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Rabindranath Tagore’s Belief in Holistic Science

Tagore’s Warning of Science

Rabindranath Tagore’s attitude to Science was ambivalent. In 1933, he published a brief essay under the title „Can Science Be Humanized?“¹ The title itself shows that Rabindranath was sceptical of the moral essence of Science. What he was alluding to was Science as developed and taught and put to practical use by „the West“. The entire complex of emotional reservations towards „the West“ – its rational attitude which so often revealed a cold, calculating, heartless mind – was a subtext of Rabindranath’s reservations to Science. However, Rabindranath did not fear or disapprove of Science *per se* of which we shall give ample proof hereafter.

But Rabindranath knew that Science will not remain pure knowledge because the human mind will press forward to make such scientific knowledge applicable in what Rabindranath often termed „the Machine“. The Machine is a symbol of technology which makes Science practical and useful in human life, but which is also in great peril of spinning out of control by human beings.

Having created „the Machine“, men are, in the first place, no longer in control of the impact of their creations; secondly, men do not find it easy to control themselves. Tagore observes, „Today the profit that the machine brings to our door is too big and we do not hesitate to scramble for it even at the cost of our humanity.“² The innate propensity of the Machine is to accelerate and multiply the processes of production; men’s greed is willing to accept and promote this propensity. The Machine may ultimately dominate men. Tagore continues: „The

shrinking of the man in us is concealed by the augmentation of things outside and we lack the time to grieve over the loss.“³

These are quotes culled from the essay mentioned above, „Can Science Be Humanized?“, published in 1933. But already during his visit to the United States of America in 1920-21, Tagore mentioned the effect that technological advancement has on the spirit of man. In a letter to C. F. Andrews he emphatically writes: „To me humanity is rich and large and many-sided. Therefore i feel deeply hurt when I find that, for some material gain, man’s personality is mutilated in the Western world and he is reduced to a machine.“⁴ By allowing themselves to be dominated by the Machine, men become machines themselves.

Rabindranath feels that technology can be put to good use only if men are able to control it: „There is no meaning in such words as spiritualising the machine; we can spiritualise our own being which makes use of the machine [...].“⁵ Hence, the only redemption of Science is not the transformation of Science, but it is the transformation of mankind to make it capable of using the applications and profits of Science sagaciously.

Rabindranath saw the abuse of Science especially in the fabrication of machinery to establish political power over other nations and peoples and in the manufacturing of military arms and their use in warfare. In his last public address, *Crisis of Civilization*, delivered in early 1941 while World War Two was raging in Europe, that is six months before his death, Tagore again mentioned to his Santiniketan audience „the machine“ which was capable of both supressing people as well as liberating them. He mentioned Japan and Russia where scientific progress had contributed to prosperity, to the fight of disease and illiteracy.⁶

In another essay, „The Place of Science“⁷, which was a lecture delivered in the technologically advanced Japan in 1924, Rabindranath’s advice is explicit:

Never think that your mission to-day is to imitate the West. I do not belittle any lesson that you may accept from western countries. They have also in their keeping some aspects of truth which are most valuable, and truth should be accepted from all sources. Science is valuable, -- but the mind which makes use of it for a particular purpose may not be so.⁸

Rabindranath goes on to explain the ambivalence of Science in words more radical than he is normally prone to use:

This science is a great thing. It has come to man as a magnificent wealth. But directly it appeared to bless the human world, the devil got hold of it. He is making full use of it, in the shape of destructive weapons, poison gas and the engines of exploitation. Through this contact with the spirit of evil, the face of science has been distorted, its gestures have become satanic. Let it be for you to prove that it is an angel of light, beautiful and serene. You have to rescue this great truth of the present age from misappropriation by the evil spirit of man.⁹

Tagore exhorts his Japanese audience to rescue Science from „the West“ and „restore [it] to its purity and greatness“¹⁰. In the spirit of the pan-Asian cultural identity, which Tagore propagated, he continues:

It is you who can do it, because you have this western intelligence, this energy, this efficiency of workmanship, and at the same time your eastern nature, which has its respect for ideals, its love of honour, the eastern mind which sets more value on the spirit of man and its fulfilment than any external success.¹¹

A decade earlier Rabindranath expressed a similar hope with respect to the village people around Santiniketan. In a letter to C. F. Andrews he writes:

Thousands of acres of land are tilled, so that a University can be maintained upon one acre. Yet these men are insulted merely because while they are so absolutely necessary, it is their necessity to live that drives them to this position. They are in their place because they cannot help it.

We all hope that here, at this very point, Science in the end will help man. She will make the necessities of life easily accessible to every man, so that humanity will be freed from the tyranny of matter which now humiliates her.¹²

Thus, Rabindranath sees the proper use of Science in „the cultivation of science [...] in the rescue of man from the outrage by Nature [...], to harness the forces of Nature in man’s service.”¹³

Rabindranath’s drama *mukta-dhara* (1922; *The Waterfall*) is a case in point of how he visualises the threat of technology. King Ranajit builds a mighty damn across a waterfall to prevent the water from reaching the people of Shivtarai who depend on the water for their survival. The damn is seen from afar as ‚the Machine‘. The opening dialogue is an evocation of the typically Tagorean dread of technology: A citizen of Uttarakut explains to a stranger passing by:

Citizen: The Royal Engineer, Bibhuti, has been working at it for the last twenty-five years. It’s just been finished. A festival is now being held in honour of the occasion.

Stranger: What's the object of the Machine?

Citizen: It has bound up the waterfall of Muktheadhara.

Stranger: What a monster! It looks like a dragon's skull with its fleshless jaws hanging down! The constant sight of it would make life within you withered and dead. [...] this isn't a thing to put up nakedly before the sun and stars. Can't you see how it seems to irritate the whole sky by its obtrusion?"¹⁴

Characteristically, Tagore pits the ugliness of technology against the awe-inspiring greatness of Nature.¹⁵ The ugly structure looms large on the horizon throughout the play as an ominous symbol of power. At the end, Crown Prince Abhijit is instrumental in pulling down the Machine and the free fall of water – the symbol of freedom – prevails, but at the cost of Abhijit's life.

Tagore's Support of Western Science and of Scientific Temper

Rabindranath Tagore's family cultivated a scientific temper in Rabindranath from an early age. The first essay the young Rabi wrote was on astronomy. In his adult life, when already a famous poet in Bengal, he strongly supported scientific inquiry, for example the work of the physicist Jagadish Chandra Bose. While in London in 1920, he visited the observatory in Greenwich. In 1926 and 1930, Tagore met and discussed science with Albert Einstein (to which I shall return later). Rather late in life, when he was in his seventies, Rabindranath took up the study of science and produced a primer on the natural sciences for his students in Santiniketan entitled *visva-paricay* (1937), translated as *Our Universe*. The German physicists Arnold Sommerfeld and Werner Heisenberg met Tagore, the former in Santiniketan in 1928 and the latter in Kolkata in 1929.

From his youth, Rabindranath Tagore was inclined towards *keen observation* which I see as the prerequisite for a scientific temper. In February 1873, when Rabi was a mere 11 years, he was taken to Santiniketan for the first time by his father Debendranath. They had reached Bolpur railway station in the late afternoon while the sun was already setting. Santiniketan is a mere three kilometres away. He got down at Bolpur at twilight and he shut his eyes, so as to preserve the wonders that were to come until he could see them fully awake.¹⁶ Next morning, he discovered the wide, barren landscape, the solitude – and his freedom – with a fresh and precise mind. From Santiniketan, his father took Rabi to Amritsar in the Panjab. He read Richard A. Proctor's *Popular Astronomy* which Debendranath explained to the boy in simplified language.

While in North Bengal, at Shelidaha, looking after the landed property of his family, Rabindranath tried to organise poor village people into cooperatives; he established rural banks and health services, thus betraying a modern scientific mind. When he settled at Santiniketan in 1901, he with the help of Indian and foreign co-workers began to organise the health and the agricultural production of the surrounding villages according to the knowledge of modern science. Sriniketan, the rural centre adjacent to Santiniketan, was established for the uplift of the rural economy. It was in order to benefit from scientifically conducted agriculture that Tagore sent his eldest son Rathindratah to the University of Urbana in the American Mid-West to study agriculture.

It is worthy of note that Rabindranath rarely wrote about teaching science subjects to his students or about discussing Science at his Visva-Bharati. Of all the foreign scholars he invited to his University to give guest lectures, there was – to my knowledge – none who specialised in science subjects. Tagore's most comprehensive lecture on his educational ideas, „My School“, which he delivered

in the United States in 1916, touches upon science teaching just once. Here the poet gives a telling example of the difference between „dead Science“ and what I term „Holistic Science“. Rabindranath relates the story of a headmaster rebuking a boy who climbed a tree and chose a branch to sit on and do his studies.

Rabindranath in turn has to explain to this headmaster that „childhood is the only period of life when a civilized man can exercise his choice between the branches of a tree and his drawing-room chair and should I deprive this boy of that privilege [...] ?“ Then Rabindranath continues: „What is surprising is to notice the same headmaster’s approbation of the boy’s studying botany. He believes in an impersonal knowledge of the tree because that is science, but not in a personal knowledge of it.“¹⁷

Rabindranath praises the „instinctive knowledge“ of a tree because such knowledge is fruitful, it obtains direct practical results as well as emotional fulfillment. Rabindranath concludes: „[...] I consider it as a part of education for my boys to let them fully realize that they are in a scheme of existence where trees are a substantial fact not merely as generating chlorophyll and taking carbon from the air, but as living trees.“¹⁸

Rabindranath advocates the observation of nature and living in a natural environment as a major means of understanding the world. Kathleen O’Connell gives a practical insight into the activities of Tagore’s school.:

Nature walks and excursions were part of the curriculum and students were encouraged to follow the life cycles of insects[,] birds and plants. The afternoon schedule included outdoor games and free time in nature; evening functions were also outdoors and astronomy was a part of the evening activities. Class

schedules were made flexible to allow for shifts in the weather or special attention to natural phenomena.¹⁹

Such activities, however, do not amount to the *teaching* of science where laws of nature must be understood and internalized, where through experiments the students are made to derive the laws of nature of their own. As late as 1931, when his school existed not less than thirty years, Tagore regretfully mentioned the lack of science teaching: „The only thing I have not been able to provide our boys with is science, owing to the enormous expense it would entail, which in a poor country like ours, is difficult to meet.“²⁰

Rabindranath Tagore and Albert Einstein

An essay on Tagore's belief in „Holistic Science“ cannot avoid his encounters with the German physicist Albert Einstein in 1926 and 1930. Let me explain from the outset that I have grown weary of seeing Rabindranath Tagore paired with Albert Einstein in upteen photographs. This juxtaposition of Tagore-Einstein is designed to create an iconic pairing: the „Wise Man of the East“ meets the „Scientist of the West“; in other words, the „East“ is all about Wisdom, while the „West“ is all about Science. Such a facile and downright erroneous, orientalist concept should no longer be supported, not even on a popular level by hanging photos of these two men on the walls. Added to this is the embarrassment that The Wise Man and The Scientist did, in their four meetings, hardly ever agree with each other. They expressed extraordinary respect for each other, but they either misunderstood their standpoints or simply agreed to disagree.

Twenty years ago, Tagore's biographer Andrew Robinson, himself a scientist, wrote, with Dipankar Home, the article „Einstein and Tagore: man, nature and

mysticism“²¹ in which they emphasized the „lack of philosophical communication“²² between Tagore and Einstein, partly due to the language barrier, but more importantly, because of the philosophical divide. Two of their conversations have been recorded and widely published. After the first conversation, Einstein wrote to Romain Rolland that it should never have been published.²³ Other personalities in the field of scholarship made rather damning comments. Bertrand Russell, for example, called Tagore’s conversation „vague nonsense“²⁴ in a private letter.

Partly, the two conversations were about the nature of the universe and the place we human beings possess in it. They took opposing standpoints. Rabindranath Tagore embraced the view of radical subjectivity. The universe does not exist outside the human mind. While Albert Einstein held that the existence of the universe is objectively real and independent from human beings and human consciousness.

It would be facile to assume that here the „Indian philosophical position“ faces the „European philosophical position“, that is that Tagore took the view of Indian philosophy and Einstein the view of European Enlightenment. It is a fact that the Indian systems of philosophy have espoused both subjective *and* objective views.

Basically, what made Rabindranath object to Einstein was his vision of the „Universal Man“. It was Rabindranath’s conviction that the human mind must merge with the „Universal Mind“ and become one. Hence, neither the human nor the universal mind are able to exist without the other. To make this more clear, Robinson and Home in their essay quote Rabindranath’s lectures *The Religion of Man*. There he writes:

In the apprehension of truth there is an eternal conflict between the universal human mind and the same mind confined in the individual. The perpetual process of reconciliation is being carried on in science, philosophy, [and] in our ethics.²⁵

„Science of a Poet“ – Rabindranath Tagore’s Holistic Science

This for me is the key to the appreciation of Rabindrath Tagore’s „Holistic Science“, as I choose to call it. Rabindranath coined the term „Religion of a Poet“ on which he deliberated in a beautiful essay of the same name. By the same token, he espoused a „Science of a Poet“. His concept of Science cannot be rationally separated from his *persona* of a poet. He in a sense „poetised“ Science. He evoked his vision of a Science which encompasses, on the one hand, the strict demands of the natural sciences, namely precise observation and experimentation to comprehend the laws of nature. On the other hand, Tagore’s Science encompasses the spiritual realisation of what the natural sciences become when they are applied – not through technology, but – within the spheres of philosophy, of humanistic convictions, of beauty, and of transcendence.

The one attitude that we see Rabindranath apply time and again with respect to the phenomena of nature is the *attitude of awe and wonder*. He first expresses these natural phenomena in as exact words as possible and then he raises them into another, a transcendental, sphere by an attitude of awe and wonder. This raising of his mind into a transcendental sphere is a spontaneous reflex which Rabindranath experienced probably „despite himself“, namely as an unforced realisation when he

observed nature, beauty, and human beings. Here is one quote from his collection of lectures *Personality* which must stand here for numerous other quotations that could be used to exemplify Rabindranath's position.

We have a personality to which matter and force are unmeaning unless related to something infinitely personal, whose nature we have discovered, in some measure, in human love, in the greatness of the good, in the martyrdom of heroic souls, in the ineffable beauty of nature, which can never be a mere physical fact nor anything but an expression of personality.²⁶

To conclude, I wish to recite two short poems which exemplify this Tagorean tendency to expand entities of scientific precision into a sphere of transcendence. The first poem is from the late collection *rog-śayyāy* (*On the Sick-bed*), translated by William Radice:

I can only gaze at the universe
 In its full, true form,
 At the millions of stars in the sky
 Carrying their huge harmonious beauty –
 Never breaking their rhythm
 Or losing their tune,
 Never deranged
 And never stumbling –
 I can only gaze and see, in the sky,
 The spreading layers
 Of a vast, radiant, petalled rose.²⁷

The second poem is from the collection *utsarga*, translated by myself:

I am like a point, you indweller,
 I am in the centre of the world. „I am“ –
 Mindful of these words, my spirit becomes feverish,
 realising their sublimity. My heart falls silent,
 weighed down by this formidable enigma.
 „I am“, and „It is“ –
 This mystery without beginning and end,
 whom should I ask its significance?
 The wise say therefore: „In this universe
 there is nothing but the One.“
 Men reject the awesome mysteries of Being
 and mix them into something unrecognizable.
 You alone in this world know
 the primeval mystery of Being. -
 A poet I am, again and again I shall affirm
 this with humility and fill my spirit forever
 with the magic of the whole world.²⁸

Notes

¹ In *The English Writings of Rabindranath Tagore [EWRT]*. Vol.3. Edited by Sisir Kumar Das. Sahitya Akademi, New Delhi 1996, p. 665-66. [First published in *Visva-Bharati News*. Vol. II, No. 2, August 1933, p. 11]

² Ibid., p.665.

³ Ibid.

⁴ Rabindranath Tagore, *Letters to a Friend*. Ed. By C.F.Andrews. Macmillan Company, New York 1929, p.115-16

⁵ *EWRT*. Vol.3. p. 665.

⁶ Crisis in Civilization. In: *EWRT*. Vol. 3. p. 722-26; quote on p. 723.

⁷ *EWRT*. Vol. 4., p. 509-513. – First published in *The Modern Review*, April 1925.

⁸ *Ibid.*, p. 511.

⁹ *Ibid.*

¹⁰ *Ibid.*

¹¹ *Ibid.* p. 511-12.

¹² Rabindranath Tagore, *Letters to a Friend*. p. 64

¹³ Rabindranath Tagore, "The Cult of the *Charkha*", in *EWRT*, Vol. 3, pp. 538-548; quote on p. 542.

¹⁴ Rabindranath Tagore, "The Waterfall". In *EWRT*, Vol. 2, p.165-66.

¹⁵ For a full discussion of this complex play see Amrit Sen "Many Paths": Reading Rabindranath Tagore's *The Waterfall* (*muktadhara*) < www.museindia.com/viewarticle.asp?myr=2010&issid=30&id=1910>.

¹⁶ See Krishna Dutta & Andrew Robinson, *Rabindranath Tagore – The Myriad-Minded Man*.

Bloomsbury Publishing Ltd., London 1995, p. 53 [*jiban-smriti*]

¹⁷ „My School“. *EWRT* Vol. 2, p.391. [originally in *Personality*]

¹⁸ *Ibid.* pp. 391-92.

¹⁹ Kathleen O'Connell, *Rabindranath Tagore: The Poet as Educator*. Visva-Bharati, Kolkata 2012, p. 202.

²⁰ „My School“. In: *EWRT* Vol. 3, pp. 641-645; here p. 645. [Not to be confused with a text by the same name in *EWRT* Vol. 2]

²¹ In *Journal of Consciousness Studies*, 2, No. 2, Summer 1995, pp. 167-79. – Here i quote from a revised version of the essay contained in *Selected Letters of Rabindranath Tagore*. Edited by Krishna Dutta and Andrew Robinson. Cambridge University Press / Foundation Book, New Delhi 2005, p. 527-536.

²² *Ibid.* p. 529.

²³ See *ibid.* p. 529.

²⁴ *Ibid.* p. 533.

²⁵ Appendix to *Religion of Man*; here quoted from *Selected Letters of Rabindranath Tagore* . p. 532.

²⁶ „My School“. In: *EWRT* Vol. 2, pp. 394-95. [originally in *Personality*]

²⁷ Rabindranath Tagore, *Selected Poems*. Translated by William Radice. Penguin Books, New Delhi 1985, p. 121. [*rog-śayyāy* no. 21 (1940)].

²⁸ *utsarga* 22; written Mai/Juni 1914.