



## THE NATURE LABORATORY

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Dear Shri Nanaji Kale and Mr. Mrugendra Vinod,

Namaskar. At the beginning, please accept my apologies for so long period since your letter have been sent without my answer. This summer I was engaged in numerous environmental field projects, demanding urgent action, and preparing some new perspectives here in Poland. And in our climate, summer is just the only season when the majority of field studies in my professional area may and should be done. Now, with first unexpectedly early snowfall in last days, I have finished this extremely busy period of field studies.

I was very glad when receiving your letter. With your perspectives both into academic and Vedic sciences, and experience in Vedic practices, your - wise in my perception - questions are interesting and difficult. Difficult, because we - it means you, me, all communities of Vedic and academic scientists - do not know the real, true answer. There were no experimental studies on some issues, and our interpretation of the content of ancient Vedic scriptures is still far to be fully understandable. And interesting, because - as I feel them - they constitute an important contribution to what should be done, what studies we should perform, which topics should be discussed at workshops where people of different scientific perspectives meet each other, and what kind of working hypotheses might we formulate for such a dialogue.

Also, as these questions demand a more thorough thinking, I preferred not to answer them in simple words only, being busy with another duties.

Therefore I will try to answer your questions, not giving definite answers, but expressing my opinion which might serve as a background for further discussions, with more people of different views and experiences might contribute to make the answers more comprehensive and define entries to continue future research.

Of course, I fully agree that Yajnya is much more than physical processes, at least within the framework of our contemporary understanding of the content of "physics". But when you look at the history of development of this branch of science, you will find new discoveries, new revolutionary concepts, which have arisen from observations of previously unexplained phenomena, experiments and so on. Only two hundreds years ago the science had no idea about electricity, and now we even cannot imagine our life without it! The recent achievements of quantum physics not only explain existence of previously unknown particles and energies, but change our perception of the real, or material world in such extent, than it is even difficult to teach the new vision in schools; our cultural limitations make still the majority of people not ready to comprehend new discoveries.

This is no mere coincidence, that some prominent quantum physics scientists were also interested in Vedic science. Just Vedic scriptures provide us with this perspective, which remains non-understandable by people not prepared for it. And this preparation, in my opinion, may be achieved from two sides. First is just the Vedic meditation. Spiritual masters obtain a high level of comprehension, feeling and intuition about the world, but it is difficult - even for them - to express this knowledge in our contemporary, common linear languages; it may be even impossible without loss of important content. And the second side is experimentation, thinking, logical explanation of particular phenomena, which simply must be isolated from their context, from the greater whole, to be explained in terms of our linear text and mathematical formulas. This is also inevitably connected to loss of important content, but different than in the former case.

Therefore, being conscious of this, for me it is very important to combine both perspectives for comprehending the real world and to interact with(in) it. This is the most promising way for real achievements, benefiting the world and the humanity. This was even explained by Carl Jung in his "mandala" of ways of knowledge: for full comprehending we need four ways: feeling and thinking, sensing and intuition, with no discrimination of any of these ways, to know the world and ourselves. This makes the content and perspective of real Holistic Science.

Then, physical processes which we can measure now, with our senses and meters contemporarily available, can serve as indicators of some more processes acting on a higher level behind. The physics is not a closed and finished world, but a path, showing that there is something more. Something more, what we do not fully understand, what we still cannot describe in terms of our formulas. Now, it means that in future such description may become available - but not till the end, till the Primary Source. Academic science never explains everything; with its development, we asymptotically come closer to the true understanding, but never achieving the Ultimate Knowledge.

Physical measurements - and models based on them - can show the points, where there is evidence of something more than we could explain, exists. They allow for asking new questions. These questions, in turn, lead us to further development of science, to discover new kinds of energies... just to discover, that in Vedic scriptures these energies have been mentioned already. But we were too blind to find them earlier there.

Subtle factors like Purity and Virtue, brought by a Qualified Yajaman: yes, it is a very important perspective. The science you (and me) have been taught in schools, claimed that any (physical, chemical, biological...) processes in the real world were not related in any way to the doer, or experimenter. Even they taught us, that when our influence is evident, therefore the experiment is false, or done in a wrong manner. But this is not the case in contemporary scientific achievements. This is our lesson from the quantum physics: the observed and the observer are interrelated.

When some years ago I with my many students did a large series of experiments on absorption of contaminants from river water by sediments, I had found with a great surprise, that the main factor determining efficiency of absorption was... which student had prepared water solutions to be measured. Yes, there were students who always obtained good results. Previously I thought that it might be a result of some imprecision in work of some of them; there are people who usually are less careful in their work than others; but definitely it was not the case. And even psychic status of a student might influence the result: one of best experimenters had obtained very low absorption rates in her experiment, which she did a day after breaking of her personal relationship...

Then, I have learned in many other cases, that personal qualities brought by a performer of any experiment, any event, are important prerequisites of the final result. There are more and more

scientists who became convinced in this issue. This is also the issue of performing Vedic rituals: I was impressed by precision of every movement, every chant by all pundits when observing the Somayag ceremony in Maheshwar. Also, it is the issue in your long training to become a qualified yajaman: to learn to concentrate, to avoid disturbing emotions, to bring best possible inherited qualities and so on.

And even these personal qualities can be detected and measured physically, what I had done with the life energy meter; some other equipment can measure another factors. Of course, these measurements do not provide the whole energetic picture of a person; I agree with you that some energies operate at another levels, with another vibration frequencies, which still are unavailable for our physical detection (these planes are perhaps very far from the physical plane). But even these "harsh" measurements, although not explaining everything, may be good indicators of these factors, which operate at planes unavailable for science so far. Maybe these planes will become available in future, with new scientific achievements?

These personal qualities, inherited and/or learnt by a Brahmin qualified as yajaman, can be seen, or felt, by some conscious people; Mr. Hari Apte is such a person, and his "seeing" was consistent with my measuring. Then, if the majority of people are "blind" for these qualities, and if our culture need a material proof, these measurements may provide such a proof, of course, with restriction that it is not the whole picture.

I can compare my measurements to the perception of colours, in which we see our world: we can see what is red, orange, yellow, green, blue, violet... but it is not all, these objects have also their frequencies in infrared and ultraviolet ranges. It does not mean that our sight or pictures from a photo camera are wrong; they give us only a limited spectrum of radiation. And a bee, or an owl, who can see these spectra, could say us that we are unable to see all qualities of the world. But for us, usually it is sufficient to live within...

Then, your second question: if we agree that a performer can influence the result of his performance, then, according to laws of interaction, this result should also affect the performer. Then, your statement is true. Of course, the main effects probably are still in planes which remain unavailable for physical measurements, and therefore we still cannot discuss them in scientific terms. But there are also secondary effects at measurable planes, and these measurements can serve us as indicators that a feedback is provided and something more than we can see is going on.

This experience, compared to your Vedic knowledge, may open new ways of searching for another energies, which will contribute to further development of our scientific understanding. It may have also a great philosophical impact: showing that there is a world with important qualities beyond our perception, which are much more evident and real than a content of our personal or collective beliefs.

Next two your questions are about cosmology. Perhaps I am not the best person to address them, as my field of professional competence are life and environmental sciences. But as I know, there already were some attempts to explain how Vedic texts informed us about our Universe, as well as about the world of sub-atomic particles. It appeared astonishing, how the Vedic viewpoint was consistent with the newest discoveries and achievements of academic sciences. Of course, science is continuously developing, and Vedic scriptures, read from still another perspectives appear to be an immense source of knowledge, perhaps such studies should be continued. And I think that there are scientists who would be very interested in such a project. Perhaps next month I will try to consult these questions with one of cosmologists at the University of Toruń, who, as I remember, some time ago was interested in Vedic cosmological issues.

Next issue you have pointed out, is information as a trigger for energies and observed physical phenomena. It is consistent with contemporary discussions about functions within ecosystem models. Old models informed us about circulation of matter and flow of energy. From the 80's a third constituent became gradually added to these models: information. Although contemporarily we live in a "culture of information", the meaning of 'information' still remains quite elusive. In most cases, we still are not able to detect existence of 'information' directly, and derive it from patterns of 'energy', which is more measurable. That is why any system studies still are dealing more with energies.

When we reminder the history of system studies, primarily these all were about matter. Energy was derived from behaviour of matter. Then we started to make direct measurements of various kinds of energy; even now, in my opinion, we do not know all of them, which might be relevant and important. With information, we are now at similar level of understanding, as we were forty years ago with energy. But science is developing...

And here I see a huge possibility of inspiration load from Vedic sciences: what is information in Vedic meaning? what kinds of information may be distinguished according to Vedic texts? How information is bound to energetical patterns, described in Vedic context? This is just an important scope of work for interpreters of Vedic knowledge.

As you already can deduct from all above, I agree with you that a rain event cannot be understood only in terms of millimetres of water. This is also energy, and this is also information. Information in many forms: for plants to open their stomata, for seeds to start germination, for frogs to reveal their sexual behaviour, for people to be happy with prospective crops, or to worry of a destructive flood, and so on... Why the same amount of rainfall entering a lake in one case led to development of a toxic cyanobacterial bloom, and in another case appearing diatoms resulted in better growth of fish populations, as their indirect source of food? This may be explained only if considering different informational qualities of both rain events.

And if we agree that everything is interrelated, that everywhere we have feedback loops, that consciousness may be primary over matter, than we also should agree that information remains the main driving quality in development of all natural systems. Let this opinion remain a tribute to one of my masters, Professor Brian Goodwin, who died some month ago, who introduced and developed the term "science of qualities", making them an important approach in contemporary science. This approach, which in interpretation of our world puts more attention on qualities of phenomena than only on measured quantities, is another step making academic science more close also to Vedic viewpoints.

And the last remark: in the light of your thoughts, the above explanations, and previous results of studies, it seems to be important to formulate a working hypothesis for further studies about effects of Vedic ceremonies on environmental systems (logical and mathematical derivations were omitted here):

The main output of Vedic ceremonies is to provide information and to decrease its entropy (increase its order). Therefore these ceremonies regulate performance of the whole system by contradicting the growth of entropy, which - according to the 2nd law of thermodynamics - is always connected to spontaneous system transformations.

Undesirable (chaotic) growth of entropy may be reduced by an external regulating factor (as the Sun for the Earth system), but if the regulated (Earth) system become more diverse and chaotic, the

ability of constant inflow from the regulating (Sun) system may be not sufficient to restore original (desirable) low level of entropy.

In terms of the chaos theory, the output of a Vedic ceremony becomes a strange attractor, which regulate the performance of the whole system, becoming a node of organization of its development.

Although energy is also produced (transformed) and can be measured, it serves mainly as a specific carrier and indicator of the information. Therefore increased information is the factor active at higher (immeasurable) level(s) of existence, which may be not limited to space-time framework, and energy, as its carrier at the physical plane, may be observed as its indicator.

This framework, joining both academic and Vedic viewpoints, may become the framework for further experimental studies.

Generally, any interaction, discussions, common projects which integrate academic and Vedic approaches I consider as especially stimulating and worth promotion. This is the best possible way to combine contemporary and traditional knowledge in order to substantially improve our living conditions and make our planetary system more sustainable and our communities less susceptible to various kinds of environmental disasters.

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Now I consider my next visit to India, from January till March next year.

After elaborating of previous results, some studies in Europe, some new papers read, I feel myself ready for next challenge, to perform some new experimental studies and to discuss various issues of Vedic ceremonies with Indian Vedic and academic scientists, and with performers of these rituals. I hope that such a visit will provide some new documented evidence of environmental effects, some scientific results ready for a more serious publication, new understanding, exchange of views and ideas.

Also, some studies and discussions should substantially contribute to your Vedic Rain Induction project.

I hope that some expected results, obtained with use of scientific methodology, and their further discussion, will be able to help in convincing Indian official institutions and funding agencies, that Vedic ceremonies with their detectable beneficial effect on the environment, ecosystems and agriculture, are much more then mere religious events, and therefore should be promoted and supported in order to improve environmental quality, crops and sustainable development of communities in India, being also the Indian contribution to environmental enhancement at international level.

Also, I consider to participate with a lecture in the International Conference on Integration of Nature Conservation, Restoration, and Spirituality for World Peace, planned for 15th January 2010 at the Sri Krishna Matha, Udupi, Karnataka.

Are you interested in conducting some new, more advanced measurements, contributing to your actual project? Can you organise some meetings - discussions, workshops, lectures, where I could present my data, learn new knowledge from you, and participate in discussions of results, also in

planning new collaborative projects, or provide some training in measurement methodology? I am open for participation in such events during my visit, and we can discuss all particulars before it.

I would be glad if you are able to participate in at least some costs of my visit - costs of accommodation (or provide it free), internal travel, materials for experiments, and/or partially participate in costs of air travel from Poland to India. I would appreciate every support, leading to new investigation results of good quality.

Having a sufficient support, I would be able also to invite my collaborator, Dr. Bozena Wujec, to perform also some psychological and bioenergetic studies on effects of Vedic ceremonies on their performers and participants, which were started (in a limited extent) during our work in Maheshwar. These studies would bring some more human perspective on the results, which I alone would be unable to perform.

Please let me know your opinion about such a cooperation in your earliest convenience; this will allow me to plan the visit in details, in order to obtain optimally organised outputs.

Also, if you (and the professors engaged in the Rain Induction Project) would like to enjoy my visit and cooperation, please write me a more official opinion/letter of invitation. This will help me in obtaining some additional funds from other sources.

Best regards,

A handwritten signature in black ink, appearing to read 'Wojciech Puchalski', written in a cursive style.

Wojciech Puchalski

P.S. Just attempting to send you this letter, I have got a message from Lynne McTaggart, the leader of the international Intention Experiment. She informed about the last result showing that a collective intention, sent by some thousands people from various places of the world in the same time, may significantly change energetic properties of a water sample, exposed that time in one laboratory in United States. See <http://www.theintentionexperiment.com/results-of-the-clean-water-experimentof-glowing-light-and-alchemy.htm> for details.

You can see there results of meditation of inexperienced people, just volunteers. And what if the performers would be trained and experienced yajamen?