Abstract

The possibility of misrepresenting Buddhist concepts by science academics using oversimplified interpretations is demonstrated by showing that living beings and physical systems (sensing machines and atoms) are closely similar and that life/death cycle is common to them when only some selected factors are considered while a few critical ones are carelessly or ignorantly excluded. The omitted critical factors are identified.

Basic life/death processes; functional composition; base functions; thirty-one abodes; and rebirth are considered. Part II deals with deliverance.

1. Introduction


System parameters such as basic processes, functional composition, functions, and characteristics may be used as criteria for judging identity of systems. Using these parameters on living beings and sensing machines show close similarity between the two.

Taking basic system processes first: in living beings the basic process is appearance and disappearance of nama-rupa (functional and physical) pairs that expresses as life/death cycles.

In machines the basic process is input/output that results in ON/OFF sequences. The essential process in both is a cause (stimulus interacting with a sensor) producing an effect.

On looking at system composition: a living being is composed of one rupa (physical) and four nama (functional) components. Machines consist of a combination of one grouping of physical components (sensor, circuits, wires ...)

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and four data processing functions. The essential composition in both is one physical component and four functional components.

With respect to system functions: in beings there is consciousness/response as compared to recognition (or identification)/response in machines. Essentially it is knowing and responding in both cases.

Examination of system characteristics reveals that anicca (impermanent), dukkha (stress), and anatta (soulless) are present in living beings. These are respectively analogous to machine characteristics ON/OFF, machine stress, and absence of a driver making the process go. The essential characteristics in both are therefore impermanent, stressful and soulless.

An analogy between the thirty-one abodes (planes of existence) mentioned in Buddhist literature and electron states of atoms may be identified: Change of abodes (rebirth) occurs when a living being dies; and change of states (reappearance) happen when an electron changes its energy. The two are analogous. In the former case kamma (volitional action) is the driver and energy is the driver in the latter case.

The objective in part I is to show that use of the above parameters and the analogy between thirty-one abodes and electron states can lead to the logical conclusion that beings and machines are identical. The reason for this obvious false conclusion is identified.

In part II the route for escape from samsara (never ending round of rebirths) is mapped out and Vinnanahara practice is described.

This paper is a modified version of the PowerPoint presentation titled “Life, Death and Deliverance – a Scientist’s Novel View”, delivered at Mahachula Buddhist University, Bangkok, on 27 August 2005.

2. Basic System Processes.

2.1 Life and death – The Buddhist view

The Buddhist view of life and death stands on two levels the panatti or apparent picture and the paramatta or true picture.

2.1.1 Relative (macroscopic, gross, averaged, apparent) Level

Living beings are born; they grow, age and die. Then born again, repeating the cycle. After death the being is reborn into various realms in the thirty-one abodes (planes of existence). Beings are thrown up or pushed down the thirty-one planes in accordance with the kamma or volitional activities they had done. This is samsara on a gross level - never ending round of rebirths occurring continuously without let up. It is an apparent picture of life and death; it is a gross view.

On this level, life is essentially action such as drinking, eating, working, praying, etc. Even when sleeping bavanga citta keeps basic activities such as breath and heart-beat going.

2.1.2 Ultimate or paramatta (microscopic, actual, true) Level

Life and death seen at this minute level is the true picture. It is paramatta life and death. Just like activity is life (above), here life is interaction. Interactions between external ayatanna (six sense objects: sight, sound, taste, smell, touch, thought) and internal ayatanna (six sense bases: eye, ear, tongue, nose, tissues and heart) result in vinnana (knowing, consciousness) and response. For example when food is placed on the tongue, the system (the body) knows it is salty or sweet. Then it responds with like, dislike or neutral.

It is easily seen that ayatannas are physical (rupa) - they exist in time and space; whereas vinnana (consciousness) is functional (nama) - exists in time only. Thus interactions are nama / rupa pairs. If interactions are present nama / rupa pairs exist and life is, if not life is absent (death).

The interactions go ON/OFF non stop in endless cycles. These interaction cycles are nama / rupa cycles or life/death cycles that occur endlessly. This is the real samsara. It is the real Buddhist view of life and death – the real basic life/death process.

To many it may be puzzling that these two pictures of life and death are poles apart. But
remember microscopic pictures evolve into macroscopic ones. For example quantum mechanics deals with microscopic systems that behave contrary to everyday experiences but bridged by statistical mechanics, it evolves into everyday macroscopic systems of Newtonian mechanics.

Actually many examples are around us, but we do not see as we are conditioned to observe the gross picture. Take a river; there are moving water particles (molecules) that give an apparent picture of a river. Similarly earth particles, etc. evolve into skyscrapers. Thus microscopic activity (interactions) evolving into macroscopic activity (eating, etc.) is not strange.

2.2 Basic Life/Death Processes in Machines?

Machine processes consist of an input that constitutes stimuli interacting with sensor, and producing an output that consists of identifying the sensation and responding. If stimuli impact is ON the process operates. There is Input / Output. There is life. If stimuli impact is OFF the process stops. There is no Input / Output. There is no life – it is dead.

Stimuli impact goes ON/OFF in non stop cycles. Consequently there are life/ death cycles. Is this not instrument life/ death? Instrument samsara?

Comparing machines and living beings shows that in machines Input / Output occur as ON/OFF nonstop cycles; in beings ayatanna impact occurs as ON/OFF non stop cycles, both are life/death cycles. Basic life/death processes are common. Hence beings and machines are similar with respect to basic life/death processes.

3. System Composition

Buddhism says living beings are composed of five khandas (aggregates) that consist of one physical aggregate (rupakhandha) and four functional aggregates (namakhandha). The four namakhandas are (1) vedanakhandha feeling (2) sannakhanda - initial sensation (3) sankharakhandha sustained sensation (activity) and (4) vinnanakhandha recognition Machines also have five components: one physical component (sensors, circuits, etc.) and four functional components. The four functional components are (1) detection (2) data logging (3) data processing (memory matching) and (4) output. They are analogous to namakhandas. Hence beings and machines are closely similar with respect to composition.

4. System Functions

Let us consider hearing a pleasant sound – voice of a loved one, a favorite melody or an old tune you are hooked on. There are two functions involved: consciousness function and response function.

4.1 Consciousness function

The stimulus (sound vibration) and sense base (ear) interaction causes consciousness of hearing (sotavinnana). The rupakhandha vibrations stimulate the ear drum; the being feels (vedanakhandha); records it (sannakhanda), compares it with memory (sankharakhandha), sound consciousness, sotavinnana (vinnanakhandha) results. The stimulus (cause) produces consciousness (effect). A rupakhandha initiator (sound vibration) results in a namakhandha (sound consciousness).

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1 The world of quantum mechanics reveals the bizarre rules of light and matter on atomic scales. On that scale matter can be in two places at once; objects can behave as both particles and waves; and everything is uncertain. Probability is the key factor in the quantum world. Quantum rules are counter to intuition but they are the basics of macroscopic reality.

2 This is an example of an external ayatanna and an internal ayatanna interacting to give a vinnana. These three constitute a set of datus. This particular set consists of sota datu, sadda datu, and sotavinnana datu. Since there are six internal ayatannas (the six sense bases) and six external ayatannas (six sense objects) there are six vinnanas. Hence there are a total of six sets each composed of three datus, a total of 18 datus.
4.2 Response function

Here consciousness feed back results in a response. The sound consciousness (sotavinnana) is fed to the vedanakhanda, goes through sannakhand and sankharakhand resulting in an attachment (loba cetasika) based response, such as a smiling face (rupakhanda) - response with like. The consciousness (cause) produces a response (effect). A namakhand (sound consciousness) results in a rupakhand (smiling face).

Both the causes in the above two functions (stimuli and consciousness) occur ON/OFF non stop. Thus the effects (consciousness and response) also go ON/OFF non stop. The functions going ON/OFF non stop result in life/death cycles.

Sensing devices also function in two ways: identifying and responding. For example an electronic nose (e-nose) can identify wines, soy sauces etc. and it can be programmed to respond with sounds of like and dislike.

Consciousness function of beings is analogous to identifying function of machines; and response function of beings corresponds to response function of machines. Thus beings and machines are similar with respect to base functions.

Just as the two functions in beings going ON/OFF non stop result in life/death cycles; the two machine functions also go ON/OFF non stop and produce machine life/death cycles. Hence life/death cycles are common to beings and sensing machines.

5. System Characteristics

The Three Signs: impermanent, stressful, soulless, respectively called anicca, dukkha and anatta, are the characteristics of living beings. Are they in machines also? Let us examine each in turn.

5.1 Anicca (Imperrmanence)

External ayatannas (sense objects) or stimuli can be in the form of waves or particles. Thus two types of interactions are possible: one involving tangible particles and the other involving intangible waves.

Incidently in the paramatta or true sense, waves and particles are the same but with different emphasis. They are expressions of the real rupakhand, which is beyond language and can only be experienced via meditation.

5.1.1 Particle – Sensor Interactions

Consider a particle impacting on a sensor (sense base). After hitting (ON) the sensor, the particle rebounds (OFF). Thus particle impact on sensors is not continuous, it goes ON/OFF. The interaction is thus impermanent - anicca. Touch, smell and taste are of this type of interaction, they are all anicca.

5.1.2 Wave – Sensor Interactions

As seen in the figure below a wave rises to a peak and dips to a trough as it travels. The wave hits the sensor when rising to a peak (ON) and moves away when falling to a trough (OFF). Thus wave impact on sensors goes ON/OFF reflecting anicca. Sight, hearing, and thought are of this type of interaction. They are all anicca.

Hence all six sensations are anicca and consequently all nama/rupa are anicca. Machine input-output (IN/OUT) operations go ON/OFF.

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3 In quantum mechanics this is called wave-particle dualism and is expressed by the deBroglie equation

\[ \lambda = \frac{h}{mv} \]

where \( \lambda \) = wavelength, a wave property; \( m \) = mass, \( v \) = velocity, \( mv \) = momentum, a particle property; and \( h \) = Planck’s constant.
Thus anicca is in machines too. Anicca is not a monopoly of living beings.

Anicca is a natural law. It is timeless, spaceless. It transcends the senses. Most say a broken cup shows anicca, while failing to recognize anicca is there with the cup all along – broken or not. Breaking is just an expression of anicca. It is panatti anicca. But paramatta anicca IS even when the cup is intact. So too with people, anicca is present all the time.

5.2 Anatta

In living beings the criteria for life/death, namely the interactions result in nama / rupa pairs only. There is nothing else. There is no separate entity that operates these nama / rupa pairs. Due to interactions they appear and disappear on their own via the cause and effect principle. There is no soul - soulless or anatta.

In instruments, the stimuli-identify/response sequence causes input/output (IN/OUT) only. No separate entity drives it. Thus instruments are soulless – anatta. Anatta is not limited to beings. Anatta is a law and is present regardless of presence or absence of activity.

5.3 Dukkha

Consider a machine that operates ON/OFF non stop; IN/OUT non stop. The repetitive IN/OUT operations cause mechanical and electrical stresses. Continuous stresses will lead to breakdown (death). Thus stresses in machines are machine dukkha.

Similarly nama-rupa cycles are stressful. Dukkha is in all beings. Thus Dukkha is in beings and machines.

Again dukkha is a law and dukkha is present regardless of presence or absence of sensations. Even when sensation is absent there are stresses, such as anticipation stress - stress due to expecting the next sensation (what’s it going to be? When is it coming? Will it be pleasant or disagreeable?); and loss stress - stress due to losing a previous sensation (that sound was pleasant, nice if did not fade off).

All three signs are seen in rupa-nama of beings. Similarly all three signs are seen in input-output (IN/OUT) operations of machines. Thus beings and machines are similar with respect to system characteristics- the Three Signs. Life/death cycles are common to living beings and sensing machines.

6. The Thirty-One Abodes and The Atom – an Analogy

6.1 The Bohr Model of the Atom

The atom is the smallest particle of matter that is indivisible by ordinary means. They are made up of sub-atomic particles called electron, proton, and neutron. There is a nucleus at the center. It is a dense mass composed of protons and neutrons. Most of the atom mass is concentrated in the nucleus. Electrons revolve around the nucleus in designated paths called electron states.

6.2 Electron States

Energy of electron states gets higher away from the nucleus. Electrons move up states by absorbing energy (increased energy). They move down states by emitting energy (decreased energy). They disappear in one state and instantly reappear in another as if by magic (No path is traced). The Driving Force is energy. An excellent animation of the electron states is found in http://www.colorado.edu/physics/2000/quantumzone/bohr.html.

6.3 Macroscopic Samsara and Electron States

The electron states are analogous to the thirty-one abodes. The nucleus corresponds to the four miserable apaya abodes. Just like atom mass concentrates mainly in the nucleus, majority of beings are concentrated here.

The first electron state corresponds to the single human abode; the next six electron states correspond to the six deva abodes; and the next twenty electron states correspond to the twenty brahma abodes.
Beings changing abodes are like electrons changing states. Electrons change states driven by energy. Beings change abodes driven by kamma.

Rebirth of beings and reappearance of electrons is analogous. Death in one abode and birth in another is rebirth in beings. Death in one state and birth in another is reappearance in electrons. **Thus life/death cycles are common to living beings and physical systems.**

7. Rebirth – a Link in Life/Death Cycles

A being dies and is reborn starting a new round of life/death cycles. This is rebirth. It is NOT reincarnation, where the same entity appears again in an after life. In rebirth the entity reborn is **not** and yet it is the previous entity. Yes difficult to accept.

But consider the image in the mirror. Is it you? Is it not you? If you answer either YES or NO, you fall into one of two ditthis (wrong views): **sassataditthi** and **ucchedaditthi**. This is the consequence of being conditioned to Yes/No answers. We think we are obliged to answer Yes or No and nothing else.

Sometimes Yes/No is impossible, only fuzzy answers are available. There are many situations where only “maybe” or “probably” answers are available. This is normal in **quantum mechanics** which is based on probability; and also in **fuzzy logic**, and artificial intelligence (AI). Actually quite a few everyday topics such as weather forecast use probability language.

Perhaps this will help to understand rebirth: consider the e-mail wrote and sent. The received e-mail at the destination is not what you sent, but yet it is what you sent!

Feedback is a link in all cyclic systems such as electrical and chemical oscillators, chemical chain reactions, nuclear chains, photochemical chains, Kreb cycle etc. Rebirth is a feedback and is a link in life/death cycles. **The link is common to living beings and physical systems.**

8. Discussion

It was shown that beings and sensing machines are closely similar with respect to basic processes, functions, composition, and the three signs. Further it was seen that thirty-one abodes and electron states; change of abode and change of state; and rebirth and reappearance are analogous pairs. This led to the conclusion that beings and physical systems are closely similar. Consequently life/death cycles are deduced to be common in beings and physical systems.

This is obviously false. Why? Because only selected factors were considered, while critical factors were ignored. What is missing? Which have been neglected?

Scientists identify “Intelligence” as the missing factor in machines, and much effort is invested in Artificial Intelligence (AI) research, involving topics such as Fuzzy Logic, Artificial Neural Nets (ANNs), and Software like Brainmaker.

Buddhism clearly identifies **jivita rupa** and **jivita nama** as the missing factors in machines. Jivita rupa is missing in machine sensors but is present in sense bases (internal ayatanna – eye, ear, ...). Jivita nama (**citta** + **cetasika**) is missing in the identifying and response functions of machines. But it is present in the consciousness and response of beings. Beings KNOW but machines DO NOT. Thus being and machine are similar but NOT identical. Hence life/death in machine and being are not identical; and therefore machine life/death is not considered as life/death.

9. Conclusion

This is one example of many possible oversimplified interpretations of Buddhist concepts by academics especially scientists and technologists, who regard science as being above Buddhism, and who have minimal exposure to Buddhism.

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4 Mind.

5 Cetasikas such as like (loba) and dislike (dosa) color and defile the basically pure mind.
Remember that science emphasis is on matter only and it is thus limited. It is restricted by being confined to information gathered only via the senses. But Buddhism recognizes both mind and matter (nama/rupa) and transcends sense-based information. It is complete. Academics are supposed to have open minds, but most are blinded by dogma; and the possibility of misrepresentations of Buddhist concepts is ever present.

PART II – DELIVERANCE

Abstract

Crucial points concerning samsara and nibbana are highlighted; escape paths from samsara are identified; and a route is planned. A specific method for escape from samsara, Vinnanahara practice is described via a practical procedure.

1. Introduction

How can the life/death cycles be stopped? How can samsara be stopped? STOP LIVING WITH ACTIONS and life/death cycles will STOP! Samsara will STOP!

But how? In machines it is easy - just switch off the power. In beings an intelligent approach is necessary.

A well-known military strategy is know your enemy, stake out the goal and follow through. This could be used to situations other than military battles. With respect to deliverance, samsara is the enemy, nibbana is the goal and follow through is by practice.

Using this principle first notice crucial points about samsara and nibbana. Identify the escape paths and plan the route. Then PRACTICE! Difficult? Yes, but NOT IMPOSSIBLE!

There are many practice methods available for escape from samsara. They are called vipassana methods. Some are suitable for the young and some for the not so young. Vinnanahara practice is a vipassana method that is most suited for seniors, especially those who cannot tolerate the regimentation or rigid routines of conventional practice centers.

2. Samsara Highlights

On the macroscopic level, the thirty-one abodes constitute apparent samsara. On the microscopic level, interactions constitute paramatta samsara.

The cyclic path is the Paticcasamupada (Law of Dependent Origination) where the links are the Pathanna (Cause and Effect) The confining force that keeps beings in apparent samsara’s thirty-one abodes is ego (Sakayaditthi). It is the Anchor. The driving force that moves beings in apparent samsara’s thirty-one abodes is Kamma. It is the Driver. Thus it is readily seen that to escape samsara ANCHOR (ego or Sakayaditthi) and DRIVER (Kamma) must be NEUTRALIZED.

3. Nibbana – a very rough idea

Life is activity. We live anchored to actions and conditioned by actions. Sustained vipassana bavana (insight practice) observes the stream of consciousness, weakens the attraction to normal conditioned mental activity and prepares the path to non-conditioned (asankhata) alternative states. These alternative states where there is no mental activity exist between moments of awareness. Living in these states is deliverance, liberation or escape from samsara – nibbana.

6 Responses are programmed. Consider your hand touching your face. Now consider the opposite sex touching your face. Why are these two different? After all, both are touch. This is an example of conditioning.

7 Sustained repeated practice for developing insight.
4. The Strategy

There are two weak links in the paticcasamupada cycle (the cyclic path constituting samsara), namely the Avija – Sankhara link (Link A) and Tanha, Upadan – Bava link (Link B). Any practice that aims for escape from samsara must break either one of these links.

To break link A, panna or knowledge concerning the true nature of nama-rupa or true nature of life-death must be developed. To break link B, detachment from nama-rupa (bava) must be developed.

5. The Route

5.1 Escape Samsara at Apparent Level

The anchor confining beings to samsara and the driver that drives beings along the paticcasamupada cyclic path must be neutralized.

5.1.1 Neutralize confining Force, Sakayaditthi (Delete Anchor)

Aim to realize that beings consist of nama/rupa that has the three sign characteristics (anicca, dukha, anatta). This is breaking link A, by developing panna. The practice for this panna development is sati (awareness, mindfulness) on consciousness. The three signs, especially anatta, are experienced first hand and ego (sakayaditthi) is demolished. The anchor is neutralized. Freedom from samsara results.

5.1.2 Neutralize driving force, kamma (Delete Driver)

Usually response to feelings (vedana) can be with like (loba), dislike (dosa), or neutral (moha). All three are misdeeds (akusala kamma) and will drive beings to the lower realms. Loba response will drive beings to become petas or hungry ghosts; dosa response will send beings to the four apayas; and moha response will turn them into animals.

As the mind can accept single occupation only, occupation by sati excludes the three akusala kamma. Presence of sati displaces loba, dosa, moha in the mind. This is breaking link B – detachment. The practice is to place sati on consciousness. Knowing displaces the three akusala kammas - loba, dosa, and moha.

5.2 Escape Samsara at True Level

Don’t live with actions. Live in-between actions. Live with alternative states. The practice is to be aware of both presence and absence of actions.

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Figure 1. A Graphical Representation of Alternative States

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8 Life or existence
The above figure is a simple representation of alternative states. The temporal peaks represent actions, such as sound beats going Boom! Boom! Boom! Notice the base line between two consecutive beats. It is silence or inaction—an alternative state. Usually we live with “sound beats” not with “silence”. Imagine how peaceful it will be if sound beats are ignored and we live with the silence. Everyone must have experienced the nice peaceful blessed silence when loud disturbing sound beats suddenly stopped - so PEACEFUL!

6. Vinnanahara Practice – A Practical Guide

6.1 Initial Stage
- Be in a comfortable position, sitting, standing, lying down.
- Since the practice is citta (mental) work posture is not important.
- Close the eyes (not necessary later), settle and become aware of the body
- (Please note – not YOUR body – THE body) RELAX!
- Kayikadukkha and Cetasikadukkha (Mind and Body stresses) prevent progress.
- While still aware of the body. Become aware of any sound. This is sound sati.
- Music can be used but must be played before starting the practice.
- Don’t repeat “hearing, hearing” verbally or mentally.
- Especially don’t say “I’m hearing” verbally or mentally – it strengthens ego concept.
- Just be aware of the sound happening by itself.
- DO NOT FORCE ANYTHING – WATCH - WHAT REALLY IS.
- DON’T CREATE and SEE WHAT YOU WANT – SEE WHAT IS THERE.
- In short - Put sati (mindfulness) on sound with body as background.
- Practice this at least once or twice daily, 1 hour each time, for 1 month.
- Is 1 hr too long? Try 5 minutes and increase 5 minutes daily.

6.2 Intermediate Stage
- While still aware of the body. KNOW presence of the sound.
- Note the knowing. Know the knowing. KNOWING is nama.
- Focus may want to shift to another sound. Know the wanting. WANTING is nama.
- KNOWING and WANTING is NAMA.
- Rupa (vibrations, ear..) is the cause. Nama (knowing) is the effect.
- In short - Note these nama/rupa pairs happening on the body.
- Automatic realization is required - NOT realization by reasoning.
- Practice this at least once or twice daily, 1 hour each time, for 1 month.

6.3 Advanced
- While still aware of the body watch the nama-rupa happenings on the body
- Do they last? No. They come and go ′!
- Anicca
- Any “Driver”? No! ′! Anatta
- If listening is stress-less, it must not be tiring to listen forever.
- But can that be done? No! Thus nama-rupa happenings are stressful ′! dukkha.
- Realize nama-rupa is Anicca, Dukkha, Anatta
- In short - Note these nama-rupa attributes (Anicca, Dukkha, Anatta)
- Usually seeing all three is difficult. Seeing one initially is okay, other two will follow.
- Practice this at least once or twice daily, 1 hour each time, for 1 month.

6.4 Specialized Stage
- Be comfortable etc. as before. Closed or opened eyes are okay.
- Extend sati to other sounds – whichever is prominent at the moment.
• **Put sati** on attributes of nama-rupa that is **prominent** at the moment.
  - This is **Khanika Samadhi** or Vipassana Samadhi
  - It promotes **permanent eradication** of dukkha via **insight**.
  - **Khanika Samadhi** is different from Ekkagata Samadhi or Samatha Samadhi.
  - The latter promotes **temporary eradication** of dukkha only.
  - **Expand sati to other sensations** (sight, taste, touch, smell, thought).
  - **Focus on whichever sensation is prominent at the moment.**
  - **Know presence AND Know absence** (to displace anticipation and loss stresses)
  - **Bias awareness on absence** (to promote living in alternative states)
  - **In short - Put sati on attributes of any six nama-rupa pair that is prominent**
  - Do this **all throughout the waking hours** until you get insight!
  - Difficult? Yes! But **DO … IT … NOW!** WITH DETERMINATION!

7. Conclusion

One method of vipassana practice for deliverance from samsara has been described. Diligent practice shall give positive results. However it remains to state that sole emphasis on just vipassana practice, any one, is not conducive to progress. It is advisable not to ignore dana, sila and samatha practice, as they are the ground on which vipassana thrives.

One or more of the following four **caturarakka kamathannas** that are bases for insight development is needed: **Buddha-nusati**, **Marana-sati**, **Asuva-kamathanna**, and **Metta-kamathanna**.

May this Dhamma dana be a solid support for attaining Nibbana in this very life!
May you all be peaceful and be liberated from samsara!

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