

Supplementary Notes
To the Retreat on the First Three Bardos in Padmasambhava's *Natural Liberation*
Phuket, summer 2014
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- Buddha: “Breathing in long, one is aware, ‘I breathe in long.’ Breathing out long, one is aware, ‘I breathe out long.’ Breathing in short, one is aware, ‘I breathe in short.’ Breathing out short, one is aware: ‘I breathe out short.’ ‘Attending to the whole body, I shall breathe in.’ Thus one trains oneself. ‘Attending to the whole body, I shall breathe out.’ Thus one trains. ‘Pacifying the composite of the body, I shall breathe in.’ Thus one trains oneself. ‘Pacifying the composite of the body, I shall breathe out.’ Thus one trains.”
- *The Perfection of Wisdom Sūtra in Ten Thousand Stanzas*: “Śāriputra, take the analogy of a potter or a potter’s apprentice spinning the potter’s wheel: If he makes a long revolution, he knows it is long; if he makes a short revolution, he knows it is short. Śāriputra, similarly, a Bodhisattva, a great being, mindfully breathes in and mindfully breathes out. If the inhalation is long, he knows the inhalation is long; if the exhalation is long, he knows the exhalation is long. If the inhalation is short, he knows the inhalation is short; if the exhalation is short, he knows the exhalation is short. Śāriputra, thus, a Bodhisattva, a great being, by dwelling with introspection and with mindfulness, eliminates avarice and disappointment towards the world by means of non-objectification; and he lives observing the body as the body internally.”
- *The Perfection of Wisdom Sūtra in One Hundred Thousand Stanzas*: “You accomplish the first dhyāna and abide therein; you accomplish the second dhyāna and abide therein; you accomplish the third dhyāna and abide therein; you accomplish the fourth dhyāna and abide therein. You settle in meditative equipoise in the fourth dhyāna and experience numerous types of paranormal abilities. You cause even the earth to quake; you transform from one to many; you transform from many to one; you experience becoming visible and invisible; you pass through walls; you pass through fences; passing through mountains, you move about with an unimpeded body, like a bird in the sky. You move through space in the cross-legged position, like a feathered bird. You move up through the earth and down into the earth, as if moving through water. You walk upon water without sinking, as if proceeding on land. You billow forth smoke and blaze with light, like a bonfire.”
- William James (1842–1910): Where preferences are powerless to modify or produce things, faith is totally inappropriate, but for the class of truths that depend on personal preference, trust, or loyalty for actualization, “faith is not only licit and pertinent, but essential and indispensable. [Such] truths cannot become true till our faith has made them so.” [*The Will to Believe, and Other Essays in Popular Psychology* (New York: Longmans, Green, and Co., 1898), 96.]
- Buddha: “For one who clings, motion exists; but for one who clings not, there is no motion. Where there is no motion, there is stillness. Where there is stillness, there is no craving. Where there is no craving, there is neither coming nor going. Where there is no coming or going, there is neither arising nor passing away.

Where there is neither arising nor passing away, there is neither this world nor a world beyond, nor a state between. This, verily, is the end of suffering.” *Udāna* 8:3

- *The Vajra Essence*: “Leaving your body, speech, and mind in a state of inactivity is the unsurpassed, supreme technique for inserting the vital energy and mind into the central channel.”
- *The Vajra Essence*: “Motionlessly relax your body in whatever way is comfortable, like an unthinking corpse in a charnel ground. Let your voice be silent like a lute with its strings cut. Rest your mind in an unmodified state, like the primordial presence of space. Remain for a long time in these three ways of resting. This pacifies all illnesses due to disturbances of the elements and unfavorable circumstances, and your body, speech, and mind naturally calm down. The ultimate purpose of this practice is to experience the dharmakāya, free of activity.”
- H. H. the Dalai Lama (*Dzogchen*): “When you rest the mind, putting it out of work, the vital energies naturally become refined, and solely by non-conceptual meditation, you slip into the clear light with the mind and vital energies. This requires settling in complete inactivity, which is not easy!”
- Padmasambhava (excerpted from Karma Chagme’s *Spacious Path to Freedom*): To introduce pristine awareness by pointing it out forcefully, it is your very own present consciousness. When it is this very unstructured, self-luminous consciousness, what do you mean, “I do not realize the ultimate reality of the mind”?

There is nothing here to meditate on, so what do you mean, “it does not arise due to meditation”?

When it is just this direct awareness, what do you mean, “I do not find my own mind”?

When it is just this uninterrupted clear awareness, what do you mean, “the nature of the mind is not seen”?

When it is the very thinker of the mind, what do you mean, “it is not found by seeking it”?

When there is nothing at all to do, what do you mean, “it does not arise due to activity”?

When it is enough to leave it in its own unstructured state, what do you mean, “it does not remain”?

When it is enough to let it be without doing anything, what do you mean, “I cannot do it”?

When it is unified, indivisible clarity, awareness, and emptiness, what do you mean, “it is affirmed and unaffirmed”?

When it is spontaneously self-arisen without causes or conditions, what do you mean, “I can’t do it”?

When the arising and release of thoughts are simultaneous, what do you mean, “they do not occur together”?

When it is this very consciousness of the present, what do you mean, “I do not recognize it”?

The ultimate reality of the mind is certainly empty and without basis. Your mind is intangible like empty space. Is it like that or not?—observe your own mind!

Empty and void but not a nihilistic view, self-arisen, primordial consciousness is original, clear consciousness. Self-arisen and self-illuminating, it is like the essence of the sun. Is it like that or not?—observe your own mind!

Awareness, primordial consciousness, is certainly unceasing. Uninterrupted awareness is like the current of a river. Is it like that or not?—observe your own mind!

The dispersing thoughts of ideation are certainly not being grasped. This intangible dispersion is like a hazy sky. Is it like that or not?—observe your own mind!

Recognize all appearances as self-appearing. Self-appearing phenomena are like reflections in a mirror. Is it like that or not?—observe your own mind!

All signs are certainly released in their own state. Self-arising and self-releasing, they are like clouds in the sky. Is it like that or not?—observe your own mind!

- Śāntideva: “As a result of surrendering everything, there is *nirvāṇa*, and my mind seeks *nirvāṇa*. Surrendering everything at once--this is the greatest gift to sentient beings.” [*A Guide to the Bodhisattva Way of Life*, III: 11]
- *The Vajra Essence*: “By taking the mind itself as the path, a person of superior faculties directly actualizes the nature of existence of suchness—ultimate reality—and realizes the consummation of saṃsāra and nirvāṇa, achieving liberation in the pristine domain of absolute space. A person of middling faculties achieves certainty in the formless realm, and a person of inferior faculties experiences joy in the form realm. For a person of the lowest faculties, the path is experienced as happiness in the desire realm. Please, Teacher, explain how this occurs.”

He replied, “O Vajra of Mind, first merge this mind with external space¹ and remain in meditative equipoise for seven days. Then fix your attention on a stone, a stick, a physical representation of the Buddha, or a syllable, and remain in meditative equipoise for seven days. Then imagine a clear, radiant, five-colored *bindu* at your heart, fix your attention on it, and remain in meditative equipoise for seven days. For some, this places the mind in a state of bliss, luminosity, and vacuity. This experience, devoid of thought, like an ocean unmoved by waves, is called *śamatha with signs*.

“Some cannot calm their thoughts because the mind is so agitated, and they experience uncomfortable pains and maladies in the heart, the life-force

¹ Sera Khandro in *Garden for the Delight of the Fortunate* says, “As for external space, all phenomena included in the vast outer physical worlds; the multitudes of inner animate sentient inhabitants; the well-displayed intervening appearances of the five senses; your own body, aggregates, sense domains, and elements; and all the mental functions and appearances of ordinary sentient beings are external space.” (GD 87).

- channel, and so on. Those with unstable minds, with a wind constitution, or with coarse minds may fall unconscious or slip into a trance. Such people should relax and let thoughts be as they are, continually observing them with unwavering mindfulness and careful introspection.”
- *The Enlightened View of Samantabhadra*: The Bhagavān replied, “O apparitional display of disciples, listen! Now it is crucial for you to know your own causal characteristics. There are two kinds of paths: Individuals with supreme faculties proceed within themselves by way of the direct crossing-over, and individuals with middling or inferior faculties proceed gradually, in dependence upon the grounds and paths. To investigate this, first of all merge your mind with empty, external space and remain in meditative equipoise for twenty days. By so doing, individuals of the first type will perceive the originally pure essential nature of the primordial ground with the eye of wisdom, and they will identify this within themselves. “Individuals of the latter two types will be tormented by confusion and distress, and since their minds do not seem to merge with space, they will pass the time in fabrications and striving, while becoming caught up in many thoughts. Here is the way for them to enter upon the grounds and paths. They should practice by abiding in consciousness and recognizing the movements of thoughts, as follows: Like people watching a show of optical illusions, by meditating diligently with keen enthusiasm, all the subtle and coarse assemblies of thoughts will be *calmed* in the ocean of the primordial ground, they will abide in a state of unwavering *stillness*, and there will arise the experience of *śamatha*. At this time there will arise bliss like the warmth of a fire, luminosity like the breaking of dawn, and nonconceptuality like an ocean unmoved by waves.
 - John Watson: Psychology must “never use the terms consciousness, mental states, mind, content, introspectively verifiable, imagery, and the like,”² and “psychology must discard all reference to consciousness.”³
 - B. F. Skinner (1904–1990) argued forty years later that since mental phenomena lack physical qualities, they have no existence whatsoever. “To agree that what one feels or introspectively observes are conditions of one’s own body is a step in the right direction. It is a step toward an analysis both of seeing and of seeing that one sees in purely physical terms. After substituting brain for mind, we can then move on to substituting person for brain and recast the analysis in line with the observed facts. *But what is felt or introspectively observed is not an important part of the physiology which fills the temporal gap in a historical analysis.*”⁴
 - Michio Kaku (*The Future of the Mind: The Scientific Quest to Understand, Enhance, and Empower the Mind*):
 - A thermostat has the lowest possible level of consciousness while humans, with our ability to move through space and project ourselves mentally backward and forward in time, represent the highest level currently known.

² John B. Watson, “Psychology as the Behaviorist Views It,” *Psych. Rev.* XX (1913): 163.

³ Ibid. 166.

⁴ B. F. Skinner, *Science and Human Behavior* (New York: Macmillan, 1953).

- “There is no such thing as the Hard Problem.”
- The hard problem of consciousness is the problem of explaining how and why we have qualia, or phenomenal experiences — how sensations acquire characteristics, such as colors and tastes.
- Daniel Dennett:
 - A human being is nothing more than “an assemblage of roughly a hundred trillion cells,” each of which is “a mindless mechanism, a largely autonomous micro-robot.”
 - “There simply are no qualia at all.”⁵
- Cristof Koch, referring to mental process and brain functions: “Are they really one and the same thing, viewed from different perspectives? The characters of brain states and of phenomenal states appear too different to be completely reducible to each other.”⁶
- John R. Searle, from *The Rediscovery of the Mind* (Cambridge, Mass.: The MIT Press, 1994)
 - “The absurdity of behaviorism lies in the fact that it denies the existence of any inner mental states in addition to external behavior...[which] runs dead counter to our ordinary experiences of what it is like to be a human being.”
 - “Because mental phenomena are essentially connected with consciousness, and because consciousness is essentially subjective, it follows that the ontology of the mental is essentially a first-person ontology...The consequence of this...is that the first-person point of view is primary.”
 - “Consciousness is not a subject that is treated as a worthy topic in its own right, but rather simply as an annoying problem for the materialistic philosophy of mind.”
 - “Earlier materialists argued that there aren’t any such things as separate mental phenomena, because mental phenomena *are identical* with brain states. More recent materialists argue that there aren’t any such things as separate mental phenomena because they *are not identical* with brain states. I find this pattern very revealing, and what it reveals is an urge to get rid of mental phenomena at any cost.”
 - Paul Ekman (Private correspondence, Sept. 2, 2014): “For now first person reporting by trained introspectionists is the main tool for understanding the mind.”
- Śāntideva, excerpted from Chapter Thirteen: The Four Close Applications of Mindfulness in *A Compendium of Practices* (*Śikṣasamuccaya*):
 - “The close application of mindfulness to the mind is discussed in the *Ratnacūḍa Sūtra*: “Consider this, ‘While thoroughly experiencing the mind, what are those minds that become attached, or hateful, or deluded?’

⁵ Daniel C. Dennett, *Consciousness Explained* (Boston: Little, Brown and Co., 1991) p. 74.

⁶ Cristof Koch, *The Quest for Consciousness: A Neurobiological Approach* (Englewood, CO: Roberts and Company Publishers, 2004), 19.

Do they arise in the past, future, or present? Any mind that is past has vanished. Whatever is in the future has not come. Whatever arises in the present does not last.’ Kāśyapa, the mind is not found to be present inside, or outside, or both inside and outside. Kāśyapa, the mind is formless, undemonstrable, intangible, devoid of a basis, invisible, unknowable, and without any location. Kāśyapa, the mind has never even been seen, is not seen, and will never be seen by any of the buddhas. Apart from phenomena that arise from mistaken identification, how can one know the kind of process of anything that has never even been seen, is not seen, and will never be seen by any of the buddhas? Kāśyapa, the mind is like an illusion, for it apprehends many kinds of events by way of unreal conceptual projections... Kāśyapa, the mind is like the current of a stream, for it does not remain, but arises, passes away, and vanishes. Kāśyapa, the mind is like the wind, for it goes on for a long time and moves without being able to hold it. Kāśyapa, the mind is like the radiant light of a lamp, for it arises in dependence upon causes and conditions. Kāśyapa, the mind is like the sky, for it is temporarily obscured by mental afflictions and derivative mental afflictions. Kāśyapa, the mind is like lightning, for it instantly vanishes and does not linger...Kāśyapa, because the mind produces all suffering, it is like an enemy. Kāśyapa, because the mind destroys all the roots of virtue, it is like a sandcastle. Kāśyapa, because the mind mistakes suffering for happiness, it is like a fishhook. Kāśyapa, because the mind mistakes the identityless for an identity, it is like a dream. Kāśyapa, because the mind mistakes the impure for the pure, it is like a blue-bottle fly. Kāśyapa, because the mind inflicts many kinds of injuries, it is like an adversary. Kāśyapa, because the mind always looks for faults, it is like predatory goblin. Kāśyapa, because the mind always looks for its chance, it is like an enemy. Kāśyapa, because the mind is imbued with attachment and hostility, it always vacillates. Kāśyapa, because the mind robs all the roots of virtue, it is like a thief. Kāśyapa, because the mind is attracted to forms, it is like the eye of a fly. Kāśyapa, because the mind is attracted to sounds, it is like a battle-drum. Kāśyapa, the mind is attracted to smells like a pig that likes disgusting odors. Kāśyapa, the mind is attracted to tastes like a maid who eats leftovers. Kāśyapa, the mind is attracted to tactile sensations like a fly stuck in a dish of oil.

- Kāśyapa, even though one looks for the mind everywhere, it is not to be found. Whatever is unfindable is unobservable. [262] Whatever is unobservable does not arise in the past, or in the future, or in the present. Whatever does not arise in the past, or in the future, or in the present really transcends the three times. Whatever really transcends the three times is neither existent nor non-existent...”
- The *Ārya Ratnacūḍa Sūtra* also states, “By looking everywhere for the mind, one does not really see it inside or outside, nor does one really see it both inside and outside. It is not really seen among the psycho-physical aggregates, or among the elements, or the sense-bases. Since the mind is

not really seen, asking, ‘From what does the mind arise?’ one looks everywhere for the continuum of the mind, and one considers, ‘Perhaps the mind arises from the presence of an object.’ Further, one ponders, ‘Whatever object that might be, is it other than the mind? Or is that very object the mind? If the object were different from the mind, then the mind would be bifurcated. On the other hand, if that very object is the mind, then how could the mind see itself? It is implausible that the mind sees the mind. Just as the blade of a sword cannot cut itself, and a fingertip cannot touch itself, I think the mind is incapable of seeing itself...’

- Son of good family, furthermore, that which moves swiftly, ever so swiftly, without remaining still, like a monkey, like the wind, like a waterfall, and like the flame of an oil-lamp, travels far away. It is incorporeal, craves objects, experiences the six sense bases, and is conscious of one thing after another. ‘A stable mind’ [263] is said to be one that is still, single-pointed, not agitated, not scattered, single-pointedly quiescent, and free of distraction.”
- The *Ārya Akṣayamati Sūtra* states, “One resolves, ‘I shall strive to achieve this, and I shall not lose sight of this ultimate reality of the mind.’ What is the ultimate reality of the mind, and what is achievement? The mind is like an illusion. Devoting everything to that is called the ultimate reality of the mind. Renouncing all one’s possessions and totally dedicating oneself to the purification of all the buddha-fields is called ‘achievement’...”
- *Mahā-parinibbāna Sutta*: “Therefore, Ananda, be islands unto yourselves, refuges unto yourselves, seeking no external refuge; with the Dhamma as your island, the Dhamma as your refuge, seeking no other refuge.”
- Excerpt from *The Essence of Clear Meaning: A Short Commentary on the Sharp Vajra of Conscious Awareness Tantra* by Dūdjom Lingpa: “So cut through your false assumptions by inseparably devoting yourself to a sublime spiritual friend who knows how to teach the essential points of this path correctly. Even if you lack such good fortune, it is indispensable that you, without falling into indolence, properly seek out and familiarize yourself with the practical instructions of the vidyādhara of the past who have achieved siddhis by way of this path.”
- William James, *A Pluralistic Universe* (Cambridge: Harvard University Press, 1977) 48: “In what manner do we espouse and hold fast to visions? By thinking a conception *might* be true somewhere, it *may* be true even here and now; it is *fit* to be true and it *ought* to be true; it *must* be true; it *shall* be true for *me*.”
- Nirvāṇa and consciousness in the Pali canon:
 - *Kevaddha Sutta*: “Where do earth, water, fire and air find no footing? Where are long and short, small and great, fair and foul, ‘name and form’ wholly destroyed?” And the answer is: “Where consciousness is signless, boundless, all-luminous, that’s where earth, water, fire, and air find no footing, There both long and short, small and great, fair and foul—there ‘name and form’ are wholly destroyed.”
 - *Samyutta Nikāya* (43.14-43) refers to nirvāṇa as: “the far shore, the subtle, the very difficult to see, the unaging, the stable, the undisintegrating, the unmanifest, the unproliferated, the peaceful, the deathless, the sublime, the

auspicious, the secure, the wonderful, the amazing, the unailing, the unafflicted, dispassion, purity, freedom, the shelter, the asylum, the refuge.”

- *Udāna*. 8.10 calls nirvāṇa “unwavering bliss.”
- According to the *Ratnagotravibhāga*, all sentient have the embryo of the Tathāgata in three senses:
 - the Tathāgata’s dharmakāya permeates all sentient beings.
 - the Tathāgata’s “thusness” is omnipresent (*avyatibheda*).
 - the Tathāgata’s species (*gotra*, a synonym for tathagatagarbha) occurs in them.
- On the way not far from Gaya the Buddha was met by an Ājīvika named Upaka, an ascetic who, struck by the serene appearance of the Master, inquired: “Who is your teacher? Whose teaching do you profess?” The Buddha replied: “I have no teacher, one like me does not exist in all the world, for I am the Peerless Teacher, the Arahāt. I alone am Supremely Enlightened. Quenching all defilements, Nibbāna’s calm have I attained. I go to the city of Kāsi (Benares) to set in motion the Wheel of Dhamma. In a world where blindness reigns, I shall beat the Deathless Drum.” “Friend, you then claim you are a universal victor,” said Upaka. The Buddha replied: “Those who have attained the cessation of defilements, they are, indeed, victors like me. All evil have I vanquished. Hence I am a victor.” Upaka shook his head, remarking sarcastically, “It may be so, friend,” and took a bypath. (J.i.81; Vin.i.8; M.i.170-1; DhA.iv.71-2).
- Ājīvikas believed in absolute determinism, in which human actions and choices are unable to overcome the forces of fate, most were atheistic, and they followed a strict regimen of asceticism. They were also strongly against the caste system and, their leaders were sometimes depicted as ending their lives voluntarily when they felt that their bodies or minds were beginning to decline — either by fasting to death, or by drowning.
- From Dudjom Lingpa’s commentary to the *Sharp Vajra of Conscious Awareness Tantra*:
 - Identifying the Creator of All Phenomena as the Mind: “Here is the way to examine the agent, or sovereign, that creates all phenomena as the mind, which is primary among the body, speech, and mind. During the daytime, nighttime, and the intermediate period, due to the mind’s self-grasping, the body and speech appear to the mind. Over the course of a lifetime, it is the mind that experiences joy and sorrow. Finally, when the body and mind separate, the body remains as a corpse. When the speech disappears without a trace, the mind follows after karma and is the agent that wanders in saṃsāra. From one perspective, for those three reasons, among them recognize the mind as primary. From another perspective, none of those three is anything other than the mind; therefore, by ascertaining them as the mind alone, among them recognize the mind as primary. The former perspective is determined in accordance with their conventional mode of appearances, while the latter perspective is determined in accordance with their conventional mode of existence.”

- Establishing the Mind as Baseless and Rootless: “By examining in that way whether the mind that is the all-creating sovereign of the body, speech, and mind—or of all phenomena—is really existent or really nonexistent, the mind is found to have no basis or root, so it is not established as having any shape or color. The five elements and five [sensory] objects appear like objects of the mind, and your own body appears as its base. But if all these are investigated from an ultimate perspective, they are found to be like space, not truly established as either one thing or many. Ascertaining the origin, location, and destination [of the mind] as objectless openness is the spontaneous actualization of the essential nature of the path of cutting through. This is not something freshly achieved, but is simply the knowledge of the mode of being of the nature of existence.”
- William James: “Round about the accredited and orderly facts of every science there ever floats a sort of dust-cloud of exceptional observations, of occurrences minute and irregular and seldom met with, which it always proves more easy to ignore than to attend to ... Any one will renovate his science who will steadily look after the irregular phenomena. And when the science is renewed, its new formulas often have more of the voice of the exceptions in them than of what were supposed to be the rules. [“What Psychical Research Has Accomplished In *The Will to Believe and Other Essays in Popular Philosophy* (pp. 299–327). London: Longmans, Green. (Composed of segments originally published 1890–1896/1910, pp. 299–300)]
- According to a 1998 poll reported in the journal *Nature*, when queried about belief in a “personal god,” 7% of the members of the National Academy of Science responded in the affirmative.
- According to a poll published in the *Scientific American* in 1914, 40% of scientists stated that they believed in God. A poll with the same set of questions was again conducted in 1997, also reported in the *Scientific American*, and it indicated that 40% of scientists still believe in God. A more recent survey indicated that 60% of scientists claim to believe in God.
- According to a recent survey conducted by philosophy David Chalmers, 89% of today’s professional philosophers advocate materialism.
- According to a 2011 Gallup poll, more than 9 in 10 Americans say “yes” when asked the basic question “Do you believe in God?”; this is down only slightly from the 1940s, when Gallup first asked this question.
- Polls show that 46 percent of Americans self-identify as “young-earth creationists” by responding affirmatively to the following statement: “God created human beings pretty much in their present form at one time within the last 10,000 years.” (See <http://ncse.com>.) Surprisingly, the percentage of affirmative responses has hardly varied in the 30 years since Gallup began conducting the survey.
- Evolutionary biologist Stephen Jay Gould: “Evolution is purposeless, nonprogressive, and materialistic.”⁷

⁷ [Ever Since Darwin](#) (1977), p. 14.

- Edward O. Wilson⁸:
 - “Outside our heads there is freestanding reality. Only madmen and a scattering of constructivist philosophers doubt its existence. Inside our heads is a reconstitution of reality based on sensory input and the self-assembly of concepts. Input and self-assembly, rather than an independent entity in the brain...constitute the mind. The alignment of outer existence and its inner representation has been distorted by the idiosyncrasies of human evolution...That is, natural selection built the brain to survive in the world and only incidentally to understand it at a depth greater than is needed to survive. *The proper task of scientists is to diagnose and correct the misalignment.*” Pp. 60-61
 - “No objective yardstick exists on which to mark these degrees of acceptance; there is no body of external objective truth by which they can be calibrated.” P. 59
 - “Criteria of objective truth might be attainable through empirical investigation. The key lies in clarifying the still poorly understood operations composing the mind and in improving the piecemeal approach science has taken to its material properties.” P. 60
 - “If the guidelines of scientific research are refined and followed, “we will in time close in on objective truth. While this happens, ignorance-based metaphysics will back away step by step, like a vampire before the lifted cross.” P. 62
- “In 1927 Sigmund Freud declared, “The problem of a world constitution that takes no account of the mental apparatus by which we perceive it is an empty abstraction, of no practical interest.”⁹ (See: “Physics: QBism puts the scientist back into science” by N. David Mermin: <http://www.nature.com/news/physics-qbism-puts-the-scientist-back-into-science-1.14912>). But he adds, “No, our science is not an illusion. What would be an illusion would be to think that we might obtain elsewhere that which science cannot give us.” If he is right, then the objective world of nature consisting only of configurations of space-time and matter-energy, in which the very existence of the mind and consciousness is barely even acknowledged, is an empty abstraction that ironically exists nowhere but in the minds of those who have conceived it.”
- During his late twenties, William James fell victim to a sense of utterly debilitating depression that was catalyzed by his medical training at Harvard University. Specifically, this despair was brought on by the view that all our mental experiences are produced solely by brain states, and there is no causal efficacy in conscious states as such.¹⁰ In this state of acedia, he felt that “we have powers, but no motives”¹¹; in light of scientific materialism, all things seemed

⁸ Wilson, E. O. (1998) *Consilience: The Unity of Knowledge*. New York: Alfred A. Knopf.

⁹ *The Future of an Illusion*, in *Mass Psychology and Other Writings* (Penguin, 2004).

¹⁰ Margaret Knight, *William James: A Selection from his Writings on Psychology*. (Harmondsworth: Penguin Books, 1950), 30.

¹¹ William James (1897/1979) p. 71.

insignificant, and he was overcome by a sense of the utter insecurity of life. In his own account of this experience recorded in *The Varieties of Religious Experience* he writes of “a horrible fear of my own existence,” in which he felt utter vulnerability to every conceivable type of suffering and fear: “I mean that the fear was so invasive and powerful that if I had not clung to scripture-texts like ‘The eternal God is my refuge, etc., ‘Come unto me, all ye that labor and are heavy-laden,’ etc., ‘I am the resurrection and the life,’ etc., I think I should have grown really insane.”¹² After months of suffering from such despair, his recovery was inspired by the French philosopher Renouvier, whose writings persuaded him that mental causation was indeed possible; and from that time on, he took active steps to combat his affliction by psychological means.¹³ In other words, when faced with the options of adhering to the closure principle or restoring his sanity, James chose sanity.”

- William James: “Round about the accredited and orderly facts of every science there ever floats a sort of dust-cloud of exceptional observations, of occurrences minute and irregular and seldom met with, which it always proves more easy to ignore than to attend to ... Any one will renovate his science who will steadily look after the irregular phenomena. And when the science is renewed, its new formulas often have more of the voice of the exceptions in them than of what were supposed to be the rules.”¹⁴
- The Buddha’s *Discourse on Loving-kindness*: “May all beings be happy and secure; may their minds be contented. Whatever living beings there may be—feeble or strong, tall, stout, or medium, short, small, or large, seen or unseen, those dwelling far or near, those who are born and those who are yet to be born—may all beings, without exception, be of good cheer. Let no one deceive another nor despise any person anywhere. In anger or ill will let no one wish any harm to another. Just as a mother would protect her only child even at the risk of her own life, even so let one cultivate a boundless heart toward all beings. Let one’s thoughts of boundless love pervade the whole world—above, below, and across—without any obstruction, without any hatred, without any enmity. Whether one stands, walks, sits or lies down, as long as one is awake, one should maintain this mindfulness. This, they say, is the Sublime State in this life. Not falling into wrong views, virtuous and endowed with Insight, one gives up attachment to sense-desires. Verily such a person does not return to enter a womb again.”
- Physicist Werner Heisenberg: “What we observe is not nature in itself but nature exposed to our method of questioning.”¹⁵
- Albert Einstein” “On principle, it is quite wrong to try founding a theory on observable magnitudes alone. In reality the very opposite happens. It is the theory which decides what we can observe.”¹⁶

¹²William James (1985) p. 161.

¹³Cf. John J. McDermott (1977) pp. 6-8.

¹⁴ “What Psychological Research Has Accomplished” (1890–1896/1910, pp. 299–300).

¹⁵ Werner Heisenberg, *Physics and Philosophy: The Revolution in Modern Science* (New York: Harper and Row, 1962), 58.

- Anton Zeilinger:
 - “One may be tempted to assume that whenever we ask questions of nature, . . . there is reality existing independently of what can be said about it. We will now claim that such a position is void of any meaning.”¹⁷
 - “This implies that the distinction between information, that is knowledge, and reality is devoid of any meaning.”¹⁸
 - In quantum physics the notion of the total information of the system emerges as a primary concept, independent of the particular complete set of complementary experimental procedures the observer might choose, and a property becomes a secondary concept, a specific representation of the information of the system that is created spontaneously in the measurement itself.¹⁹
- From *Meditations of a Buddhist Skeptic*:
 - Physicists Bryce DeWitt (1923–2004) and Wheeler applied the principles of quantum physics to the universe as a whole, creating the field of quantum cosmology. According to their mathematical description of the cosmos, the observer–participant plays a fundamental role in the very creation and evolution of the universe. Without an observer–participant, time is said to be “frozen,” implying that the universe does not change or evolve without the intervening role of the observer. The past—including the 13.7 billion years since the Big Bang—does not exist independently of the observer, and the same is true of the present and future. The universe evolves only when an observer–participant divides it into two parts: a subjective observer and the rest of the objective universe, and the mathematical description of the rest of the objective universe depends on time as measured by the observer. In short, the evolution of the universe and everything in it, including life itself, is possible only relative to an observer–participant.
 - This implies that time itself has no independent reality. Wheeler wrote in this regard: “It is wrong to think of that past as “already existing” in all detail. The “past” is theory. The past has no existence except as it is recorded in the present. By deciding what questions our quantum-

¹⁶ Cited in Werner Heisenberg, *Physics and Beyond: Encounters and Conversations* (New York: Harper and Row, 1971), 63.

¹⁷ Anton Zeilinger, “Why the Quantum? ‘It’ from ‘Bit’? A Participatory Universe? Three Far-Reaching Challenges from John Archibald Wheeler and Their Relation to Experiment,” in *Science and Ultimate Reality: Quantum Theory, Cosmology and Complexity*, ed. John D. Barrow, Paul C. W. Davies, and Charles L. Harper, Jr. (Cambridge: Cambridge University Press, 2004), 218.

¹⁸ Ibid. 219.

¹⁹ Časlav Brukner and Anton Zeilinger, “Information and Fundamental Elements of the Structure of Quantum Theory,” in *Time, Quantum and Information*, ed. Lutz Castell and Otfried Ischebeck (Berlin: Springer-Verlag, 2003), 352.

registering equipment shall put in the present we have an undeniable choice in what we have the right to say about the past.”²⁰

- Stephen Hawking of the University of Cambridge and Thomas Hertog of the European Organization for Nuclear Research (CERN) have proposed that there is no absolutely objective history of the universe as it exists independently of all systems of measurement and conceptual modes of inquiry. While current views on the origin of the universe assume that one can take a “bottom-up” approach, working forward from the beginning, Hawking and Hertog have proposed a “top-down approach,” starting from current observations and working backwards. How you work backwards depends entirely on the questions you ask and the methods of inquiry you adopt in the present. Every possible version of a single universe exists simultaneously in a state of quantum superposition. When you choose to make a measurement, you select from this range of possibilities a subset of histories that share the specific features measured. The history of the universe as you conceive of it is derived from that subset of histories. In other words, you choose your past.²¹
- Padmasambhava (Quoted in *A Spacious Path to Freedom*): “Astonishing! The ongoing cognizance and luminosity called “the mind” exists, but does not exist even as a single thing. It arises, for it manifests as saṃsāra and nirvāṇa, and as a myriad of joys and sorrows. It is asserted, for it is asserted according to the twelve *yānas*. It is a label, for it is named in unimaginable ways. Some people call it the mind-itself. Some non-Buddhists call it “the ātman.” The *Śrāvakas* call it personal identitylessness. The *Cittamātrins* call it “the mind.” Some people call it “the middle way.” Some call it the perfection of wisdom. Some give it the name “*tathāgatagarbha*.” Some give it the name “Mahāmudrā.” Some give it the name “ordinary consciousness.” Some call it the sole *bindu*. Some give it the name “*dharmadhātu*.” Some give it the name “the *ālaya*.”
- See B. Alan Wallace, *Mind in the Balance: Meditation in Science, Buddhism, and Christianity*; David Bentley Hart, *The Experience of God*; Aldous Huxley, *The Perennial Philosophy*; and Daniel C. Matt, “Kabbalah and Contemporary Cosmology: Discovering the Resonances,” in *Science, Religion, and the Human Experience*, ed. James Proctor (New York: Oxford University Press, 2005), 129-142.
- *Meditations of a Buddhist Skeptic*:
 - According to quantum physics, information lies at the core of the universe, which requires for its existence the participation of an observer who acquires and records information. At a macrocosmic level, the universe is fundamentally an information-processing system, from which the

²⁰ John Archibald Wheeler, “Law without Law,” in *Quantum Theory and Measurement*, ed. John Archibald Wheeler and Wojciech Hubert Zurek (Princeton, NJ: Princeton University Press, 1983), 194.

²¹ Stephen W. Hawking and Thomas Hertog, “Populating the Landscape: A Top-Down Approach,” *Physical Review D* 73, no. 12 (2006): 123527; Martin Bojowald, “Unique or Not Unique?” *Nature* 442 (Aug. 31, 2006): 988–90.

appearance of matter emerges at a higher level of reality. At the microcosmic level, each conscious observer is an information-processing and replicating system. In both cases, it is *semantic* information that is crucial. Our theories concerning the nature and evolution of the universe are mental constructions based on information produced by observations. In quantum physics, the materiocentric view of the universe has been supplanted by an empiriocentric view; this shift is at least as far-reaching in its consequences as the shift from a geocentric to a heliocentric view of humanity's place in the cosmos.

- From the perspective of quantum physics, the past has no existence except as it is recorded in the present. Our decisions about what to observe, or measure, and how to interpret our data play fundamental roles in determining what kind of a universe emerges in our experience as being objectively real. This is the “strange loop” as Wheeler called it, in which the physical world gives rise to observers, who in turn conceive of the physical world in which they emerged.²² On a macroscopic scale, this implies a shift from a materiocentric to an empiriocentric view of the universe, and on a microcosmic scale, this requires a comparable shift from a neurocentric to an empiriocentric view of human existence. In the antiquated, materialistic perspective on human existence and reality as a whole, the word “meaning” has no significance, whereas in this view, meaning is fundamental. At long last, centuries after the “disenchantment of nature,” meaning is restored to the universe, in which humans and all other sentient beings play a vital, participatory role. We are home at last.
- If the information-processing model of the individual body–mind is correct, the subject-expectancy effect makes perfect sense for the first time: the power of expectation activates the information-processing system of a human being, which then triggers the appropriate, complex, electro-chemical processes in the body that bring about the expected change. Brukner and Zeilinger caution that this hypothesis “does not imply that reality is no more than a pure subjective human construct.”
- Brukner and Zeilinger caution that this hypothesis “does not imply that reality is no more than a pure subjective human construct.” From our observations we are able to build up objects with a set of properties that do not change under variations of modes of observation or description. These are “invariants” with respect to these variations. Predictions based on any such specific invariants may then be checked by anyone, and as a result we may arrive at an intersubjective agreement about the model, thus lending a sense of independent reality to the mentally constructed objects.²³

²² John Archibald Wheeler, “Law without Law,” in *Quantum Theory and Measurement*, ed. John Archibald Wheeler and Wojciech Hubert Zurek (Princeton, NJ: Princeton University Press, 1983), 194.

²³ Ibid.

- Buddha: “It is in this fathom-long body with its perceptions and its mind that I describe the world, the origin of the world, the cessation of the world, and the way leading to the cessation of the world.” *Samyutta-nikāya* 2:36
- Buddha’s description of the universe appears to be fundamentally incompatible with that of modern physics and astronomy. For example, in the *Anguttara Nikāya* 3:80 (*Numerical Discourses* pp. 313–14), the Buddha gives a description of the universe in which there is no mention that the moon is particular to planet earth and that other planets have their own moons. It assumes that each “world system,” which in terms of modern astronomy may be equivalent to a planet inhabited by sentient beings—or even a solar system or galaxy—has one sun and one moon. Each world system has Mount Sineru at its center, surrounded by the same four continents described by the Buddha in the fifth century BCE.
- Once there was a famine in the area where the Buddha and his community of monks stayed, and the monks could not obtain sufficient food. Moggallana proposed to the Buddha that he open by his magical power a road to the “northern world sector” of Uttara Kuru, so that the monks could go there for alms. The Buddha rejected this suggestion, but all survived the famine unharmed, even without such supernormal devices. (Paraj. I, 2)
- The early canonical texts speak of past buddhas, three of whom are said to have lived in northern India in the very same region where Gotama lived and taught. Their lifespans were remarkably long. Kakusandha had a lifespan of 40,000 years, Konāgamana of 30,000 years, and Kassapa of 20,000 years. Our Buddha, Gotama, who arose in our world at a time of spiritual degeneration, lived for only 80 years. For the clearest statement of this, see *Dīgha Nikāya* sutta no. 14 (*Long Discourses* pp. 199–200)
- Tsongkhapa in his *Great Exposition of the Path to Enlightenment*: “How does one determine whether something exists conventionally? We assert that something exists conventionally if: (1) It is known to a conventional consciousness, (2) No other conventional valid cognition contradicts it being so known, (3) Reason that accurately analyzes the reality of whether something inherently exists does not contradict it. We hold that anything that fails to meet these three criteria as nonexistent.”
- William James: “Introspection is difficult and fallible; and ... the difficulty is simply that of all observation of whatever kind... The only safeguard is in the final consensus of our farther knowledge about the thing in question, later views correcting earlier ones, until at last the harmony of a consistent system is reached.”²⁴
- *The Dhammapada*: “All phenomena are preceded by the mind, issue forth from the mind, and consist of the mind.”
- *Ratnameghasūtra*: “All phenomena are preceded by the mind. When the mind is comprehended, all phenomena are comprehended. By bringing the mind under control, all things are brought under control.”
- Stanford cosmologist Andrei Linde:

²⁴ *The Principles of Psychology* (New York: Dover Publications, 1890/1950) 191-192.

- “The standard assumption is that consciousness, just like space-time before the invention of general relativity, plays a secondary, subservient role, being just a function of matter and a tool for the description of the truly existing material world. But let us remember that our knowledge of the world begins not with matter but with perceptions... We are substituting the reality of our feelings by the successfully working theory of an independently existing material world. And the theory is so successful that we almost never think about its possible limitations.”²⁵
- From *Mind in the Balance*: Linde “then hypothesizes that consciousness, like space-time, might have its own characteristics independent of matter, and that neglecting this will lead to a description of the universe that is fundamentally incomplete and misleading. ‘Is it possible,’ he asks, ‘to introduce a ‘space of elements of consciousness,’ and investigate a possibility that consciousness may exist by itself, even in the absence of matter, just like gravitational waves, excitations of space, may exist in the absence of protons and electrons?’”²⁶ He hypothesizes that with the further development of science, the study of the universe and the study of consciousness will be found to be inseparably linked, and that ultimate progress in the one will be impossible without progress in the other.”
- From *Meditations of a Buddhist Skeptic*:
 - The materialists’ worldview is fundamentally rooted in physics, so before we invest ourselves too heavily in the belief that all biological and mental phenomena must be emergent properties of lifeless, unconscious matter, it would be worthwhile to assess where cutting-edge physics stands today. The field of quantum mechanics is the most fundamental branch of physics, with the deepest insights into the nature of matter and energy. In his recent book entitled *Quantum*, science writer Manjit Kumar cites a poll about the interpretation of quantum mechanics, taken among physicists at a conference in 1999. Of the ninety respondents, only four said they accepted the standard interpretation taught in every undergraduate physics course in the world, thirty favored the “many-worlds interpretation” formulated by the Princeton theoretician Hugh Everett III (1930–82), while fifty replied, “none of the above or undecided.”²⁷ The real implications of quantum physics seem to be hidden in a cloud of uncertainty.
 - “To investigate recent advances in physics and where it is headed, we may look to a conference held at Caltech at the beginning of 2010 called the Physics of the Universe Summit, which was designed to set the research

²⁵ Andrei Linde, “Inflation, Quantum Cosmology and the Anthropic Principle,” in *Science and Ultimate Reality: Quantum Theory, Cosmology and Complexity, honoring John Wheeler’s 90th birthday*, ed. John D. Barrow, Paul C. W. Davies, and Charles L. Harper, Jr. (Cambridge: Cambridge University Press, 2004), 450-451.

²⁶ Ibid. 451.

²⁷ Manjit Kumar, *Quantum: Einstein, Bohr, and the Great Debate about the Nature of Reality* (New York: W. W. Norton and Company, 2010), 358.

agenda for the rest of the twenty-first century. This was intended to provide a setting in which physicists from around the world were to avoid “groupthink” and to “be daring (even at the expense of being wrong),” according to the instructions of Maria Spiropulu, who organized this event. But the results were not what the organizers had in mind. Joseph D. Lykken of the Fermi National Accelerator Laboratory, who helped coordinate the meeting, commented, “We’re confused, and we’re probably going to be confused for a long time.” Lawrence Krauss, a cosmologist from Arizona State, added that not only are most contemporary theories wrong, but most data are also wrong—at first—subject to glaring uncertainties. The recent history of physics, he said, is full of promising discoveries that disappeared because they could not be repeated.”

- A speech by Robert Kennedy in 1968 challenging the overwhelming emphasis on the growth of the GDP: <http://www.youtube.com/watch?v=77IdKFqXbUY>
- *A Guide to the Bodhisattva's Way of Life* (V: 79-80) “In a soft and gentle voice one should speak sincere, coherent words that have clear meaning and are agreeable, pleasant to the ear, and rooted in compassion. One should always look straight at sentient beings as if drinking them in with the eyes, thinking, ‘Relying on them alone, I shall attain Buddhahood.’”
- Bertrand Russell’s autobiography occasionally reveals a complex and ambivalent relationship to religion. In particular, he relates an episode in 1901 when he witnessed the wife of his Cambridge colleague Alfred Whitehead suffer intense pain due to heart problems, causing Russell to have what can only be described as a spiritual insight. “The ground seemed to give way beneath me and I found myself in quite another region,” he writes. “Within five minutes I went through such reflections as the following: the loneliness of the human soul is unendurable; nothing can penetrate it except the highest intensity of the sort of love that religious teachers have preached; whatever does not spring from this motive is harmful, or at best useless; it follows that war is wrong, that a public school education is abominable, that the use of force is to be deprecated, and that in human relations one should penetrate to the core of loneliness in each person and speak to that.”
- Bertrand Russell: “Buddhism is a combination of both speculative and scientific philosophy. It advocates the scientific method and pursues that to a finality that may be called Rationalistic. In it are to be found answers to such questions of interest as: ‘What is mind and matter? Of them, which is of greater importance? Is the universe moving towards a goal? What is man’s position? Is there living that is noble?’ It takes up where science cannot lead because of the limitations of the latter’s instruments. Its conquests are those of the mind.”²⁸
- “Therefore, Ananda, be islands unto yourselves, refuges unto yourselves, seeking no external refuge; with the Dhamma as your island, the Dhamma as your refuge, seeking no other refuge. And how, Ananda, is a bhikkhu an island unto himself, a

²⁸ [“Buddhism and Science: Probing the Boundaries of Faith and Reason,” Verhoeven, Martin J., ‘Religion East and West’, Issue 1, June 2001, pp. 77-97”](#). Online.sfsu.edu. Retrieved 2013-03-04.

- refuge unto himself, seeking no external refuge; with the Dhamma as his island, the Dhamma as his refuge, seeking no other refuge? When he dwells contemplating the body as the body, earnestly, with introspection and mindfulness, after having overcome desire and sorrow in regard to the world; when he dwells contemplating feelings as feelings, the mind as the mind, and phenomena as phenomena, earnestly, with introspection and mindfulness, after having overcome desire and sorrow in regard to the world, then, truly, he is an island unto himself, a refuge unto himself, seeking no external refuge; having the Dhamma as his island, the Dhamma as his refuge, seeking no other refuge. Those bhikkhus of mine, Ananda, who now or after I am gone, abide as an island unto themselves, as a refuge unto themselves, seeking no other refuge; having the Dhamma as their island and refuge, seeking no other refuge: it is they who will become the highest, if they have the desire to learn.” *Mahā-parinibbāna Sutta*.
- “Just as people say “great” when things are gained by the working together of many causal relations, so do things stand with Nirvana. As it can be gained by the interaction of many causal relations, we say ‘Great.’ And why do we say ‘Great Nirvana’? As there is the Great Self, we speak of ‘Great Nirvana.’ As Nirvana is selflessness and Great Sovereignty” “[i.e. great freedom from all restrictions; unlimited autonomy; the ability to do as one wills], we speak of ‘the Great Self.’” *Mahāyāna Mahāparinirvāṇa Sūtra*.
 - The Buddha’s teaching of dependent origination can be summarized in the verse:
ye dharmā hetu prabhavā hetun,
teṣāṃ tathāgato hyavadat,
teṣāṃ ca yo nirodha,
evaṃ vādī mahāśramaṇa
 - This famous mantra is actually a summary of the teachings of the Buddha. One of his first five disciples, the arhat Assaji, was asked by Shariputra, a wandering ascetic, what his master taught. Assaji replied with this statement, “Regarding phenomena that arise from a cause, the Tathagata taught their cause and also their cessation. Those were the words of the Great Mendicant.” Upon hearing these words, Shariputra realized nirvana and became a stream-enterer. For many centuries now, this mantra has been used to stabilize the power of blessings in one’s mantra recitation, as well as to purify dharma practice, especially any misunderstandings of the view.
 - The Buddha rejected on pragmatic grounds any theory that undermined the sense of moral responsibility. On the one hand, he rejected determinism as supporting “inaction” (*akiriya*)—if one is not responsible for one’s actions, the will to act in a wholesome way, and not an unwholesome one, is stifled. On the other hand, he rejected the indeterminism of asserting that all experiences and events arise due to pure chance, without reliance on any causes or condition (*ahetu-appaccayā*).²⁹
 - Freeman Dyson: “We now take it for granted that electric and magnetic fields are abstractions not reducible to mechanical models...an electric field-strength is an abstract quantity, incommensurable with any quantities that we can measure

²⁹ *Aṅguttara Nikāya* I.173–75; cf. *Majjhima Nikāya* II.214; *Dīgha Nikāya* I.28; *Saṃyutta Nikāya* II.22

directly... The Maxwell theory became elegant and intelligible only after the attempts to represent electromagnetic fields by means of mechanical models were abandoned... To see the beauty of quantum mechanics it is necessary to move away from verbal descriptions and into the abstract world of geometry.

Mathematics is the language nature speaks. The language of mathematics makes the world of Maxwell fields and the world of quantum processes equally transparent.” (“Why is Maxwell’s Theory so hard to understand?”)

- George Ellis, co-author of *The Large Scale Structure of Space-Time* with Stephen Hawking, considered to be one of the world’s leading theorists in cosmology, has proposed a fourfold model of reality, consisting of (1) matter and forces, (2) consciousness, (3) physical and biological possibilities, and (4) mathematical reality.³⁰ All of these levels of existence are ontologically real and distinct, but are related to each other through causal links. In this model, language and symbols exist as nonmaterial effective entities, created and maintained through social interaction and teaching. Their existence is not contained in any individual brain, nor are they not equivalent to brain states, though they may become embodied in neural circuitry and other complex systems. Other complex systems include molecular biology, language and symbolic systems, individual human behavior, social and economic systems, digital computer systems, and the biosphere. In all such systems, vast quantities of stored information and hierarchically organized structures process information in a purposeful manner, particularly through implementation of goal-seeking feedback loops. This produces *emergent behavior*, in which the behavior of the whole is greater than the sum of its parts, and cannot even be described in terms of the language that applies to the parts.
- “When things are fully manifest/To the ardent meditating brahman,/His doubts all vanish, for he knows/That each thing has to have its cause.” Ud. 1:1 p. 30
- “That comes to be when there is this; that arises with the arising of this. That does not come to be when there is not this; that ceases with the cessation of this.” M. 38 p. 226
- “He who sees dependent arising sees the Dharma; he who sees the Dharma sees dependent arising.” M. 28 p. 226
- “He who sees the Dharma sees me; he who sees me sees the Dharma.” Saṃyutta Nikāya 22:87 p. 197
- Settling the Mind in Its Natural State from Lerab Lingpa’s (1856-1926) commentary on *The Heart Essence of Vimalamitra*: “Let your gaze be vacant. With your body and mind inwardly relaxed, and without allowing the continuum of your consciousness to fade from a state of lucidity and vivid clarity, sustain it naturally and radiantly. Do not contaminate it with many critical judgments; do not take a shortsighted view of meditation, and avoid great hopes and fears that your meditation will turn out one way and not another. At the beginning have many daily sessions, each of them of brief duration, and focus well in each one. Whenever you meditate, bear in mind the phrase “be without distraction and

³⁰ George F. R. Ellis, “True complexity and its associated ontology,” in *Science and Ultimate Reality: Quantum Theory, Cosmology and Complexity, honoring John Wheeler’s 90th birthday*, 607-636.

without grasping,” and put this into practice... Due to settling the mind in its natural state, there may arise sensations such as physical and mental wellbeing, a sense of lucid consciousness, the appearance of empty form, and a non-conceptual sense that nothing can harm the mind, regardless of whether or not ideation has ceased. Whatever kinds of mental imagery occur—be they gentle or violent, subtle or gross, of long or short duration, strong or weak, good or bad—observe their nature, and avoid any obsessive evaluation of them as being one thing and not another. Let the heart of your practice be consciousness in its natural state, lucid and vivid. Acting as your own guru, if you can bring the essential points to perfection, as if you were threading a needle, the afflictions of your own mind-stream will be inhibited, you will gain the autonomy of not succumbing to them, and your mind will constantly be calm and composed. This is a sound basis for the arising of all samādhis of the stages of generation and completion.”

- From Dudjom Lingpa’s commentary to the *Sharp Vajra of Conscious Awareness Tantra*:
 - By actualizing the original, pure dharmakāya in this way, the signs of truly perfect buddhahood are that, like water dissolving into water or like space dissolving into space, your quintessential body has no limits with regard to its lifespan, duration, and dimensions. Without such limitations, you awaken as the great transference youthful vase kāya in the absolute space of phenomena, free of conceptual elaboration.
 - The bodies of some people become enveloped in light and disappear into the nature of light. This is called the *mass of light*. The bodies of others are encompassed by a shroud of light that covers the sky with rainbows and clouds, and they disappear into rainbow colors. This is called the *great rainbow body*. In these two cases, when you come to the end of your life, you awaken without any separation of your body and mind. Other people, after their bodies and minds have separated, dissolve into the nature of rainbows and light without leaving behind any trace of their aggregates. This is called the *little rainbow body*. For some people, when the ground clear light arises [448], within seven days the material elements of the body become smaller and smaller, until finally only the residues of their hair and nails remain. This dissolution of the body into elementary particles is called the *little transference*. It also occurs in cutting through, for those of exceptionally superior faculties.
 - Thus, there is first the mass of light, second the great rainbow body, and [third] the little rainbow body and little transference, or the dissolution into elementary particles, which are counted as one, making three. So three kinds of liberation occur as the quintessence of the rainbow body. The former two are the ways those of middling faculties are liberated, and the latter two are the ways those of inferior faculties are liberated. The first great transference is the way those of superior faculties are liberated.
 - Although some people wish for the rainbow body with no final testament, they are liberated in the great transference as described previously. Others who aspire for the rainbow body with no physical pain achieve it as a mass of light and a great rainbow body. Yet others who wish to transfer to the

rainbow body achieve the little rainbow body and disappear into minute particles. So the first is the dharmakāya of entering the womb of natural liberation, the second two are the dharmakāya of nondual union, and the final two are the dharmakāya of transference to primordial consciousness. However you are liberated among these three ways, the unwavering dharmakāya manifests limitlessly as displays of the kāyas and facets of primordial consciousness.

- “The Four Greats”
 - Great compassion: Why couldn’t all sentient beings find happiness and the causes of happiness? May they find it! I shall help them! May the guru and the deity bless me that I may be able to do so.
 - Great loving-kindness: Why couldn’t all sentient beings be free of suffering and the causes of suffering? May they be free! I shall help them! May the guru and the deity bless me that I may be able to do so.
 - Great empathetic joy: Why couldn’t all sentient beings never be parted from sublime happiness, free of suffering? May they never be parted! I shall help them! May the guru and the deity bless me that I may be able to do so.
 - Great equanimity: Why couldn’t all sentient beings dwell in great equanimity free of attachment to that which is near and aversion to that which is far? May they dwell there! I shall help them! May the guru and the deity bless me that I may be able to do so.
- To repeat, in light of the practices of emanation and transformation in dream yoga: *The Perfection of Wisdom Sūtra in One Hundred Thousand Stanzas*: “You accomplish the first dhyāna and abide therein; you accomplish the second dhyāna and abide therein; you accomplish the third dhyāna and abide therein; you accomplish the fourth dhyāna and abide therein. You settle in meditative equipoise in the fourth dhyāna and experience numerous types of paranormal abilities. You cause even the earth to quake; you transform from one to many; you transform from many to one; you experience becoming visible and invisible; you pass through walls; you pass through fences; passing through mountains, you move about with an unimpeded body, like a bird in the sky. You move through space in the cross-legged position, like a feathered bird. You move up through the earth and down into the earth, as if moving through water. You walk upon water without sinking, as if proceeding on land. You billow forth smoke and blaze with light, like a bonfire.”
- Śāntideva (*A Guide to the Bodhisattva Way of Life*)
 - “Like the conflagration at the time of the destruction of the universe, it consumes great vices in an instant.”
 - “In brief, bodhicitta is known to be of two kinds: aspiring bodhicitta, and engaged bodhicitta.
 - Just as one perceives the difference between a person who yearns to travel and a traveler, so do the learned recognize the corresponding difference between those two.
 - Although the result of aspiring bodhicitta is great within saṃsāra, it is still not like the continual state of merit of engaged bodhicitta.

- From the time that one adopts bodhicitta with an irreversible attitude for the sake of liberating limitless sentient beings, from that moment on, an uninterrupted stream of merit, equal to the sky, constantly arises even when one is asleep or distracted.”
- Śāntideva (*A Guide to the Bodhisattva Way of Life*)
 - “Even though you practice recitations, austerities and so on for a long time, because the mind is distracted elsewhere, such action is said by the Sage to be meaningless...”
 - By examining this mind alone all those will be guarded. By subduing this mind alone all those will be subdued. Apart from the discipline of guarding the mind, what’s the use of many practices?
- The *Pitāputrasamāgamasūtra*: “With respect to all of the dharmas of the Buddha, I see no other way: If you realize śamatha and great primordial consciousness, you will certainly achieve spontaneous actualization.”
- *Ānandagarbhavikrāntinirdeśasūtra*: “Whoever lacks the mind of meditative equipoise lacks [realization of] pure primordial consciousness. The contaminations will not be eliminated, so by all means accomplish it!”
- *Dharmasaṃgītisūtra*: “The mind settled in meditative equipoise sees reality as it is. Due to seeing reality as it is, the mind of a bodhisattva dwells in great compassion for sentient beings.”
- Benefits of loving-kindness
 - One sleeps in comfort
 - One wakes in comfort
 - One dreams no evil dreams
 - One is dear to human beings
 - One is dear to non-human beings
 - Deities guard one
 - Fire, poison, and weapons do not affect one
 - One’s mind is easily concentrated
 - The expression on one’s face is serene
 - One dies unconfused
 - If one achieves nothing higher, one reappears in the Brahma world as one who wakes up from sleep.
- Blaise Pascal (1623-1662): “When I have occasionally set myself to consider the different distractions of men, the pains and perils to which they expose themselves at court or in war, whence arise so many quarrels, passions, bold and often bad ventures, etc., I have discovered that all the unhappiness of men arises from one single fact, that they cannot stay quietly in their own chamber.”
- Buddha Shakyamuni (*The Sutra of the Meeting of Father and Son*): “O Shariputra! The merit accruing to one who composes himself in the samadhi of meditation on suchness for the moment it takes to snap one’s fingers is greater than accrues to one who studies (Dharma) for an entire aeon. That being so, O Shariputra, this samadhi on meditation on suchness should emphatically be taught to others.”
- Three types of laziness
 - Laziness of not wanting to do anything

- Laziness of feeling ourselves unworthy
 - Laziness of being busy with mundane activities
- Four antidotes to laziness
 - Suppleness
 - Trust
 - Aspiration
 - Enthusiasm
- Anguttara Nikaya (II-68) on happiness:
 - “There are these four kinds of happiness to be won by a householder who enjoys sense pleasures from time to time and when occasion offers. What four? The happiness of ownership, the happiness of wealth, the happiness of freedom from debt and the happiness of blamelessness.
 - “And what is the happiness of ownership? Concerning this, a householder has wealth acquired by energetic striving, won by strength of arm and sweat of brow, justly and lawfully won. When he thinks of this he feels happiness and satisfaction.”
 - “And what is the happiness of wealth? Concerning this, a householder has wealth justly and lawfully won, and with it he does many good deeds. When he thinks of this he feels happiness and satisfaction.”
 - “And what is the happiness of freedom from debt? Concerning this, a householder owes no debt large or small to anyone, and when he thinks of this he feels happiness and satisfaction.”
 - “And what is the happiness of blamelessness? Concerning this the noble disciple is blessed with blameless action of body, speech and mind and when he thinks of this he feels happiness and satisfaction.”
- The Buddha (*Araṇavibhaṅga Sutta*) encouraged his disciples to find out what really constitutes true happiness and, based on this understanding, to pursue it.
- *Kandaraka Sutta*, there are three levels of happiness:
 - Happiness arising from blamelessness and contentment
 - Happiness gained through deep concentration
 - Supreme happiness of complete freedom through realization
- Meister Eckhart
 - “If the only prayer you said was thank you, that would be enough.”
 - “The eye through which I see God is the same eye through which God sees me; my eye and God’s eye are one eye, one seeing, one knowing, one love.”
 - “And suddenly you know: It’s time to start something new and trust the magic of beginnings.”
 - “Spirituality is not to be learned by flight from the world, or by running away from things, or by turning solitary and going apart from the world. Rather, we must learn an inner solitude wherever or with whomsoever we may be. We must learn to penetrate things and find God there.”
 - “Truly, it is in the darkness that one finds the light, so when we are in sorrow, then this light is nearest of all to us.”
 - “Nothing in all creation is so like God as stillness.”

- “I am as sure as I live that nothing is so near to me as God. God is nearer to me than I am to myself; my existence depends on the nearness and the presence of God.”
- “Wisdom consists in doing the next thing you have to do, doing it with your whole heart, and finding delight in doing it.”
- *A Guide to the Bodhisattva Way of Life*, “Conscientiousness” Ch IV:
 - *Abhidharma-samuccaya*: “What is conscientiousness? Establishing its basis in non-attachment, non-hatred, and non-delusion coupled with enthusiasm, it considers whatever is virtuous and protects the mind against things that cannot satisfy. Its function is to make complete and to realize all mundane and supramundane virtues.”
- 28. Enemies such as craving and hatred are without arms, legs, and so on. They are neither courageous nor wise. How is it that they have enslaved me?
- 29. Stationed in my mind, they ruin me, while remaining well established themselves; and yet I do not get angry at my forbearance with this shameful and improper situation.
- 30. If all gods and humans were my enemies, even they would be unable to bring me to the fire of the Avīci hell.
- 32. All other enemies cannot remain as long as my enemies, the mental afflictions, which long endure, without beginning or end.
- 38. Then, needless to say, not even a hundred causes of suffering will make me succumb to weariness and despair as I now apply myself to conquering my natural enemies, which are the perpetual causes of all miseries.
- 43. “Here I am obsessed, and with vengeance I shall wage battle. That kind of mental affliction is the exception, for it destroys mental afflictions.”
- 45. Even when ordinary enemies have been expelled from one country, they settle in another and take control. Then, upon recovering their strength, they return; but the way of this enemy, the mental afflictions, is not like that.
- 46. Miserable afflictions are conquerable with the eye of wisdom. Once they are dispelled from my mind, where will they go? Where would they rest and then return to torment me? Feeble in spirit, I am lacking in perseverance.
- 47. Mental afflictions do not exist in sense objects, nor in the sense faculties, nor in the space between, nor anywhere else. Then where do they exist and agitate the whole world? This is an illusion only. Liberate your fearing heart and cultivate perseverance for the sake of wisdom. Why would you torture yourself in hells for no reason?
- 48. After pondering in this way, I shall make an effort to apply the teachings as they have been explained. How can someone who could be cured by medicine be restored to health if he strays from the physician’s advice?
- Three types of ignorance
 - Ignorance regarding the one identity (བདག་པོ་ཉིད་ཀྱི་མཐོང་པོ་མ་ཤིག་པ་)
 - Connate ignorance (ལྷན་ཅིག་སྐྱེས་པའི་མ་ཤིག་པ་)

- Speculative ignorance (གཞན་ཏུ་བརྟགས་པའི་མ་རིག་པ་)
- Michael S. A. Graziano (Professor of psychology and neuroscience at Princeton), [“Are We Really Conscious?”](#)
 - “We have an *awareness* of information we process. What is this mysterious aspect of ourselves? Many theories have been proposed, but none has passed scientific muster. I believe a major change in our perspective on consciousness may be necessary, a shift from a credulous and egocentric viewpoint to a skeptical and slightly disconcerting one: namely, that we don’t actually have inner feelings in the way most of us think we do. How does the brain go beyond processing information to become subjectively aware of information? The answer is: It doesn’t. The brain has arrived at a conclusion that is not correct. When we introspect and seem to find that ghostly thing — awareness, consciousness, the way green looks or pain feels — our cognitive machinery is accessing internal models and those models are providing information that is wrong. The machinery is computing an elaborate story about a magical-seeming property. And there is no way for the brain to determine through introspection that the story is wrong, because introspection always accesses the same incorrect information... the argument here is that there is no subjective impression; there is only information in a data-processing device.”
 - “Attention: a real, mechanistic phenomenon that can be programmed into a computer chip. Awareness: a cartoonish reconstruction of attention that is as physically inaccurate as the brain’s internal model of color... Almost all other theories of consciousness are rooted in our intuitions about awareness. Like the intuition that white light is pure, our intuitions about awareness come from information computed deep in the brain. But the brain computes models that are caricatures of real things. And as with color, so with consciousness: It’s best to be skeptical of intuition.
- The “High Indifference” of Franklin Merrell-Wolff: There was a distinction between being bound to embodied consciousness and not being so bound, with a subtle attachment to being not bound. Counter-acting this subtle attachment, however, was Wolff’s prior acceptance of the bodhisattva vow, a commitment to the value of relative manifestation and embodiment, motivated by compassion for all sentient beings. With this motivation, Wolff resisted his strong inclination to retreat into the transcendent bliss of nirvanic consciousness. Instead, he sacrificed his strictly personal enjoyment of those transcendent values in order to maintain a relative embodiment and help liberate all sentient beings. This act of compassion and ultimate renunciation led to an unexpected second fundamental Recognition that resolved the residual tensions between the universe and nirvana. This Realization represented a complete Equilibrium, not only a relative equilibrium between objects, but also an ultimate Equilibrium between relative and absolute levels of consciousness. Because this realization does not give any more valuation to nirvana than to the universe, and recognizes no ultimate difference between the two, Wolff called it the High Indifference. It is the complete resolution of tension between all opposites, the complete transcendence of all distinctions, including

the distinction between the transcendent and the relative. At this profoundly deep level of Recognition, all self-identity, both in the highest sense of the transcendental Self and the lower sense of the ego self, was no more. In Wolff's words, "I was no more and God was no more, but only the ETERNAL which sustains all Gods and Selves." (Thomas J. McFarlane)

- *A Guide to the Bodhisattva Way of Life*, Ch. III:
 - 7. May I be the medicine and the physician for the sick. May I be their nurse until their illness never recurs.
 - 8. With showers of food and drink may I overcome the afflictions of hunger and thirst. May I become food and drink during times of famine.
 - 9. May I be an inexhaustible treasury for the destitute. With various forms of assistance may I remain in their presence.
 - 17. May I be a protector for those who are without protectors, a guide for travelers, and a boat, a bridge, and a ship for those who wish to cross over.
 - 18. May I be a lamp for those who seek light, a bed for those who seek rest, and may I be a servant for all beings who desire a servant.
 - 20-21. Just as earth and other elements are useful in various ways to innumerable sentient beings dwelling throughout infinite space, so may I be in various ways a source of life for the sentient beings present throughout space until they are all liberated.
- *A Guide to the Bodhisattva Way of Life*, Ch. III:
 - 22-23. Just as the sugatas of old adopted bodhicitta, and just as they properly conformed to the practice of the Bodhisattvas, so I myself shall generate bodhicitta for the sake of the world; and so I myself shall properly engage in those practices.
 - 24. Upon gladly adopting bodhicitta in this way, an intelligent person should thus nurture the Spirit in order to fulfill his wish.
 - 25. Now my life is fruitful. Human existence is well obtained. Today I have been born into the family of the buddhas. Now I am a child of the buddhas.
 - 26. Thus, whatever I do now should accord with [the bodhisattvas'] family, and it should not be like a stain on this pure family.
 - 27. Just as a blind man might find a jewel amongst heaps of rubbish, so this bodhicitta has somehow arisen in me.
 - 28. It is the elixir of life produced to vanquish death in the world. It is an inexhaustible treasure eliminating the poverty of the world.
 - 29. It is the supreme medicine that alleviates the illness of the world. It is the tree of rest for beings exhausted from wandering on the pathways of mundane existence.
 - 30. It is the universal bridge for all travelers on their crossing over miserable states of existence. It is the rising moon of the mind that soothes the mental afflictions of the world.
 - 31. It is the great sun dispelling the darkness of the world's ignorance. It is the fresh butter formed from churning the milk of Dharma.

- 32. For the caravan of beings traveling on the path of mundane existence and starving for the meal of happiness, it is the feast of happiness that satisfies all sentient beings who have come as guests.
- 33. Today I invite the world to Sugatahood and temporal happiness. May the gods, *asuras*, and others rejoice in the presence of all the Protectors!
- Karma Chagme, *A Spacious Path to Freedom*:
 - There are incalculable benefits in engaging in practice. The optimal case is to become a Buddha in one lifetime and with one body, or else to become a Buddha as a Dharmakāya at death, when the outer breath ceases. The middling case is to recall the meaning of the unified stages of generation and completion of one's present meditation at the time when one's body and mind separate, resulting in becoming a Buddha in the intermediate state as a Sambhogakāya, indivisible from one's chosen deity. There are said to be twenty-one ways to achieve the result of Buddhahood, corresponding to the specific faculties of individuals. The very least of them is called "resting in a Nirmāṇakāya pure realm." It is said that by making prayers to take birth in a Buddha realm, you will be reborn there.
 - In this regard Machik Lapdrön says: "Apart from Sukhāvatī, one cannot take birth in the supreme pure realms without having reached the eighth [Bodhisattva] level. For the middling pure realms, one must have achieved at least the path of meditation on which the subtle afflictive obscurations have been eliminated; without that, one will not take birth there. For the five pristine abodes such as Akaniṣṭha and Aṭakāvatī, one must have achieved the path of seeing, on which the truth of ultimate reality is seen after having severed the root of self-grasping; without that, one will not take birth there. However, without having reached the path of seeing, if one is without even the slightest infraction of one's *samayas* and vows and applies oneself to prayer and to virtue alone, it is just possible to take birth in a small pure realm such as Tuṣita, but it is difficult. Therefore, it is utterly hopeless for an individual with mental afflictions to take birth in a Buddha realm. However, the Protector Amitābha himself has promised that one may take birth in his pure realm due to the power of his prayers. Thus, you should strive with your body, speech, and mind in prayer to be born in the realm of Sukhāvatī. Ridding yourself of doubt, uncertainty, and spiritual sloth, with great and swift certainty and enthusiasm bring to mind the splendor and benefits of the realm of Sukhāvatī, and pray. Sukhāvatī is superior to the realms of other Buddhas in these ways: It is greater because it is possible for ordinary individuals with mental afflictions to be born there. And if you take birth there, all you that you wish for is accomplished as soon as you think of it, you are not tainted by

even subtle mental afflictions, and you may go from there to the realms of other Buddhas. Thus, it is superior. Sukhāvātī is endowed with inconceivable benefits, including the swifter attainment of Buddhahood there than in other pure realms. There is no other pure realm that is within closer reach than Sukhāvātī, so it is extremely important to strive in prayer to be reborn there.”

- Thus, the *Splendor of Sukhāvātī Sūtra*, the *Great Mound of Jewels Sūtra*, the *Splendor of Amitābha Sūtra*, the *White Lotus Sūtra*, the *Spell of the Sound of the Drum*, and the teachings of Orgyen Rinpoche are all in agreement that unless you have committed any of the five acts of immediate retribution or abandoned the Dharma, if you single-pointedly pray to be reborn in that pure realm, you can take birth in the realm of Sukhāvātī. Moreover, it is said that you will be born there after earnestly praying ten times. That is due to the power of prayer of Buddha Amitābha, so it is crucial to make prayers for that pure realm.
- Therefore, whatever virtue you perform, do it with the excellent intention of bodhicitta, thinking, “I shall perform this virtue for the sake of all sentient beings.” During the main practice, bear in mind the difficulty of achieving a human life of leisure and endowment, death and impermanence, causal actions and their consequences, and the problems of saṃsāra. During each session focus on taking refuge, bodhicitta, Vajrasattva, the *maṇḍala* offering, and guruyoga. Then imagine yourself as Avalokiteśvara, and visualize on the crown of your head the form of Amitābha, as the embodiment of all spiritual mentors. Imagine inviting all spiritual mentors and their dissolving into Amitābha, who becomes the embodiment of them all. Imagine inviting all *yidams*, who dissolve into yourself, so that you become the embodiment of all of them. At your heart imagine the syllable Hṛī surrounded clockwise by the six-syllables upon a moon-disc, which is the synthesis of all secret *mantras*, knowledge *mantras*, and spell *mantras*. Those are profound practical instructions for actualizing all deities by means of one deity.
- Imagine rays of light emanating from your heart, transforming the physical universe into the pure realm of Sukhāvātī, and transforming all sentient beings into the form of Avalokiteśvara. That is transforming appearances into divine embodiments. Imagine their chanting leader rising up and them all chanting the six syllables. That is transforming sounds into divine speech, so it is a teaching that causes many hundreds of millions [of *mantras* to be recited] in an instant. Whatever good and bad thoughts arise in the mind, observe their nature without rejecting or affirming them, and leave your mind without modification. That is transforming thoughts into the divine mind, and it is the practice of Mahāmudrā and Basic Cutting Through of Dzogchen. Without supplementing

those three with anything, they comprise a superb practice of the union of the stages of generation and completion. At the very least, you should never be parted from those three.

- What good is it to be born there? There is no suffering in taking birth in that realm, for your body is instantly brought forth in miraculous birth in the midst of a flower. Everyone without exception who is born there has a golden-colored body adorned with the signs and symbols of enlightenment and possesses incalculable extrasensory perception and paranormal abilities. In that realm you never even hear of the sufferings of illness, harmful spirits, enemies, famine and so on. Whoever is born there is without the five poisons of attachment, hatred, delusion, pride, and jealousy. The duration of one eon in our world is the equivalent of one day in the realm of Sukhāvatī, and even in a quadrillion of its years there is no death, no illness, and no aging. Whatever you desire in terms of food, clothing, enjoyments, and things to offer to the Buddha come spontaneously with the mere thought of them. There is no need to acquire them with effort, to preserve them, or make a living. Without needing to experience the suffering of the ripening of all your present sins and obscurations, they are purified by encountering Amitābha, making prostrations, circumambulations, and offerings, and listening to the Dharma. Due to your unimpeded supernormal powers and extrasensory perception, you may go to all the Buddha realms, meet the buddhas, listen to Dharma, and with these connections serve as a guide to sentient beings. In the evening there is nothing to obstruct your supernormal power to return to Sukhāvatī.
- In such a state of bountiful joy and happiness, you may listen to the Dharma from the Buddha, make offerings, and by exercising the power of *samādhi* over countless eons, you accomplish the ten levels and five paths of the *Sūtra* tradition, the thirteen Vajradhara levels of the *mantra* tradition, and the sixteen levels of supreme primordial wisdom of the Dzogchen tradition. It is said that finally, as soon as you pass away from that life, you become a buddha, with your body, speech, and mind indivisible from all the buddhas. Therefore, having received this teaching, even if you do not remember the words, if you bear in mind the primary meanings and practice with enthusiasm, there is no doubt that you will be reborn in Sukhāvatī. The *sūtras*, *tantras*, and the teachings of Orgyen bear testimony to this.