Erwin Schrödinger and the Upanishads

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A metaphysical epitaph

So that which is is not because we feel it.
And it is not nothing because we don’t feel it any more.
Because it is, we are, and thus continue to be.
So all Being is an one and only Being.
And that it continues to be when someone dies
Tells you, that he did not cease to be.

- Erwin Schrödinger 1942
Schrödinger and Indian Philosophy: a Road Map

- 1 Schrödinger’s Life, and First Contacts with Indian Thought
- 2 Against Syncretism
- 3 The Basic Experience
- 4 Criticism of the Mâyâ veil (1): the many-minds illusion
- 5 Criticism of the Mâyâ veil (2): the many-bodies illusion
- 6 Embodied Ethics
- 7 Science and Indian Philosophy
Elements of biography

- Erwin Born in Vienna 1887
- University of Vienna 1906. First readings: Greek pre-socratics, Plato, Hume, and Indian philosophy as early as 1905 (diary)
- Training in physics: school of Boltzmann, and influence of Mach
- Research from 1911: theory of fluctuations in statistical mechanics, general relativity, psycho-physiology of sensations, atomic physics
- 1st world war as an artillery officer in the austro-hungarian army
- 1918: Philosophy, especially Schopenhauer, and many trends of Indian thought
- 1926 (Zurich): Wave mechanics and the equation
- 1935 (Oxford): The cat’s paradox
- 1940 -1956 (Dublin); “Mind and Matter”, “What is Life?” etc.
Early readings in Indian philosophies

- Henry Warren (1896), Max Walleser (1904), T.W. Rhys Davids (1877), and Richard Pischel (1910) about Buddhism. Lafcadio Hearn about Zen Buddhism.
- Richard Garbe (1894) about the Sankhya doctrines, Paul Deussen (1906) about Vedânta, and Max Müller (1880) about the religions of India.

Max Müller (1823-1900)
“The bridge of thoughts and sighs that spans the whole history of the Aryan world has its first arch in the Veda, its last in Kant's Critique”
“Physical science (...) faces us with the impasse that mind *per se* cannot play the piano - mind *per se* cannot move a finger or a hand. Then the impasse meets us: the blank of the ‘how’ of mind’s leverage on matter”

*No possible scientific solution of this problem* (in principle, by construction of science!)

“To realise this is valuable, but it does not solve the problem. (...) Scientific attitude would have to be rebuilt, science must be made anew. Care is needed”

*By contrast, the solution of the mind-body problem is contained in the Upanishads (Mind & Matter, chapter 4).* The West may need “a bit of blood transfusion from eastern thought”

“That will not be easy, we must beware of blunders - Blood transfusions always need great precaution to prevent clotting. We do not wish to lose the logical precision that our scientific thought has reached, and that is unparalleled anywhere at any epoch”
“It is certain that the earth will give birth to you again and again, for new struggles and for new sufferings. And not only in the future: it resuscitates you now, today, every day, not just once but several thousand times, exactly as it buries you every day several thousand times (...). (For) the present is the only thing which has no end”

Yet, according to Schrödinger, there is nothing substantial to be transmitted from one living body to another. See Hume and Mach. No metempsychosis. A critical, Buddhist-like view of reincarnation?

But simultaneously, strong Upanishadic belief in the reality of the Universal self…
Schrödinger had no practice of Yoga. But he insisted on the realization of the lived unicity of consciousness. *No reasoning can prevail against this experience.* “(...) the reasoning is part of the overall phenomenon to be explained, not a tool for any genuine explanation”

“In the same way as a man in the arms of a beloved woman knows nothing of the difference between the internal and external world, somebody who is immersed in the fully lucid Atman knows nothing of the difference between the internal and external world. He is in the blissful state wherein any desire is fulfilled (...) wherein there is no desire any longer”. *Brihad Aranyaka Upanishad IV, 3, 21*

“Love a girl with all your heart and kiss her on her mouth : then time will stand still and space will cease to exist”. E. Schrödinger, 1919

“I looked into your eyes and found all life there, that spirit which you said was no more you or me, but us, One mind, One being (...) For two months that common soul existed. (...) You can love me all your life, but we are Two now, not One” Sheila May, 1944
“The human being who has never realised the strange features of his own condition has nothing to do with philosophy”

Self-made Koans

- “A hundred years ago, perhaps, another man was standing on this spot; like you he gazed with awe and yearning in his heart at the dying light on the glaciers. (...) Was he someone else? Was it not you yourself? What was the condition for making the creature born this time into you, just you and not someone else?”
- “Looking and thinking in that manner you suddenly come to see, in a flash, the profound richness of the basic conviction in Vedânta”
- “This unity of knowledge, feeling and choice are essentially eternal and unchangeable and numerically ONE in all men nay in all sensitive beings (...). This life of yours that you are living is not merely a piece of the entire existence, but is in a certain sense the WHOLE”
The illusion of plurality

- Plurality of minds in the living bodies, and plurality of things in the material world

- “what seems to be a plurality is merely a series of aspects of one thing, produced by deception (the Indian Mâyâ)”

- “Myriads of suns, surrounded by possibly inhabited planets, multiplicity of galaxies, each one with its myriads of suns (...). According to me, all these things are Mâyâ, although a very interesting Mâyâ with regularities and laws”.
Arguments for the « doctrine of identity »

- “The doctrine of identity can claim that it is clinched by the empirical fact that consciousness is never experienced in the plural, only in the singular. Not only has none of us even experienced more than one consciousness, but there is no trace of circumstantial evidence of this even happening anywhere in the world.”

- So, why do we come to believe there are several consciousnesses located in the bodies of living beings?

- “When in the puppet-show of dreams we hold in hand the strings of quite a number of actors, controlling their actions and their speech, we are not aware of this being so. Only one of them is myself, the dreamer. In him, I act and speak immediately, while I may be awaiting eagerly and anxiously what another will reply (...). That I could really let him do and say whatever I please does not occur to me (...).”

- A dreamer who just happens to dream its own plurality, and has each individual as a character in his dreamt theatre...
Subjectivity and objectivity: why the illusion was bound to appear

- Start from the basic experience: a sentient and thinking domain identical with the whole world “(...) and which therefore cannot be contained as a part of it”.
- In order to master “(...) the infinitely intricate flux” of appearance, we cannot content ourselves with mere adhesion to this experience of unity.
  1. “We step with our own persons back into the part of an onlooker who does not belong to the world, which by this very procedure becomes an objective world”
  2. Once this is done, my own body becomes part of the objective world; and since I experience consciousness, I conclude that my objectified body is the bearer of a consciousness.
- By symmetry, I also infer that similar bodies (essentially human) are also the seats of consciousnesses to which I have no direct access.
- *I project consciousness into the very objective world which it had initially produced by excluding itself from it.*
A twofold mistake

- One-one correspondence with the “twofold mistake” of Kashmir Shaivism (*Abhinavagupta*)

1) “(...) the compelling belief that entities which by appearing are not different from the [luminous] Self, are the [locus of the] non-Self”. In so far as they appear, entities are not different from the “luminous Self” or pure consciousness. The first mistake is to believe they are autonomous things.

2) The second mistake takes advantage of the first. It is “darkness upon darkness”. It occurs when “the Self is thought to be located in the non-Self — the body, breath, etc.”
A “pandemonium of disastrous consequences” of this twofold mistake:

About qualia, mind-body problem, and ethics

- **Qualia**
  - “Colour and sound, heat and cold, are our immediate sensations. Small wonder that they are lacking in a world model from which we have removed our own mental person”
  - Any attempt at accounting for *qualia* by means of neurophysiological reductionism (part of our world model) is then doomed to failure *in principle*
A “pandemonium of disastrous consequences” (2)

- **Mind and Matter**

- “The objective world has only been constructed at the price of taking the self, that is, mind, out of it, remaking it; mind is not part of it; obviously, therefore, it can neither act on it nor be acted on by any of its parts”.

- If this problem of the action of mind on matter cannot be solved within the framework of our scientific representation of the objective world, where and how can it be solved?
A participatory solution

- “(i) My body functions as a fine mechanism according to the laws of nature. (ii) Yet, I know by incontrovertible direct experience, that I am directing its motions”.
- “The only possible inference from these two facts is, I think, that I - I in the widest meaning of the word, that is to say every conscious mind that has ever said ‘I’ - am the person, if any, who controls the ‘motion of the atoms’ according to the laws of nature”.
- This is not to say that it is the individual “I” which in some way controls the world. The individual “I” is but an aspect of the whole which is identical to the universal “I” of which the world is also a projected aspect.

Kant: Determination qua phenomenon, freedom qua noumenon

Schopenhauer: world as representation, world as will
Consequences: Unity beyond plurality

- “An Indian metaphor refers to the plurality of almost identical aspects which the many facets of a diamond gives of a single object, say the sun”

- “The personal self equals the omnipresent, all-comprehending eternal self”.

- “Atman equals Brahman” (Wester version: “Deus factus sum”) : “The second Schrödinger’s equation”!
A “pandemonium of disastrous consequences” (3)

- **Ethical**

  “Dear reader, recall the bright, joyful eyes with which your child beams upon you when you bring him a new toy, and then let the physicist tell you that in reality nothing emerges from these eyes; in reality their only objectively detectable function is, continually to be hit by and to receive light quanta. In reality, a strange reality! Something seems to be missing in it”.

- Loss of insight about our real identity with all the other beings may result in a conflict between our feelings for other beings and our objectivistic conception of what they are.
The many-bodies illusion

- To Schrödinger, the common sense conception (many bodies that impinge on our senses) is the result of our endowing with intrinsic existence the aspects of phenomena that we have *isolated* by objectivation, providing them with *fake autonomy* with respect to perceptions and emotions. But there is no real duality between these objects and ourselves.

- “No single man can make a distinction between the realm of his perceptions and the realm of things that cause it, since however detailed the knowledge he may have acquired about the whole story, the story is occurring only once and not twice. the duplication is an allegory suggested mainly by communication with other beings”
Critique of the thing in itself

- The claim that objects exist beyond our representation, causing it in us, appears superfluous to Schrödinger. It does not even explain inter-subjective agreement. It just duplicates its mystery by another mystery: a thing-in-itself which is inaccessible, except by means of the very representation it is supposed to cause.

- Causality is a category applying to relations between successive phenomena. It would be abusive to apply it to the relation between phenomena and something which transcends them.

- To Schrödinger as to Schopenhauer, the world is the representation itself; it is not an elusive something beyond the representation.

- Even objectivity has been reached by a process which is immanent to representation; no reference to a transcendent thing.

- The practical success of objectivation favours the illusion of a transcendent world of intrinsically existing objects. This is a collective dream prompted by social conventions of language and science. ➔ AVIDYA
A comparison between materialism and Advaita Vedânta

- Both doctrines have “mystical and metaphysical aspects”
- Materialism is just *as* mystical and metaphysical as Vedânta’s doctrine of identity.
- It is metaphysical because it relies on the idea of an entity, matter-in-itself, which transcends the phenomena.
- It is mystical because it postulates that phenomena arises from this unobservable entity (unobservable *apart* from the phenomena!)
- The Vedântic *doctrine of identity* is better than materialism on two points:
  1. It makes sense of the very fact of experience, and not only of the relations between its components.
  2. It is intrinsically ethical, whereas *materialism* is ethically neutral.
Coming back to the ethical lacuna of science

- “(Science) gives a lot of factual information, puts all our experience in a magnificently consistent order, but it is ghastly silent about all and sundry that is really near to our heart, that really matters to us. It cannot tell us a word about red and blue, bitter and sweet, physical pain and physical delight; it knows nothing of beautiful and ugly, good or bad, God and eternity. Science sometimes pretends to answer questions in these domains, but the answers are very often so silly that we are not inclined to take them seriously”

- In ethics, materialism leads to a sort of utilitarian book of recipes. By contrast, the Vedântic doctrine of identity, and the Buddhist critique of the substantial self, incorporates what Francisco Varela called an “embodied ethics”.

- When you know by direct intuitive evidence either (a) that you are one with every sentient being or (b) that nothing substantial makes you distinct from the other sentient beings, being good with others is a matter of course.
Time, now, and (non-)death

- “I venture to call (the mind) indestructible, since it has a peculiar time-table, namely Mind is always now”
- “(...) what we in our minds construct ourselves cannot, so I feel, have dictatorial power over our mind, neither the power of bringing it to the fore nor the power of annihilating it”
- Schopenhauer: “If a person fears death as his annihilation, it is just as if he were to think that the sun can lament in the evening and say: ‘woe is me! I am going down into the eternal night’”
- “If you have to face the body of a deceased friend whom you sorely miss, is it not soothing to realise that this body was never really the seat of his personality, but only symbolically, ‘for practical reference’?”
Schrödinger’s physics and Indian philosophies

(1) Reasons not to mix them up

- Science tends to amplify the metaphysical illusion of everyday life;
- This amplification is among the reasons of its achievements.
- Illusion can be useful, as a way to promote an attitude of commitment with the tools and objects by which we can transform this very illusory world.
- Hence Schrödinger’s prudence, hence also his tendency not to mix up his own work in physics with his Indian-like philosophical insights.
Schrödinger’s physics and Indian philosophies (2)
Connections, nevertheless

- Heisenberg: the barrier between the cartesian *Res cogitans* and *Res extensa* has fallen down.
- Schrödinger: speaking of the collapse of the separation between subject and object is absurd because there never has been such a separation.
- Subject and object *are but One*.
- Quantum mechanics has not broken a pre-existing barrier between subject and object. It has brought out a situation wherein the old procedures of *objectivation* (out of primeval unity) do not work any longer.
- Also, Schrödinger’s holistic style in theoretical physics: “Particles are but wave-crests, a sort of froth on the deep ocean of the Universe” (1925)