Science and Buddhism; Physics and Emptiness

Robert Paul April 12, 2016

Summary

1. There exists a world independent of our personal experience.
2. Science acquires, discovers knowledge about that world.
3. Since science is objective, it is hard to imagine a science of experience, a science of mind.
4. Science does not respect authority, but rather respects evidence and reason.
5. Religion doesn't discover truth; it is revealed by authority and is dependent on faith above reason.
6. The Buddha and teachers tell us that we should not rely on their authority without evidence and reason.
7. Hence Buddhism is not a religion
8. Shunyata is that nothing has inherent nature, but are rather relational.
9. Physics identifies those things that have inherent nature
10. Hence, universal śūnyatā is false.
11. However, there is a pluralism of different objective contexts or domains discovered by physics.
12. Some phenomena has inherent nature in some domains, in some they are relational. It is context dependent.
13. That is the core meaning of śūnyatā: things are different in different contexts.

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Science, Religion, Buddhism, Shunyata, Physics

Science	**Religion**	**Buddhism**	**Shunyata**	**Physics**
Acquires new knowledge about shared but objective experience	As way of life =culture, philosophy Or As revealed truth belief system=religion	About personal subjective experience. Nature of world?	Lack of inherent nature 2-fold shunyata Self and phenomena	Fundamentalism Pluralism
Evidence, Observation, Testing, Replicable, Confirmable, Falsifiable Skeptical Challenge Platos Cave, Descartes	Revealed knowledge Truth already known Beyond question	Revealed or acquired knowledge, philosophy? Authority--Quotes	Not Svabhava Independence or interdependence • Causal • Compositional • Temporal	Pluralist Truth in a domain Discourse—context Epistemic--theories Ontic--domain
Theory, Explanation, Mechanism	Faith and belief trumps evidence and reason Dogma Heretics	Evidence and Faith, belief, argument Faith is informed by evidence and reason Faith is reason?	Appearance (relative) 1.total illusion 2.projection of svabhava	There is inherent nature—in many domains
Ultimate Phenomena, Applied Appearance	Personal experience, subjective, individual	Not a religion	True Phenomena (ultimate, absolute) 1. only seen by Buddhas 2. interdependent, relational	Causal—conserved q Compositional Rock, atoms, binding Temporal Persistence
No Biases, No authority		Vajra master said test, alone, Blind faith, allegories		
Falsifiability		Objectivity		
Is there a science of mind? Buddhism?		Dualism—external world independent of mind		

- From the *Kālāmas Sutra, Discourse to the Kālāmas*
  my word should be accepted by the wise only after investigation, not out of respect (for me)—just as gold (is accepted) only after heating, cutting and rubbing. (From the *Kālāmas Sutra)*
- Chogyam Trungpa *Cutting Through Spiritual Materialism* (p187-188) chapter on shunyata and description of the *Heart Sutra*:
  Then Avalokiteshvara spoke with Shariputra, who represents the scientific-minded person or precise knowledge. The teachings of the Buddha were put under Shariputra's microscope, which is to say that these teachings were not accepted on blind faith but were examined, practiced, tried and proved.
- More explicitly, the Dalai Lama has recently written that
  My confidence in venturing into science lies in my basic belief that as in science so in Buddhism, understanding the nature of reality is pursued by means of critical investigation: if scientific analysis were conclusively to demonstrate certain claims in Buddhism to be false, then we must accept the findings of science and abandon those claims.
- Hence, Buddhism is not a religion by my definition

- **Science**
- **Religion**
- **Buddhism**
- **Emptiness**
- **Physics**

Set up dichotomy between religion and Buddhism that allows comparisons between Buddhism and science

What is science?

- Mode of knowledge acquisition about **anything** in the world
- Relies on **observation** of how things appear, on their own and in **experiment**
    - Basic/theoretical science seeks understanding of **ultimate** nature of nature of underlying phenomena
    - Applied science uses theoretical science to understand and control appearance
- Does not rely on authority
- Requires evidence (appearance)
    - Replicable
    - Identify and control for biases
- Requires explanation of evidence (phenomena)
    - Theory with falsifiable hypotheses
    - Mechanism for producing evidence
- Evidence trumps theory every time.

What is religion?

- Mode of knowledge already acquired
- About the **ultimate** nature of the world and how it can be applied
- Relies on revealed authority.
    - Truth is already known.
    - Faith and belief trump evidence.

What is Buddhism?

- Mode of knowledge acquisition about **anything** in the world
- Relies on **observation** of how things appear
  - Seek knowledge of **ultimate** nature of nature of underlying phenomena
  - Seek knowledge of **relative** appearance to live in the world
- Does not rely on authority
  - Truth must be personally discovered
  - Evidence trumps faith, belief and argument
    - From the *Kālāmas Sutra, Discourse to the Kālāmas*
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  - Hence, Buddhism is not a religion by my definition
- What about instructions by the vajra master?
  - My first vajra master insisted that I was alone on my own path
  - Many others insisted that I must walk it alone
  - We must become convinced in order to have faith
  - Blind faith is useless on our path
  - We must be scientists about our path to determine what is right for us—which of the thousands of skillful means addresses our needs—if any
- Question
  - Objectivity, dualism—external world independent of mind

Shunyata

- Everything lacks essential essences
  - Essential essences are independent
  - Independent things cannot be known; knowledge requires interaction
    - Independent of causal relationship with other things
    - Independent of causal relationship with parts (no parts; unity)
    - Independent of flow of time—permanent (persistent)
  - We know phenomena in the world because they are shunya—they interact
    - Things interact causally
    - Things have parts that relate to the whole causally
    - Things are impermanent
- Two Truths
  - Appearance (relative truth)
    - View 1: everything that appears is an illusion, hallucination, fiction, falsehood. Appearance is unreal; things that appear are unreal; it is all a dream.
    - View 2: we typically project essential essences into what we observe. To the degree that we do this, what we project is illusory. It is our projections that are illusory and false, not appearances
  - Ultimate reality (ultimate truth)
    - View 1: ultimate reality is perceived only by enlightened Buddhas in meditation. It is ineffable, indescribable by language or concept. It is non-conceptual.
    - View 2: ultimate reality is the phenomena of interactive things that underlay the appearance of independent essences. Ultimately, all things are mutually interdependent

View 1 and View 2 are shared among all the lineages, yet historically View 1 is from Gorampa and shared by many Kagyu-Nyingma; View 2 is from Tsongkhapa and shared by many Gelug. I have heard/read both views espoused by my teachers at different times and contexts.

Physics and shunyata

Physics provides a conceptual map

- purged of the projections of our personal views as much as humanly possible
- in order to explain ultimate and relative reality

My research

- I took as hypotheses the views of shunyata and their conceptual justifications found through the traditional Madhyamaka arguments
- I found the arguments generally illogical and/or factually fallacious
- I found better arguments that were internally logical and had higher correspondence with the facts of modern physics:
    - Physics fundamentalism (ontological reductionism) is not universally true
    - Pluralism is required
    - Some things are unities
    - Some things are persistent to the point of essential permanence
    - Causality is best described by a movement of conserved quantities that expresses mutual interdependence
    - Sevenfold/Neither one nor many as an example

My understanding of Buddhist philosophy is that it is the expression or projection into the concepts, language and culture of the region and times from awareness that is achieved through direct experience in meditation and post-meditation through Buddhist practices. We learn of those practices with instructions given in our concepts, language and culture, as pointing towards reality without actually being able to express it fully. Sometimes teachers give those instructions through metaphor, analogy, simile, poetry, song or body language in order to bridge the gap between what they really mean and our conceptual interpretation of them.

At least one purpose of these practices is to revise our mistaken concepts of the nature of reality that we acquire when we take appearances as the actual reality, i.e. the underlying pure phenomena. With meditation, we may see things as they actually are.

In a sense, science is similar. Experiments and observations are direct perceptions of appearance. While this is the 'evidence' used by science, there is more to it: theory. Scientific theory is the conceptual expression or projection of our concepts into an explanation of how things appear the way they do. Theories represent reality in models and mathematics, and as with any representation we should not confuse the map for the territory. It is not that appearance, models and theory are false or illusory, but rather they are incomplete.

Behind my explanation is the two truths understanding of emptiness (shunyata). Shunyata is that things have no independent essence. When we realize that there is no independent essence, how can we grasp and fixate on things? Hence, we become free of the suffering that such silly activities generate.

We may understand at least two interpretations of the two truths, based on the debates between the Gelugpa founder Tsong-kha-pa and his Shakya near contemporary Gorampa. The latter view was adopted by many Rime scholars in the Kagyu and Nyingma lineages. To be oversimplified in this brief exposition, Gorampa argued that relative appearance is totally illusory and deceptive, and ultimate pure phenomena is discovered only through direct experience by realized beings in meditative equipoise. In this interpretation nothing that normal folks see is real. Tsong-kha-pa argued that relative appearance is deceptive when we project inherent nature into what we perceive, while when we realize that there is no inherent nature we can see how things are ultimately interdependent. Hence, what we normal folks see is real, but we understand them in a mistaken manner until we get educated, trained and experienced in seeing the relationality of things without inherent nature.

There are serious problems with my oversimplification. It is very difficult to function in our life with an attitude that everything we experienced was an illusion. The problem is clarified when we realize that what is illusory are our concepts *about* what we experience, not the experience itself. Hence, what we need to focus on is seeing through those concepts. In this way, the two interpretations of the two truths can be seen as similar, if not identical.

Similarly, science attempts to find accurate concepts about our experience which express the nature of true reality. In order to determine them, our theories are translated into predictions about further experience—evidence. Through tests of those predictions, we can determine whether our conceptual models have some accuracy in describing the true reality.

There have been many attempts to distinguish religion and science. Some say that religion seeks the higher, ultimate, 'transcendent' truth, while science addresses the mundane, apparent—what is called the relative. My view is that both seek the same ultimate truth by different methods. The method of religion is personal experience and teachings that explain it, the method of science is experiment and theory that explains it. These may sound similar, yet they are importantly different. The former is very personal, individual and subjective, the latter is shared, communal and objective.

We must therefore immediately ask whether we can compare these—can science and religion generally, and Buddhism specifically, play nicely together? There are two intimately related fundamental principles of science that basically cannot be violated without grave damage to the entire enterprise: evidence and lack of authority. Hence, we do not believe the words of Einstein or Hawking without confirming evidence, and evidence trumps authority, theory, logical argument, intuition, etc., every time. Can religion generally and Buddhism in particular accept this requirement?

For those who take the words of the Torah, the New Testament, the Koran, Sutras, high Tibetan lamas, or even our own guru as dogmatic gospel to be believed without question, then yes, there is a severe conflict. However, our teachers have told us not to do this. To my mind, the Buddha was clear that we should not trust his words without testing and analysis:

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All of us should be seriously questioning, examining, testing and being critically open to what we hear and read. We should not become religious about it all. If we do, we can easily fall prey to dominance by the unscrupulous, and also become vulnerable to debate because we are not rationally convinced of the truth of the teachings, but simply *believe*. That is dangerous. Criticism, discussion and debate are vital to the life of our teachings, just as it is in science and free society generally. Hence, as long as we follow this, there should be no conflict between science and Buddhism on this dimension.

However, some people seem to think that science is scientism, and physics is physicalism. I argue that neither of these are either science or true. Physicalism is the belief that every phenomena can be reduced to its physical components. This is also called reductionism. Physicists have determined that reductionism is not accurate for many phenomena; there is an emergent holism that cannot be reduced.

Scientism is the belief that science is the only source of knowledge. I addressed that initially to state that I don't believe this to be the case. Science—at least to date—cannot comprehensively understand personal experience. Try coming up with a description of the taste of a strawberry. All concepts fall short. There is—I would argue—non-conceptual knowledge, and science is restricted to a conceptual expression of the results of experimentation. Scientists are really good at drawing maps, but should not

forget that it is not the territory. That goes with Buddhists as well—the words of teachings are mere pointing out the nature of reality, not the actual reality.

But, we all know that, eh?