

# An End-run 'round Entities: Using Scientific Analogies to Teach Basic Buddhist Concepts

William S. Waldron  
Middlebury College

*Teaching Buddhism in the West: From the Wheel to the Web.* 2002b, Hori, V. S., Hayes, R. P., Shields, J. M. (eds.), RoutledgeCurzon, pp.84-91.

Students bring with them to the classroom assorted sets of assumptions, however implicit or inchoate they may be, about the world, about causal relations, about personal identity, linguistic reference, and so on. Since so many aspects of the early Buddhist view radically differ from commonly held assumptions, students are often perplexed in their initial encounter with Buddhist thought. This reaction is exacerbated, I think, by the standard presentation of the Buddhist catechism with its time-honored stock formulas—the Four Noble Truths and the Three Marks, etc. I have therefore tried to introduce key Buddhist perspectives without using Buddhist jargon. Instead, I have found it expedient to initially present Buddhist concepts in terms of current scientific explanations rather than in those inherited by, for example, traditional Western religion or philosophy. This paper will outline the purpose of using scientific analogies to present basic Buddhist concepts and briefly describe some practical procedures.

## **Purpose**

Because so many of our persisting modes of thinking and expression are derived from substantialist Greek philosophy or from theistic religion, it is often difficult to extricate ourselves from terms of substance, essence, souls, and identity, and to find skillful ways to express the Buddhist worldview. There is a disjunction between the aims and assumptions of the Buddhist worldview and the means of expression most readily available to present and explain that worldview. In other words, our working vocabulary for discussing religion and philosophy is so imbued with substantialist assumptions that the vocabulary itself obstructs rather than edifies the very worldview we are attempting to explain. Hence, if we are to adequately convey the radically different perspective provided by the Buddhist worldview, we need a different vocabulary, a different set of categories based upon a different set of assumptions.

Fortunately, such terms, categories and assumptions are already available in some of the overlapping worldviews comprising our modern age, particularly in the general principles of various scientific disciplines. It is possible to exploit these pre-existing scientific notions of

interdependent causality, drawn from a variety of fields and used in a variety of applications, as an effective means of breaking down the a priori assumptions students typically bring with them regarding the reality of entities, essences and active agents—the very assumptions that typically prevent students from understanding the Buddhist notions of interdependence and selflessness. Scientific analogies therefore provide explanations, a working vocabulary and a useful set of categories, that are more commensurate with the Buddhist worldview than those derived from cultural traditions which are so irrevocably at odds with that worldview. By providing a bridge to Buddhist concepts that is based upon familiar conceptual frameworks and is couched in commonly understood terms and categories, scientific analogies can provide an “endrun” around the entities and essences assumed in traditional Western worldviews. (Needless to say, this process neither attempts any comprehensive comparison of Buddhist and scientific worldviews, nor aims to accrue the credibility of one field onto another; it is used strictly heuristically.)

### **Practice**

Although quantum physics may be the most obvious area for analogies with Buddhist thinking—with the wave\particle nature analogized to the non-duality of Emptiness and Form perhaps the most famous—nevertheless, I think the Indian Buddhist worldview is much better served by analogies derived from biology, as the vegetative metaphors and similies used in Buddhist texts would readily suggest: trunks and roots, seeds, fields and fruits, etc. Hence, I have found it useful to initially engage in modes of inquiry that draw upon students' (my students at least) pervasive concern with environmentalism and basic understanding of biology, evolution and ecology.

Because my purpose is to use general scientific principles primarily as heuristic devices rather than to suggest potentially specious point-by-point analogues, I use a Socratic method of bringing out certain foreseeable conclusions through classroom participation. I begin by inquiring into the constitutive conditions of an inanimate object, usually a river, and then proceed with the same deconstructive method to animate objects, a tree, a frog and finally, to humans (severely straining the forbearance of those for whom this is their first chance to develop *anutpattika-dharma-kṣanti*)

### **Dependent Arising**

I ask the students to describe as the constitutive conditions of a river: how it came to be, how it persists, and what exactly the term 'river' refers to. Students generally enjoy demonstrating

their environmental and ecological literacy (as, I suppose, do I) and we hastily make headway toward a variety of “Buddhistic” conclusions:

- That because the term “river” refers to the continuous flow of water bound by the river bed and riverbanks, and fed by tributaries that were themselves fed by rainfall that was in turn produced by evaporation from the oceans into which the rivers themselves ultimately fed (i.e. the widely understood “water cycle,”) we readily reach the classic Buddhist position that the term 'river' is merely a useful designation for a selected part of a complex set of processes that come about through a long history of interaction and that persist only as long as the conditions that enable it also persist (with the important corollary that the processes that brought about the river were themselves products of complex conditions).
- That because it was the flow of the water itself through gravity and friction (i.e. erosion) that initially carved out the river bed that thereafter directed the subsequent flow of water, which in turn carved out a deeper bed, and so on, it is easily understood that the river current and the river bed mutually shaped and influenced each other, building upon the formations carved out by their own previous interaction; that structures or patterns arise through a history of interaction of distinct yet inseparable processes is clearly and almost viscerally understood.
- That because our understanding of the persisting interaction of gravity, friction, the water cycle, etc. is sufficient to account for the origins of the river, without reference to any controlling or directing force external to the relations between these nor inherent within any single factor among them, we readily come to the conclusion that it is nonsensical (given a naturalistic frame of reference) to ask the question: “Who made the river?” This point is so obvious, students usually laugh when I ask it.

It takes but a few minutes to extend this line of questioning to plant life, using a tree as an example. This complicates the process considerably of course, because of the necessary antecedent condition of seeds, the metabolic processes of organic growth and development, the complex chemical processes of photosynthesis, etc. This line of inquiry necessarily engages evolution as well. But the complexity here strengthens rather than weakens the aforementioned conclusions, especially the point that the patterns of natural phenomenon come about without any external or internal agent or force. So we have now painlessly reached, through biology alone,

three strong points indispensable to the Buddhist worldview, all without referring to anything outside of the student's previous range of knowledge:

1. That complex processes come about through long histories of interaction and persist only as long as the conditions that enable them also persist.
2. That interaction and mutually reinforcing feedback mechanisms create and build upon structures that fabricated by their own previous interaction; more on this later.
3. That natural phenomenon come about without any external creator, nor by means of any internal agent or force. Who *makes* the cells photosynthesize? Who *makes* cells reproduce, absorb and process nutrients, etc.? In fact, who *grows* the tree? Does it *grow* itself, as an active agent? If so, which exact part of it grows itself?

Their now pleasantly puzzled faces indicates they find these questions predictably absurd and silly. They have reached that quintessentially Buddhist sentiment expressed in the *Zenrin kushū*: “the grass grows by itself.”

This exercise skillfully sidesteps the implicit and widespread assumption that entities are fixed “things” somehow isolated from their surrounding environment, knowable without reference to their own developmental histories, and singular or unitary despite any internal differentiation. By simply avoiding such assumptions, scientific analogies are actually *more* useful than traditional (i.e. cultural) language in conveying the sense of many Buddhist concepts—for the very reason that they break down, rather than reinforce, the sense of the world as comprised of isolated entities bumping up against each other in billiard ball Newtonian universes. That “things” arise conditioned by their systemic relations with a complex of other factors is an underlying assumption of virtually every modern scientific discipline, and the students implicitly know this. We, the students, are already firmly in the groundless realm of dependent arising.

### **Designation**

The concept of “designation” was also alluded to in the above passages, for in the analysis of a river or tree students readily understood that these terms focused on only certain parts of a much larger complex of related processes, a focus that is somewhat arbitrary depending upon one's interests. A tree can be but an insignificant part of a forest to an ecologist, a total environment to an entomologist, a natural resource to a businessman, or a source of inspiration to a mystic or poet.

This point then can be extrapolated from the designation of objects to a critique of theoretical discourses by asking a simple question. Which discipline is the really correct way of

understanding human life: anthropology, psychology, sociology, biology, religion, etc.? This will be greeted with a laugh and a shrug, so commonsensical is the Mahāyāna idea of conventional truth, that technical discourses as skillful means designed to meet specific, contingent needs. The acknowledgement that each field has its own models that might not map into one another undermines claims to an exclusively valid discourse and hence relativizes discursive thinking altogether, a point that Nāgārjuna would find congenial, I think. How one cuts up the pie, then, is determined by a collective agreement based upon the specific pragmatic purposes it is designed to serve, not by some incorrigible correspondence with Reality. Again, I have found the scientific analogies for this critique linguistic reference far more accessible to students than similar formulations found in traditional Western thinking. At the very least, they serve as an efficient way to prime them for deeper reflections.

### **Non-self**

We are all familiar with the difference between technical scientific discourses and the well-nigh necessity of speaking colloquially in terms of entities, essences, egos and agency. We anthropomorphize weather and so-called “computer memory”; we use allegories, similes, synecdoches, to express complex patterns of interaction that are otherwise difficult to grasp. There is thus a radical disjunction between most scientific explanations based on complex multicausality and our everyday language which either refers to or implies the existences of entities and agents. This disjunction is brought out most clearly by extending the kind of deconstructive analysis previously applied to rivers and trees even closer to home—to us.

Extrapolating from the analysis of trees and their seeds, we now analyze how animals with rudimentary nervous systems, like frogs, came to be and to “do. Like the river and the tree, animals are also the result of countless transformations that were, in each and every step, built upon structures already created by their own previous developmental history. The mutually reinforcing feedback mechanisms called evolution (again, assuming a naturalistic worldview) operates without any external creator nor internal, directing force. Once again we ask, who *grew* the frog? Does it actively *grow* itself? These questions are similarly ill-formed.

Even the frog's behavior, such as abruptly capturing a fly with its sticky tongue, can also be understood as a natural and “automatic” functioning of its primitive nervous system, whose structures and capacities came about through complex evolutionary developments, and which operates, like the metabolic processes of photosynthesis, without the need for any central controlling agent. Who, after all, *makes* the neuron respond the way that it does? If the chemical processes in plants operate “by themselves,” then so do neurons in the nervous systems, which

engage only the stimuli they have evolved to engage. There is no need to impute higher cortical functions of conscious intention to each and every cell, nor, perhaps, to anything at this stage of life. Like the river, the tree, and its individual neurons, can't the frog's simple activities also be thought to "just happen"? Assenting students have unwittingly crossed a conceptual Rubicon.

We are now but a short step from some cold, slimy frog, whose nervous system "functions by itself" without any central controlling agency, to our warm cuddly neonate whose potentially complex nervous system is still too undeveloped to speak unequivocally of agency or intention: when a baby is hungry it cries, when it is happy it coos. The language of agency, identity or intentionality is still premature. In the growth and maturation from the neonate to an adult, however, a personality, a personal identity, is forged through the complex and countless interactions between nervous system, environment, experience, memory, etc. But we must analyze the construction of personality in the same fashion as before. Who made the personality? Who is in charge of its growth? Who, in short, made us who we are?

Propelled by the inertia of the previous analyses of the river, the tree and the frog, we are forced to conclude that the personality is the end result of the development of neural and cognitive structures created through previous actions and experience, an endless interaction between one's internal, physical and social worlds, all of which came about without an external or internal controlling agent. So *who* experiences moment to moment? *Who* desires, gets hungry, passes water, etc.? Like the Zen grass, like the river, the tree, the frog's nervous system, whatever we "are" came about, matured and continues to operate "by itself."

We have no *explanatory* need for an internal director in charge of it all, a hidden puppetmaster pulling all the strings, in order to account for either the genesis of personality or the moment-to-moment processes of body and mind. A naturalistic account of who we are requires no real "we" behind it all, only a conventional designation. Whatever the sense of self may be or refer to, it clearly seems added on to the basic metabolic and cognitive processes of human life, and its adventitious nature is painfully but inescapably demonstrated.

Students' smiles have given way to gasps of inchoate objections as they viscerally register the implications of this basic Buddhist perspective. We know that they have come to understand the concept of attachment to self by that fact that they react to this last round of deconstructive analysis - demonstrating the basic Buddhist idea of non-self - not with the élan and elation elicited at the outset but with despair and deflation of the denouement at the end, a typical response to a cogent presentation of non-self.

Once contextualized in this fashion, the presumed primacy of narrative agents, of beings in charge of their own story, is irredeemably challenged; it loses its status as self-evident or revealed

truth. Narrative agents may now be seen as a kind of myth-making, with no myth claiming as strong a hold on our imagination as that of a self within, our homunculus watching the movie at home. Some judicious reference to the congruent conclusions of cognitive scientists at this point may stir the pot even more.

This short exercise in scientific analysis and analogy has altogether bypassed the detours of essentialist and substantialist thinking and taken students to the threshold of Buddhist thought. Where you go from there is up to you.