

Consciousness is everywhere¹

New theories in neuroscience suggest that consciousness is an intrinsic property of everything, just like gravity. This development opens a world of opportunity for collaboration between Buddhism and neuroscience. “The heart of consciousness,” says neuroscientist Christof Koch, “is that it *feels like* something. How is it that a piece of matter, like my brain, can feel anything?”

Some ancient ideas like **panpsychism**, the idea of universal consciousness, common to ancient Greek philosophy and paganism, was in the past largely dismissed by science. But recently – with some help from Buddhism, panpsychism is once again being examined and applied for a better understanding of the nature of consciousness, especially as taught by the Buddha.

According to panpsychism, consciousness is everywhere, that is, it is not limited merely to humans. If this is the case, then, we must understand that all beings with consciousness experience pain and pleasure – perhaps not exactly in the same way as we do – but certainly suffer in some significant way. In that case, we need to work to reduce the suffering of all conscious beings. In fact, this is what the historical Buddha teaches us by way of the very first precept – that of not killing, based on the respect for life.

Research scientists like Giulio Tononi – who is said to be the father of the most popular modern theory of consciousness – introduced the Integrated Information Theory (IIT), which Koch once called “the only really promising fundamental theory of consciousness.”

Tononi’s theory states that consciousness appears in physical systems that contain many different and highly interconnected pieces of information. Based on that hypothesis, consciousness can be measured as a theoretical quantity, which the researchers call *phi*.

Tononi has a test for measuring phi (the amount of consciousness) in a human brain. It is similar to ringing a bell. Scientists send a magnetic pulse into a human brain and then watch the pulse reverberate through the neurons — back and forth, side to side. The longer and clearer the reverberation, the higher the subject’s amount of consciousness. Using that test, Koch and Tononi can tell whether a patient is awake, asleep or anesthetized.

There are already pressing and practical needs for a way to measure consciousness. Doctors and scientists could use phi to tell if a person in a vegetative state is effectively dead, how much awareness a person with dementia has, when a foetus develops consciousness, how much animals perceive, or even whether a computer can feel.

Tononi’s hypothesis gets more interesting when applied to computers. Can a machine be conscious? Imagine “someone” like the android Data in the popular Star Trek TV series.² He acts almost human, but has much greater physical strength and cognitive powers (much like a computer) than humans. However, he lacks human emotions. This significantly differentiates computer “consciousness” from human or “cognitive consciousness.”

¹ This reflection is a response to Sam Littlefair, “Leading neuroscientists and Buddhists agree: ‘Consciousness is everywhere.’” *Lion-roar*, 1 Apr 2016, <http://www.lionsroar.com/christof-koch-unites-buddhist-neuroscience-universal-nature-mind/>

² [https://en.wikipedia.org/wiki/Data_\(Star_Trek\)](https://en.wikipedia.org/wiki/Data_(Star_Trek)).

Despite being an android – a humanoid robot or synthetic organism – we see the Star Trek team (especially in *Star Trek: The Next Generation*) respecting Data as a person. In other words, they respect him as a living being, almost as a human, except that he lacks emotions (such as humour) and is purely logical. Indeed, we can imagine a lot of humans, at some point in their lives, behave in this manner, too!

The idea of “consciousness everywhere” (which must not be confused with “universal consciousness”) gets more interesting. Tononi’s theory says that any object with a phi greater than zero has consciousness. Besides animals, it means that plants, cells, bacteria, and maybe even protons may be “conscious.”

However, we should be very careful not to confuse a scientific category with a Buddhist teaching. “Conscious” as used by the scientists (such as Tononi, Koch, and others who follow them) should not be equated with consciousness as taught by the historical Buddha. Of course, they may overlap in many way – and this is exciting for those who want to see Buddhism being relevant to our broader lives.³

However, we need to understand the Buddhist teaching more carefully and take it on its own terms, and not to be revised in a Procrustean way – extending an idea or chopping it down to our convenience. It should be remembered that the scientific ideas are still on a research or hypothetical – even if, theoretical – level. However, from what the scientists can confidently tell us, informed Buddhists have no difficulty understanding them, even accepting them without watering down or revising the Buddha’s teachings.

However, to say that “All is sentient being,” that grass, trees, land, sun, moon and stars are conscious, as Dogen does in his *Shobogenzo*, is all very interesting. But this does not mean that they will gain enlightenment as they are – then, we have become determinists, and do not need to make any effort to do good or to awaken.

On the other hand, such a scientific idea may help us better understand the stories in the suttas and commentaries where the sun and moon, for example, are regarded as deities. If we accept that these physical things have consciousness, are we also willing to accept them as “deities” and “gods”? It will be interesting to examine such a question.

Perhaps, we have to re-examine what is meant by such terms as “deity,” “god” and so on. Such an examination – with the help of the new scientific understanding – will perhaps throw new light on early Buddhist mythology of gods, demons and non-humans. However, for the moment, it is safer for us to take them simply as mythology, that is, a symbolic way of representing the karmic and spiritual potential of some of our human and divine qualities to guide our own lives towards a higher consciousness, even to awakening itself.

On a happy note, neuroscientist Koch admits, “I was confronted with the Buddhist teaching that sentience is probably everywhere at varying levels, and that inspired me to take the consequences of this theory seriously,” says Koch. “When I see insects in my home, I don’t kill them.”

³ Tononi clearly sees consciousness as a function of the brain, but Buddhist teachings never associate the mind in this way. This is one difference between the Buddhist view of mind, and Tononi’s notion.

Now, when we extend this idea of consciousness to, say, the whole Earth herself – to Mother Earth – it helps us to understand that this planet needs the respect accorded to a living being.

In fact, we have a beautiful story of the Buddha himself (one of my favourites), just before his awakening, when Māra (the embodiment of evil) appears with his huge army of violent demons, challenging the Bodhisattva that he is not worthy of sitting under the Bodhi tree (just as we are often challenged when we reach a dramatically crucial point in our lives). The Bodhisattva silently touches the Earth, calling her to witness all his good karma that has brought him to sit under the Bodhi tree.

Mother Earth then rises up from the bowels of the earth, towering into the sky, twirls her beautiful long hair, from the tip of which flows huge torrents of water that wash away Māra and his evil horde. The earth represents our good karma that supports us in moments of spiritual challenges.⁴

Our quest for understanding the nature of consciousness will help us see better how all life, even all existence, are intimately linked. Hence, we need to show respect for life and all its manifestations. In this “live and let live” embrace of life and existence, we are more likely to experience a truly higher quality life of liberating truth and uplifting beauty – living not only like gods and angels, but as awakened beings.⁵

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[an occasional re-look at the Buddha’s Example and Teachings]

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⁴ On the story of the Buddha calling the earth to witness, see J 1:71-75. See also Piya Tan, [The Buddha and His Disciples](#), Singapore 2002, 2013: 2.21.

⁵ On the early Buddhist teaching on consciousness, see *Viññāṇa*, [SD 17.8a](#).