Navigating the New World: not Brave but Changing

Insights from Buddhist philosophy for the ethics of the future

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Developments Transforming Physical and Mental Being

- There are ongoing developments in science and technology that are transforming the very basis of our physical and mental being.
- An intense transformation is occurring where among others:

An Intense Transformation is Occurring

- Mental activities are being projected onto computing artefacts;
- Artefacts themselves outperform humans as mental processors,
- Human senses projected outward and extended,
- The body projected outward and introjected inward.

Evolution Re-thought, Re-made

- What 3 billion years of evolution has crystallised into the human body and mind, and their environment is being re-made and has to be re-thought.
- A few indicative examples of the major transformation beginning with the constructed environment:

"Moore's Law" Reaching Physical Limits

- The trillions of transistors in integrated circuits, the number doubling every two years or so for the last half century ("Moore's Law") is reaching its physical limits of silicon-based technology.

New Emerging Technologies

- New emerging technologies such as quantum, molecular, protein, DNA, and optical computers promise far greater possibilities of shrinking the largest supercomputers today to the size of a sugar cube and probably far more in the future.

Internet Transmission Speeds, 60 *Billion* Times Faster

- Computers connected to each other to form the Internet transmit data around the globe today at around 1.7 megabits per second.
- Bell labs have already demonstrated transmission speeds, equivalent to 100 billion megabits per second, nearly 60 *billion* times faster than current rates.

Interaction in a Sea of Information

- This would enable interaction in a sea of information. In addition, most Internet access will increasingly be through mobile devices with possibilities of voice input and output.
- Computer input and output using other senses (vision, touch, even possibly taste and smell) are increasingly coming to the fore.

Ubiquitous Computing

- Through ubiquitous computing, information processing is progressively being more integrated into every day activities and artefacts resulting in the "Internet of Things".
- Here ICT integrates humans into the very "fabric of everyday life" and humans become indistinguishable as communicating nodes from computer systems.

All Pervasive and Integrated

- In that all pervasive and integrated system, humans will mostly be unaware that they are surrounded by a sea of computing devices.
- Today's 5 billion interconnected devices are expected in 10 years time to reach 50 billion - a processing sea surrounds us.

More Computers Communicating

- Far more computers would be communicating with each other than would humans with each other, and humans would be unconsciously interacting more with computing devices than with their fellow humans.

Humans Inhabiting Artificially Constructed Realities

- Currently, the younger Western generation is spending around eight hours, which is most of their waking time in front of passive TV screens or interactive computer ones.
- Increasing use of interactive 3-D virtual environments and virtual worlds means a considerable number of humans will inhabit artificially constructed realities.

Humanlike Functions

- Computing devices themselves are connecting to mechanical systems resulting in robots that perform increasingly humanlike functions that contrast to the manufacturing robots of the 1970s.

Robots that Create Themselves

- Use of genetic algorithms combined with 3-D printers has already allowed the creation of robots that create themselves, leading to another evolving artificial environment.

Mind Reading Technology

- Mind reading technology is on the verge of creating consumer goods controlled by the mind.
- In a different direction, new imaging approaches decode individual words of a person's thoughts, and in principle become possible to remotely access the visual content of mental processes.

Increasingly Decode Thoughts

- In the coming decade, one would be able to increasingly decode thoughts and accompanying pictures remotely.

Human Connectome Project

- The Human Connectome Project hopes to scan a large number of brains to give a picture of the neural structure of the human brain in five years.
- Opening the door to changes in the very apparatus through which we perceive the world, mice have been implanted with new genes that help them see the world through the visual spectrum of humans.
- We could in theory change the windows for our physical perceptions.

Brain cells in Petri dishes

- Brain cells in Petri dishes have been connected to robotic devices and these "dish-brain-controlled" robots have been made to do some humanlike tasks.
- Such interconnected networks have "some sense of what is going in themselves", a sense of "self". Combining the processing power of human brains with computer vision, new means of searching through images has been developed.

Synthetic biology

- The brain as well as the body is determined to a significant extent by our genetic inheritance.
- "Synthetic biology" is being developed to produce artificial life systems using the same molecular basis of living systems.

Synthetic biology redesign and create new life forms

- Synthetic biology would use off-the-shelf chemical ingredients and build living mechanisms like engineers produce computer chips.
- It would redesign existing genomes and create new life forms.

Information types no longer separated from each other

- The examples given above show that genetic information, computer information as well as human cultural information are no longer separated from each other.

Merging information content

- These three information lineages increasingly interact with each other merging directly or indirectly their information streams, merging the information content as well as their modes of interacting with their environments.
- These result in changes in all three systems namely in the genetic, the computer/artefactual and the cultural.

“Significant others” Redefined

- This exponentially accelerating process of merging of information will redefine what constitutes “social” and what constitutes “community.”
- A community’s members communicate with their “significant others” and change their internal information states (and their internal and external behaviors).

All pervasive merging

- Under conditions of all pervasive merging of information, information exchanges occur across all the three systems of genetic, computer and cultural.

Seamless merging

- In this sense, the concept of significant other, that is a communicating entity, is now spread from human communities to encompass also the biological/genetic and the artefactual.
- A seamless merging between the three realms now occurs.

Information translated

- The resulting image of interactions that now arises is of multiple oceans of communities, operating at different levels, the genetic, the cultural and the computer/artefactual.
- There are exchanges across the different levels, up and down and sideways, as information is translated from one realm to the other.

Changes in characteristics

- These dynamics result in changes in the characteristics of each lineage, including the internal perceptions from within a lineage, namely in the language of evolutionary epistemology, its “meaning” and “hypotheses” on the world.

Thermodynamically open system

- Thermodynamically speaking, this is an open system with a constant increase of organization within the system, upward and onward, accompanied necessarily by changes in inflows and outflows to and from the system.

A future sociology

- The study of social phenomena in the new century must necessarily take into account these factors.
- A future sociology must incorporate dynamics of all three realms.

Challenge ethical systems

- When we are thus constructed and reconstructed, from new foundational developments transforming our body and mind and our environment, deep questions are raised that challenge existing ethical systems, that is, how to navigate this new world.

Ethics for new technologies

- Dominant Western ethical systems for the new technologies are derived from presumably "secular" roots or from Christianity, Judaism or Islam (the “Abrahamaic” religions).
- The new developments which have continuous change as the central core challenge some of these ethical assumptions.

Change core of Buddhist philosophy

- A major approach that has change at its very core is Buddhist philosophy.
- Some core Buddhist approaches have direct relevance to a future where the body, mind and the environment is constructed and reconstructed.

No permanent self - human and nature constructed

- An orientation from this core Buddhist perspective of continuous change, no permanent self and both human and nature as constructed would fit better as a cultural orientation to examine and live in a future world under continuous change and where man and nature are continuously reinvented and reconstructed.

Buddhist ethics

- It also suggests that Buddhist ethics derived from such a perspective (which unlike the revealed religions of Judaism, Christianity and Islam is not absolute, but contingent and situational) may better fit as a means of navigating the coming interconnected world of the clone, the robot, the cyborg and the virtual life.

Deep questions on ethics

- Deep questions that challenge existing ethical systems are raised by new developments
- Dominant “Western” religious ethical systems are derived from Christianity, Judaism or Islam (the larger Western “Abrahamaic” family of religions)
- The ethical system being “revealed” and to be “God’s word”.

Challenges

- There are also “secular” ethics

- New developments from abortion, to cloning and in the future, artificial genes and artificial chromosomes and non biologically augmented humans thru say AI implants challenge some of these ethical assumptions.

Challenges

- Many such challenges rest on what it is to be a person and the nature of the self
- Some recent approaches to the living world and the environment have utilized cultural elements from major non-Western philosophies as well as those of simpler belief systems eg Ecofeminism.

Continuous Change central to the ongoing future

- Continuous change of the self and the person is the condition of the emerging world
- A major cultural approach that has continuous change as its core is Buddhist philosophy.

Central Buddhist position

- Both the human person, including his body and mind, as well as the environment he operates in, are not given or sacred but constructed and changing.
- This approach has direct relevance to a future where both the human and his/her environment are constructed and reconstructed

Disclaimer

In using Buddhist philosophy here, one need not accept all the cultural aspects of Buddhism as one does not have to believe all Christian mythology to use the philosophical counterpart of a Creator namely a First Cause.

“Religion”, “Philosophy”, “Science”: S Asian and West

- In discussions on ethics, the fields of science, philosophy and religion intermingle.
- But “religion”, “philosophy”, and “science” have different connotations from a South Asian - say Buddhist - perspective and a Eurocentric one.
- Hence an explanatory aside is needed

South Asian belief systems

- Generally all South Asian belief systems formally divide themselves to two levels, namely:
- “Conventional” beliefs and practices (for the ordinary believer)
- “Higher”, philosophical knowledge (for higher practitioners)

South Asian and Judeo Christian systems differ

- South Asian belief systems possess a heavy overlay of philosophy as foundation.
- Western religions are firstly revealed systems, to be by a higher power, ‘God’. Philosophy comes later.

Buddhism's core philosophy of the individual

- *"Anicca"* and *"Anathma"*
- Meaning "Impermanence and change", and "No abiding soul or self"
- These are not "mystical" mumbo-jumbo but realistic and matter of fact statements

Buddhism takes on the person

- In Buddhism there is nothing durable or of static being.
- The continuity of life is not through an abiding permanent structure, an 'I'.
- Buddhism is unique in the philosophies of the world that it denies the existence of a self or a soul.
- A belief in a permanent abiding 'me' is radically deconstructed in Buddhism

Buddhist deconstruction of self

- Buddhism breaks down physical and mental factors of the person into changing components

“Not inseparable from idea of change”

- "there is no materiality whatever ..... no feeling ... no perception .... no formations ... no consciousness whatever that is permanent, everlasting, eternal, not inseparable from the idea of change”

– the Buddha

Buddhist deconstruction of self [contd]

- "When neither self nor anything pertaining to self can truly and really be found, this speculative view [of] a permanent, abiding, ever-lasting, unchanging [self] is wholly and completely foolish" - the Buddha
- A disciple of the Buddha elaborated further that what one calls *'I AM*' is:

"neither matter, sensation, perception, mental formations nor consciousness"

Buddhist deconstruction of self [contd]

- Physical elements change, as do mental phenomena.
- All are in a state of perpetual becoming. All phenomena are but fleeting strings and chains of events.
- As the constituents of an individual change, s/he does not remain the same for two constituent moments

Buddhist deconstruction of self [contd]

- There is no individual, only a changing stream.

"Life is a stream (*sota*), an unbroken succession of aggregates. There is no temporal or spatial break or pause in this life continuity. This continuity is not through a soul, but through a stream of becoming".

Buddhist deconstruction of self [contd]

- This analysis is partly arrived at from observing the innermost subjectively felt inside a person.
- One of the objectives of Buddhist mental exercises, 'meditation' is to observe, experience and describe for oneself this lack of self and of permanence from within one's own streams of thoughts and mental phenomena.

Buddhist Deconstruction and New Technologies

- From within our own innermost subjectivity, the problem of identity and of an abiding "I" is shown to be a false one
- From such a perspective, the questions raised by new technologies on identity are seen differently.

Seeing differently

- The existential angst of being a hybrid, of having genes of plants and animals inside one is seen differently. The problem of one's 'self' being spread over several artifacts now loses its potential terror.
- The threat of being a cyborg, of Frankenstein's creature; the concerns of a Jeremy Rifkin the fundamentalist critic of biotechnology is seen differently.

Buddhist Deconstruction and New Technologies

Living things, complained the fundamentalist critic of biotechnology Rifkin:

"are no longer perceived as carrots and peas, foxes and hens. …. All living things are drained of their aliveness and turned into abstract messages. …….. There is no longer any question of sacredness ….. How could there be when there are no longer any recognizable boundaries to respect".

Seeming sacredness of identity

- Further, Rifkin continued “as bioengineering technology winds its way through the many passageways of life, stripping one living thing after another of its identity, replacing the original creations with technologically designed replicas, the world gradually becomes a lonelier place” .
- Buddhism stripped this seeming sacredness of identity over two and a half millennia ago.

Buddhist Approach to New Technologies?

- A gene does not make a sentient being. Only the stream of a being's existence, of an onwards flowing history constitutes the sentient human or the sentient cyborg.
- A person does not exist as a unique individual but as a constructed ever changing flow, an onwardly moving lineage.

Buddhist Approach to New Technologies?

- If to this lineage are added new elements, new parts, it is but in the very 'normal' nature of such streams. All such streams are constructed from constituents in an ever moving process.
- A person's *normal* existence is of such a constructed being.

Buddhist Approach to New Technologies?

- The artificial introduction of elements say to the internal flow from new genes or artifacts is but another manifestation of the normal construction of such flows.
- From a realist's perspective, there is no difference.

Angst and Fear

- But such a perspective makes one squeamish. Raises fright, alarm and even disgust.
- One would not mind, a set of false teeth, even an implanted one, a prosthesis for one's limbs say, a walking stick or for that matter even a motorized, electronically controlled one.

Messing up one's interiority

- But messing up one's interiority, ones subjectivity, evokes an entirely different order of emotions. The aliens taking over minds, raises different feelings, of one's own consciousness being invaded.
- It is after all, putting doubt on one's own subjectively-felt oneness that is at stake.

Angst and Fear Normal

- But in such instances, the Buddha himself had been very firm, rejecting the views of persons who take the thing called the 'mind' or 'consciousness' to be an unchanging substance.

Ephemeral, continuous change

- In that case it was better the Buddha argued, for a person to take the physical body as an unchanging 'self', rather than thought, mind or consciousness, because the body was at least more solid in appearance than the mental, which are ephemeral and continually change and so are hardly candidate for permanency

Demystifying Interiority

- Buddhist psychology demystifies interiority and consciousness into mundane components.

“Something which does not exist”

- "Were a man to say I shall show the coming, the going, the passing away, the arising, the growth, the increase or development of consciousness apart from body, sensation, perception and volitional formations, he would be speaking about something which does not exist”

– the Buddha

Fear of the future?

- But experiencing the intrusion of the new technologies that remake us biologically and culturally, in an internal sense is disturbing. It challenges our sense of self.
- "This idea that I may not be, I may not have, is frightening to the uninstructed“

as the Buddha himself put it.

“against the current”

- And, as the belief in an abiding self is deep rooted in humans, the contrary position is “against the current” as the Buddhist texts say on one other occasion

Facing the future

- If then in the coming future, it is inevitable that we be constructed and reconstructed, from biotechnology, and IT, what should be our epistemological, philosophical, ethical and subjectively felt guiding principle be.
- If "we" would then be cyborgs and hybrids, what should the interiority of robots, of constructed hybrids be, as they navigate reality, and tunnel through time subjectively

Inside the future

- The person is not a ‘what’, but a process. Being is only a snapshot in the process of becoming, lasting only the length of one thought.
- "Just as a chariot wheel in rolling, rolls only at one point of the tire, and in resting rests only at one point; in exactly the same way, the [internal] life of a living being lasts only for the period of one thought. As soon as that thought has ceased, the being is said to have ceased”.

Inside the future

- There is no stable sub stratum to be considered the self. It just symbolizes a stream of physical and psychological phenomena that is perishing.
- This is the correct view to be internalized in the inevitable day of the cyborg.

No experiencer but the experience

- As the 5th Century Sri Lankan classic of higher Buddhist theory *Vissudhi Magga* put it:

There is no doer but the deed

There is no experiencer but the experience.

Constituent parts roll on.

This is the true and correct view

Future: Mind and Body

“The mental and material, both are here in fact,
A human substance though cannot be found,
Void it is, set up like a machine,
A mass of conflict, like a bundle of grass and sticks.”

- 5th C AD Commentator Buddhaghosa

Future: “I” as Robot

- "As a puppet walks and stands through a combination of wood and strings, although it is empty, without life, without impulse, so this contraption of mental and material factors [the person], void, without soul, without free will can walk and stand, as if it had will and work of its own”

5th C AD Commentator Buddhaghosa

An Aside: Buddhist goals

- One analyses oneself, knows oneself only to realize that there is no self in the first place. This is not an intellectual knowledge but an internally observed, felt knowledge.
- This elimination of the sense of self sets one free in Buddhism. This is the highest ethical goal in Buddhism.

An Aside: Buddhist goals

- When the realization dawns that I am not a thing but a process, then the future becomes open ended. Buddhism is self-referential, to know oneself is to make oneself, to guide the self that is not there.
- In the Buddhist analysis, unsatisfactoriness and anxiety becomes essential to the 'I' because these are the 'I's response to its own groundlessness.

Buddhist future?

- Those making the future may not know it, but they are foundationally "Buddhist"
- In both perspectives the body and mind are intertwined and changing
- In both perspectives the body and mind are not mystical but constructed
- In both perspectives the body and mind are malleable in definable ways

There is a difference

- Those constructing the future view their phenomena from the outside, as objects
- Buddhists have analyzed partly subjectively, partly from within
- May be we should examine the future developments internally

“What is it to be a robot?”

- That is internalize being a robot, a cyborg
- Like asking “What is it to be a robot?”

- **Thank you!**