obstacle for me was still the disorganised state of the literature. Most of the references were unavailable at any of the libraries whose catalogues I scanned, and the cited web sites either contained a mass of links with little guidance as to where to go, or consisted of unsubstantiated polemic with few scientific details. I managed to find only two web sites that gave adequately detailed scientific accounts of research which, while falling short of "free energy," gave at face value evidence of a real research programme that might be heading that way. For the most interesting research the article refers to "two ABC shows, *Nightline* and *Good Morning America*." With this, can the authors be surprised at a reluctance to take them seriously?

I now want to address the basic scientific issues, and will conclude with the social/ethical dimensions. The two basic fallacies underlying the whole area are (1) energy is an absolute stuff, like coal or water; and (2) one form of energy is as useful as any other. These two fallacies imply that if we can find a really good source of this stuff and dig it out, then all our problems will be solved. Of course, if the basis of physics is completely wrong from beginning to end, then these propositions might not be fallacious, but to begin with let's not try to rewrite the whole of physics just yet.

The solidly established principles contradicting these two fallacies are (a) there is no such thing as the absolute amount of energy in a system, so that only *changes* (i.e. relative energy) are significant; and (b) the quality of the energy (in terms of lowness of entropy) is as important as its quantity. Let me illustrate these points briefly. Suppose I am standing in front of you holding a spherical mass of 1kg of plutonium, and I enquire how much energy I have. The key question is, what *change* in the state of the mass am I considering? I could drop it on your toe, releasing gravitational energy; I could burn it to plutonium oxide, releasing chemical energy; I could implode it in a nuclear weapon, releasing nuclear (strong

force) energy; or, if I could get round the conservation laws that normally prohibit this, I could convert it into massless particles of light and thereby release for use its entire relativistic mass-energy. Or, to illustrate point (b) I could compare its thermal energy with the thermal energy it would have at a temperature of absolute zero. But this last energy difference, unlike the others, is in practice unusable because such a cooling would require a refrigerator that would use more energy than would be released from the plutonium.

What is the significance of these fallacies? First they imply that all this talk about vacuum energy, irrespective of whether the fundamental physics is correct or not, is much less important than it seems. Just as the thermal energy in the plutonium is unusable, because to extract it we would have to use energy to move away from an equilibrium state, so to extract vacuum energy we would have to do the same thing. The thermodynamics is identical in the two cases. Vacuum energy might extend the sorts of energy machines that we could consider, and it could be a means of transmitting energy, but we cannot "mine the vacuum for energy," as some writers say.

Second, they imply that the idea of "overunity devices" - devices that "clearly produce more energy than what is needed to run them" - misses the point because it ignores the quality of the energy. A domestic refrigerator is an overunity device because it produces more heat energy from the cooling fins at the back than it consumes from the electrical energy that is put into it (the difference comes from the thermal environment). We have to compare like with like: the highest quality of energy is mechanical energy or (almost equivalently) electrical energy. All energy must be referred back to this standard by (at least notionally) converting to mechanical energy, and only when this is done can we see that the refrigerator does not give us free energy. A further point that must be taken into account is *the stored energy* that was used in producing the device in the first place. It is this which makes a battery torch a wonderful overunity device. The authors are clearly aware of these points because they discriminate between these forms of energy, but they fail to spell out their central significance. Moreover they repeatedly use measures of power rather than energy, which glosses over the issue of stored energy. Putting this together, we can conclude that what we are looking for is *a device made out of readily obtainable materials not degraded in use, consuming readily available "fuel" materials with no undesirable waste or emission, and producing over its life cycle significantly more mechanical-equivalent energy than was used to extract and prepare the "fuel," and to fabricate the device.* One reference to a detailed account of such a device, explaining carefully how the various energies involved in this specification were measured and calculated, is all that is required to convince me that there really might be something worth investigating. The web sites that I have cited come close to what I expect in quality, but are still working at important technical and theoretical issues that are at least one stage removed from the above energy criterion.

Finally I will briefly comment on the ethical issues, which are to my mind the most important. O'Leary and Kaplan quite correctly describe the environmental dangers inherent in humanity's current energy practices, and the comparatively cosmetic nature of most of the measures being taken to combat these. They place, however, the blame for this on the particular technologies that are in use, and not on the current ethical nature of most societies. Of course, technology has a vital and necessary part to play in solving the crisis that we are in; but the authors' rhetoric dangerously suggests that technology, of the sort they envisage, will be sufficient to solve it. The only caveat they raise is that a new situation would require "fresh perspectives and inspired leadership." I see in this an unaltered

continuation of the same ill that has caused the current crisis in the first place: a belief that human needs can always be met through physical control. Though these authors write with compassion, many write with a messianic zeal for a technology that will, in a few years, place unlimited power in the hands of every human on the planet: in the hands of the fundamentalists of all religions, in the hands of frightened nationalists clinging to their crumbling empires, in the hands of multinational corporations stripping the planet of species and habitats to feather the nests of their own elite, in the hands of the drug corporations and the genetic engineers who addict us to chemically controlled lives ... We must continue to explore with all our ingenuity, but we must also question the motives of those who rush into this brave new world with a speed that leaves behind all their critical faculties.

Do Classical Psychoanalysts Dance?

from Montague Ullman, M.D., 55 Orlando Avenue, Ardsley, NY 10502

Professor Elizabeth Lloyd Mayer has captured the essence of the healing process in her metaphor of the dance (*Psychoanalysis, Dance and Paradigm Deadlock*, April 1999). It implies closeness, partnership, fun and trust in the fact that with practice it becomes more and more interesting. No one can hate the other when a dance like that gets going. It is, as she noted, "heartfelt". What is implied but not overtly stated is that each of us possesses a self-healing potential for emotional growth in every way as palpable as the self-healing physical systems we are endowed with at birth. The significant difference is that whereas the latter operates to a considerable degree independently of our social experience, the former evolves or is blocked from evolving by our social experience.

Once the mutuality of the arrangement as described by Dr. Mayer is in place, the feelings of trust and safety that follow result in the lowering of resistance and the exposure of healthy tissue. When this happens it is a remarkably liberating experience. To paraphrase the lament of General MacArthur, "Resistances never die. They just fade away." Plasticity replaces rigidity.

A question arose as I read Dr. Mayer's piece. Is Dr. Mayer truly "an old-fashioned Freudian-trained psychoanalyst"? A psychoanalyst yes, but do classical psychoanalysts dance? It seems to me she introduces a degree of freedom into the analytic situation that goes beyond the detachment fostered by Freud's dictum that the analyst "maintain an evenly hovering attention". After all, it takes two to tango.

I would like to cite an experience of my own as a dramatic illustration of the point Professor Mayer makes about the importance of respect for the resistance in the context of the "dance" as she describes it. As any analyst knows, resistances are slow to change. The restructuring of character in therapy has been likened to the slow peeling off of the top layers of an onion until the desirable core lies exposed. A most startling realization dawned on me once I became involved in experiential dream group work after several decades of psychoanalytic practice. This had to do with the plasticity of our defensive structures and the ease with which resistances melted away (temporarily) once the dreamer experiences the respect, support and the stimulation coming from the group. The atmosphere of safety and trust is built into the process. Only the dreamer has the key to his or her own unconscious. All the group members can do is to help the dreamer realize that it is in his or her possession. It is his or her decision as to how widely to open the door at any given moment.

People vary in how rapidly the resistances are dissipated, but the fact that it can occur even on a first encounter in a group of strangers and lead to the initiation of profound transformative change is the significant point. The outer layers of the onion are still there but temporarily invisible so that the rich, creative, nurturing potential of the core lies exposed. Once the dreamer has left the special ambience of the dream group, the outer layers of the onion become very visible again, but the taste of the core remains with us enabling us to get to it more quickly when old defensive patterns threaten to re-emerge. They no longer come into being as unconsciously and as unchallenged.

To end up on a light note, I read Professor Mayer's piece where she mentioned Bartleby the day after I had finished reading Herman Melville's story, "Bartleby, the Scrivener". With regard to the prevailing reductionistic trend in science. I too prefer not.

From Relativism to Participation

from Julian Candy, 11 Shamrock Way, Hythe, Southampton, SO45 6DY

Max Payne's editorial *What does the Network Stand For?* (Network No 70 August 1999) expresses excellently both of the power of Network guidelines and of the place science takes for many of us within wider reality: neither are its achievements denigrated, nor is its current framework regarded as final.

However, Max claims that "the process of scientific inquiry remains more fundamental [than its changing structures].... Its paradigm is that description which is true for all possible observers."

I have two linked problems with this, not of equal significance. The first, and lesser, is that the word 'competent' is lacking: true for all competent observers. Otherwise a schoolchild looking at a chest x-ray who knew only that bone appeared as white could claim as true that the subject had a large lump of bone in the left side of his or her chest, and her classmates might agree with her. The schoolchild (and her classmates) are certainly members of the class of all possible observers, though not of the class of all possible competent observers, for whom study and incremental context-bound experience indicates that that particular white mass represents the heart and the blood within it. Only the competent observers can usefully lay claim to *scientific* truth.

The second, and greater, problem relates to one's experience of oneself: subjective experience. If I say that I have a pain in my belly, then the set of all possible (and competent) observers numbers precisely one, namely myself, and by Max' dictum my statement, with one proviso, is necessarily not only true but also a scientific truth. (The proviso relates to the possibility that I am lying, in some sense of that complex word. Wilber's introduction of the term 'truthfulness' is useful here, since it highlights the distinction between what I say and what I know to be true, and is perhaps one of the places where ethics enters science.)

The twist, and the link between these two objections to Max' formulation, comes when we acknowledge that all experiences are ultimately subjective, within oneself. This recognition allows the concept of 'competent', to slip into 'consensual', though those who believe we live in an intersubjective world will have no trouble with that.

The problem arises largely from the use of the word 'observer'. This directly implies the separation or dualism of observer and observed, subject and object, which itself forms a central part of Newtonian or old physics.

A path to an answer lies in abandoning this split between subject and object and conceiving rather of 'events', in which subject and object both take part. Every 'event' has multiple antecedents or 'causes', and multiple consequences, or 'effects'. (The quotation marks indicate that these terms need more extended unpacking and careful definition.) Causes and effects are likewise events. In the absence of a subject there are no events, only processes. With this model, the Newtonian world view is replaced not, as Max asserts, by a *relativistic*, but by *aparticipatory* and ultimately creative view of reality. To establish truth criteria for this expanded science is a current challenge.

Not only that, the 'events' and the links between them form nothing more nor less than a network. So this member is very happy to let the word 'Network' stand for his point of view!

A Response to John Rowan

- from John Heron, *Podere Gello, San Cipriano, 56048 Volterra, Italy*

In his letter in Network 70, August 1999, John Rowan, in his defence of Wilberian orthodoxy, entirely misrepresents my view of Ken Wilber. First, he writes that I have no respect for Wilber. The truth is, of course, that it is precisely because I respect his work and take it seriously, that I engage in rigorous criticism of it. Wilber himself understands this, and in August 1999, he and I exchanged cordial invitations to each other to receive hospitality at each of our respective homes. The invitations were posted in the Reading Room of the website called The World of Ken Wilber.

Second, John says I try to prove there is no good in Wilber at all. Not so. In my review of *Sex, Ecology, Spirituality*, circulated on the web, I affirm a whole range of issues raised in that book which I think are of interest and worthy of consideration. This is the second time, of which I am aware, that John has defended Wilberian orthodoxy by misrepresenting me. On the first occasion, he even went so far as to say that one of my books, which included a criticism of Wilber, contained only references to my own work, when in fact it had 135 references to the work of others, including John himself. The criticism itself he did not attend to.

On both occasions he has felt the need to give an elaborate account of how his own experiential journey has been guided by Wilber's work. But, of course, there are also many people who do not find that Wilber's work illuminates their spiritual path. In any case, the personal witness of disciples is never an adequate response to specific criticisms of their teachers' ideas, any more than a committed Catholic bearing witness to the personal impact of the Pope's work deals with particular objections to papal edicts. John, in fact, simply avoids dealing with my criticisms.

Wilber is ultimately a religious dogmatist, elevating one particular traditional spiritual world view into an absolute status. The arguments he uses to justify this elevation are, in my view, specious. They simply won't do. More and more critics of his endeavours are pointing this out. Furthermore, in terms of spiritual practice, Wilber espouses the elitism of the oriental traditional of spiritual masters - 'my Master is my Self' - which itself rests on an out-of-date theology, the promotion of which cannot possibly serve the advancement of contemporary spiritual studies. The problem is that these two crucial points, in their baneful impact, simply overshadow so much else of interest that he has written.