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## The Buddha Proclaims the Second Law of Thermodynamics as Parting Gift!

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The Buddha's last words, and last advice to his Disciples, were, "Samkharas are subject to decay. Strive with diligence" (*Vaya dhammā saṃkhārā. Appamādena sampādeṭha*).

*Samkhāra* is a difficult term which is probably why there is no Sinhala term for it. All we have is a Sanskritized phrase, *samskāra dharma*. What I remember seeing on a funeral banner half a century ago was a jocular "anisa saema sakaradam", a rhythmic invitation to dance, it sounded, more than a call to share grief! But that's altogether another story.

An English translation of *Samkhāra* captures the sense better. 'Forces'. So 'Forces are subject to decay'.

What, then, are these 'forces'?

First, there are the psychological processes - what we sense through the eye, ear, nose, tongue and body. But there is also the sixth mind process itself. They all involve neuronal processes centralized in the brain. And neuropeptides, carrying messages, along the neurons. Yes, there are literally, no kidding, an estimated 10 billion to a trillion of them! So they are no simple force to reckon with. Then there are the physical forces: breathing, using your limbs, using language, etc.

Both the psychological and the physical forces do use high quality energy, technically, 'exergy'. So how and why does that high quality energy go to decay? As explained in Western Science, "The quality of energy deteriorates gradually over time. How so? Usable energy is inevitably used for productivity, growth and repair. In the process, usable energy is converted into unusable energy." And this process is called 'entropy increase', "a measure of unusable energy within a closed or isolated system".

The 2nd Law of Thermodynamics, or the entropy law, explains this process in relation to matter. But is there any reason why it would not equally apply to the mindbody? It is as much a 'closed system', meaning that it enjoys its own independent existence. Is there anybody other than you in yourself?

As usable energy decreases and unusable energy increases, entropy increases. Living, by definition, means using up high quality energy – breathing, thinking, digesting food, maintaining our health, going on with our daily activities, even sleeping and resting and meditating.

So the Buddha's last words would be "Forces are of the nature of entropy". What we have translated here as 'of the nature of' is Dhamma, which in Western Science is called 'Law' as in the 'Law of Thermodynamics'. (Law. Hm! Note any theistic connotations in Western Science?)

Entropy is the result of change, i.e., impermanence - *anicca*. And this impermanence, says the Buddha, is of everything in the total mindbody. And in life, everything relating to the mindbody undergoes change in three phases: whatever 'high energy' rises, comes to be used and ends up as 'low energy' at break-up (*uppaada, thiti, bhanga*). Or in four phases, if we were to count the two types of genesis as in the Abhidhamma: initial and subsequent. Gray's Anatomy, the standard Medical Text, calls it prophase, metaphase, anaphase and telophase.

But it is not just a matter of usable energy going to waste being turned into useless energy. Like used up food ending down the toilet! "Entropy is also a gauge of randomness or chaos within a closed system. As usable energy is irretrievably lost, disorganization, randomness and chaos increase." Ever heard of *Dukkha*?

As would be heard at a funeral oration from a Bhikkhu or Bhikkhuni, "Of entropic nature indeed are the forces; arising and cessation their nature. Having arisen, they cease to be. Calming it is bliss."

If the translation doesn't ring a bell, perhaps the Pali rendering will:

*aniccā vata saṅkhārā ; uppāda vaya dhammino.*

*uppajjitvā nirujjhanti ; tesam vūpasamo sukho.*

Entropy is *dukkha*; Calming the yo yo of arising, staying put and ceasing is *sukha*. Be it in life, or in terms of Nibbana.

Get it? Got it! It's as simple as that.

Thus the Buddha advises, "Strive with diligence". Don't let chaos, disorganization and loss pull you down. Pull up your socks (strive) and walk with head high (with diligence). But humbling your mind, of course, retaining your equilibrium, mental and physical, and cultivating equanimity (*upekkha*). Remember, your Autonomous Nervous System is watchin' ya. Nervously!

Did I say the Buddha was anointing the Second Law of Thermodynamics as his parting gift?

And what a parting gift! What Western Science limits to matter, Buddhan Science extends to the mind, and cumulatively, to the totality of sentience.

But more, the Buddha, as elsewhere, ethicalizes it, too. Shall we then say, "Good to see you around, Lord(ess) Entropy. But how do I work around you to make my life happier, and spiritually uplifting, and eventually work myself towards liberation?"

Unlike in Western Science, then, where knowledge is just for the sake of knowledge, the Buddha's proclamation of yet another reality on his deathbed was a final pragmatic, and compassionate, contribution to the welfare of sentient beings.

Saadhu saadhu saadhu. Well said. Well declared. Well proclaimed!

FOOTNOTE: It is to mean 'The Enlightened One', 'The Awakened One' that I've used the nomenclature, 'The Buddha'. 'Lord Buddha', as I see in common usage, is to equate the historical Buddha with mythical figures, such as Lord Ganesh, Lord Siva, Lord Rama, etc. It is also to turn an epithet into a proper noun.

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