Introduction

ORIENTING SPACE AND SELF

Walk through the outer door at Zurmang Shedrup Monastery[1] in Sikkim, India, and the first images you see on either side of the entranceway are two large murals depicting basic concepts of Buddhist cosmology. On the left, an existential diagram called the "wheel of existence"[2] shows the types of sentient beings that dwell in the world and the causes of their sufferings, the removal of which is the goal of Buddhism (fig. I.1). A demon of impermanence encircles the wheel, symbolizing the inescapability of death, and divided sections inside summarize processes of arising, living, and dying. On the right, an apparently simpler image shows a geographic map of the physical cosmos (fig. I.2). Oceans and continents represent the homes of animals and humans, while deities dwell on the peaks and terraces of an enormous mountain in the center of the world. The discoid surface of the earth is covered in jewels, and stacks of heavens spread outward and upward to the very top of the wall. Such images are hardly uncommon at the entrances of Tibetan-style Buddhist monasteries, with the wheel of existence and the geographic cosmos, or Cakravāla, frequently juxtaposed as they are here. Similar examples can be seen at major and minor sites across the Himalayas, including the reconstructed Samye[3] monastery in Tibet, Punakha Dzong[4] in Bhutan, and Spituk Gompa[5] in Ladakh.

Such prevalence of cosmological imagery at the entrances to monasteries is striking. Because of their prominent place in architecture and widespread use across the Himalayas, these paintings clearly hold importance in Buddhism. At the same time, no uniform tradition guides the appearance of these two images in this context. In other monasteries, one subject may appear without the other, or both may serve larger, more complex iconographic programs.

I.1. Wheel of existence. 20th–21st century. Zurmang Shedrup monastery, Sikkim, India

The details of how these cosmological subjects are portrayed also vary greatly. Compare the Cakravāla from Zurmang Shedrup (see fig. I.2) to a variation from Ganden Phelgay monastery[6] in Bodh Gayā, India (fig. I.3). This latter image, glazed onto a black background, compresses the sweeping disc of the world to a dense cluster of items below the enormous pillar of the central mountain. The rings of mountains and continents that supposedly surround the central peak seem almost crushed beneath the mass of the towering summit, which resembles a rectangular prism more than an inhabited geographic space.

One might assume that these two Cakravāla paintings differ mainly in artistic style, but this is only a small part of the story. In fact, they serve different purposes within the space of the monastery, despite their similar subject. On the one hand, the painting from Ganden Phelgay portrays the cosmos as it appears in a particular offering ritual (the subject of chap. 3), and its details purely express that singular purpose. The mural from Zurmang, on the other hand, further illustrates a combination of ideas about the dwelling places of beings, the enlightenment of the historical Buddha, and even the way in which visitors should experience the architectural space in which the painting is located (topics addressed in chaps. 1, 2, and 4).[7]

I.2. Cakravāla cosmos. 20th–21st century. Zurmang Shedrup monastery, Sikkim, India

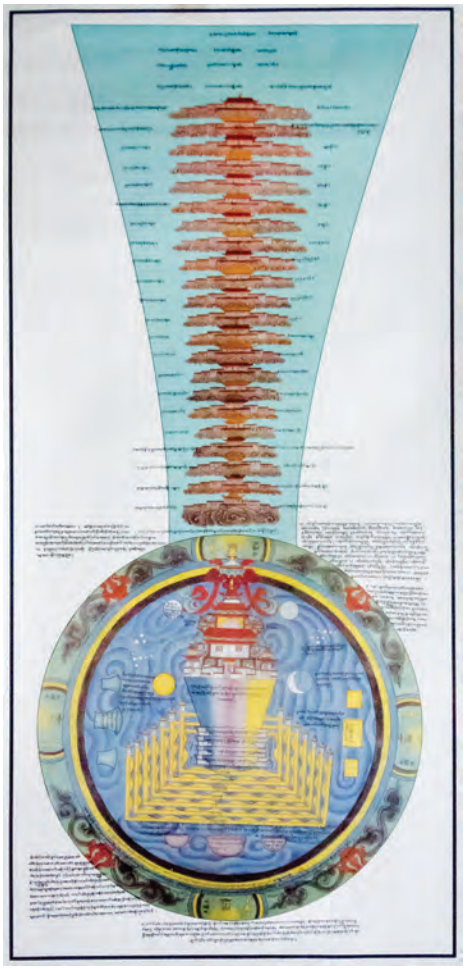
Once one begins looking for such heterogeneous depictions of the cosmos, examples abound. While the Zurmang mural does have some didactic function, it does not compare to a poster available for sale at Hemis monastery and displayed at Mathok monastery, both in Ladakh (fig. I.4). This image forsakes the abundant treasures and deities in the Zurmang mural and instead labels the many geographic realms meticulously, especially emphasizing the vertical stack of heavens above the circular world. These realms correspond to distinct states of being and stages of meditation, giving the abstruse details of distant geography a practical relevance for personal development. Inside the shrine at Drug Sang-ngag monastery[8] in Darjeeling, a small sculpture represents the cosmos as an offering on an altar (fig. I.5). Invoking the same ritual as does the monolithic black mural at Ganden Phelgay, this artwork places small icons of cosmic objects (notice the yellow sun and crescent moon) atop seven white pillars on a circular metal platter. As a piece of ritual ephemera, this object emphasizes the re-creation of the cosmos through specific acts of liturgy, repeated over and over again during a lifetime of practice. At the other extreme of size and permanence, the vast architecture of Samye monastery in Tibet reproduces the geographic cosmos as an inhabitable space, with buildings representing continents and the central shrine

I.3. Cakravāla offering. 20th century. Protector chapel, Ganden Phelgay monastery, Bodh Gayā, India

standing for the axial mountain where deities dwell (fig. I.6). Here, the cosmic geography becomes the environment of lived experience, potentially relevant to anything that happens within the monastery walls.

The diversity of these examples reveals a remarkable interrelationship between Buddhist cosmology and numerous other aspects of the religion. Although scholars and practitioners traditionally trace notions of cosmology to a very limited set of textual sources, depictions of the world vary greatly in form and function based on the contexts in which they appear, revealing a deeper relevance of cosmology in Buddhism more broadly. Images of the universe participate in a vast network of ideas about soteriology, ritual, artistic form, and even knowledge itself.

This network of cosmological ideas is the subject of this book. The proposition that single images of the Buddhist world can function in vastly different ways and weave together complex ideologies is a new approach to cosmology in Buddhist studies. The



I.4. (*Top left*) Cakravāla poster available for purchase from Hemis monastery, Ladakh, on display at Mathok monastery, Ladakh
I.5. (*Top right*) Cakravāla *torma* (offering). 20th–21st century. Drug Sang-ngag monastery, Darjeeling, India
I.6. (*Bottom*) Samye monastery

examples in this volume show how individual portrayals of the cosmos express themes attuned to diverse textual, ritual, and artistic contexts. Although some models are more widely known, no portrayal of the world appears in the abstract or as a universal. Each instance, taken on its own terms and in its own context, serves a particular role in greater networks of ideas. Because of such structural connections to various ideologies, the cosmic model thus becomes a framework for the expression of numerous aspects of religion. Systems of knowledge and meaning are built into the spaces and places of the geographic world,[9] a way of using the cosmos as a medium for thought and practice. The flexibility of such cosmological thinking leads to its widespread use for disparate purposes in immensely different visual and textual portrayals.

The following chapters explore individual depictions of the cosmos in a diverse range of contexts, including scientific and poetic literature, the deity maṇḍala of tantric meditation, the material ephemera of offering rituals, architecture, furniture, and paintings. Along the way, we will begin to recognize fundamentally different modes of viewing and utilizing the world. As a space (an organized continuum), the cosmos can describe systems of hierarchy and ritual processes of transformation. As a set of places (specific locales related within a whole), the cosmos reflects the diversity of sentient beings. The cosmos can even appear as an object unto itself (a singular piece of a larger system), such as in the ritual presentation of the cosmos as an offering. While these modes unquestionably overlap, they also help us parse the complex ways of thinking about the cosmos in disparate functional contexts.

These diverse ways of thinking about the nature of the universe reflect an innate human impulse to understand our world and our place within it. This kind of cosmology (broadly defined) underlies many of the world's religions but holds special importance in Buddhism, where cosmology frames everything from the definition of life to the path toward enlightenment and the architecture of the temple. The next section introduces this basic cosmological impulse in human thought with a few examples from recent science before transitioning to the main subject of religious traditions. These cases illustrate the cross-cultural importance of cosmology, as well as some of the impact this book might have for questions of cosmology in Buddhist studies. Let us start with a simple example that many of us would have no trouble identifying in our own lives . . .

Place and Space in Human Culture

Imagine yourself at the very moment of waking in the morning. Many of us probably have an innate sense of exactly where we are at this time, even at the edge of consciousness. We can confirm this by remembering the shock we sometimes feel when, as we drift into wakefulness, we mistake our location for one we have visited in a dream. We may have awakened thinking that we were in our childhood bedrooms or some recently visited hotel, only to discover we were actually in our homes (or vice versa).

When our newly wakeful consciousness fails to confirm our dreamlike sense of location, we are thrown into confusion until we reestablish our sense of place.

This innate sense of our place in the world seems to have many levels: we identify not only in which bed we are lying, but in which room, in which building, on which street, in which city and country, and on which continent. In our normal, day-to-day lives, this awareness of place sits at the edges of our consciousness, coming to the fore when we need to perform tasks like navigation. But such a sense of personal place has an infinite number of other impacts on our daily lives. Think of how we determine our national identity or which news sources we choose to follow. Such decisions are, in differing ways, intimately connected to our sense of place in the physical world.

Because this sense of place is so internalized, it is easy not to realize that other people may not share our same understanding. Linguistic research has shown that a certain tribe in Australia expresses position almost exclusively in terms of absolute, cardinal directions ("the building to the west" rather than "the building on the left"). This feat is not merely a quirk of language but a different kind of cognition, requiring speakers to retain absolute certainty of their locations and orientations at all times, rather than merely relying on relative position.[10] In another example, members of an indigenous culture in Mexico express their spatial relationships largely in terms of the mountainous local topography ("uphill" or "downhill" rather than "north" or "south") and have difficulty recognizing relative left-to-right reflections of images.[11] Such studies reveal some of the disparate ways in which humans can conceive of navigation through the world. Regardless of such variation, however, it does seem that some sense of place remains fundamental to human cognition, a necessity of recognizing one's orientation within a larger context.

This larger context is the other half of the equation, the overall space in terms of which one's place can be understood. It is at this level, beyond the individual, that even grander questions can be asked about the nature of the world itself: What is the shape of the universe? What are its rules and organization? How do time and causality function? By understanding more about the world, we also understand more about our possibilities within it. Such questions are some of the most enduring and compelling in human history and are, at heart, questions of cosmology.

The term "cosmology" generally refers to the study of the ordering principles of the universe, whether in regard to space, time, matter, energy, karma, cyclic rebirth, or otherwise. Cosmological accounts, both religious and scientific, often involve explanations of the creation and eventual destruction of the universe, the structure and arrangement of celestial bodies, and the origins and types of living beings. Many of the great religious texts of the world give cosmological concerns their foremost places as the preambles or foundations of all that follows. From the biblical book of Genesis to the Mayan Popul Vuh and the Scandinavian Poetic Edda, a description of the creation or logic of the world precedes all the action that follows. In one sense, this could be considered merely setting the stage, until one considers why setting the stage is so

important. It is only by understanding the whole universe of the narrative that one can comprehend the significance of the characters and events within it. Our understanding of the world in which we live is part of our definition of ourselves.

This powerful relationship is easy to recognize when changing one's conception of the world results in a fundamental redefinition of the self, as well. Children learn in school about Galileo, whose discoveries in the heavens influenced society, religion, and his own personal freedom. Indeed, the conflict between his scientific findings and the interpretation of scripture eventually led to his sentence of house arrest. In a larger sense, however, his arguments for heliocentrism over geocentrism were not just about scriptural authority but about a more significant change in the structure of the world that decentralized, and thus trivialized, human beings on this earth.

A similar shift in understanding happened in 1990, when the *Voyager* space probe photographed the earth from billions of miles away, at a far greater distance than any photograph taken up to that time. This photograph, often referred to as the "Pale Blue Dot," showed our entire planet as one bluish pixel in a vast field of empty space — a tiny object in a much larger scope than people had ever experienced. While this image did not actually overturn the concurrent model of the solar system (indeed, it was possible only because of precise calculations using that model), it represented a similar emotional recalibration of our sense of place within the cosmos. While we humans tend to focus on the immediate concerns of our own lives, this image illustrates the triviality of our ordinary cares in the cosmic arena, engendering a sense of community that could lead to pacifism and environmentalism. Carl Sagan has stated that this emotional shift in perspective was one intention behind taking the photograph.[12] In this case, too, changing our vision of the world around us, our stage, also shifts our place within that world — potentially affecting our everyday concepts and behaviors.

While the preceding examples show the humanistic importance of cosmology in terms of Western science, the same holds true for religious traditions and non-Western cultures. Widely varying models of the universe explain, either literally or metaphorically, the nature of the world and humanity's place in it. A story of the creation of the world from the separation of earth and sky, for example, suggests a dualistic system into which other conceptual categories can align, reifying oppositions between female and male, dark and light, and so on. Other cultures characterize the creation of the world in terms of its gestation in a cosmic egg or its construction from the dismembered body of a humanoid colossus, implying alternative interpretive structures. Some notable works of religious literature build their entire message around a particular cosmological model, such as Dante Alighieri's *Divine Comedy*, which recounts a single individual's path to realization as a journey through hierarchical levels of hell, purgatory, and heaven.

In fact, a particular characterization of the universe can be among the most salient features of a religious tradition, as influential on ideology and practice as any other

factor. The *Ṛg Veda*'s story of the creation of the world through the sacrifice of an enormous cosmic man establishes not only the geographic features of the world but also the absolute division of humans into four social classes (based on where they originate in the cosmic man's body) and the fundamental role of sacrificial ritual.[13] In other words, the logic of the physical cosmos determines both the types of beings that live within it and the religious activities they are required to perform. Seeing examples such as this, it is natural to ask: What other constructions of the world have been accepted by other traditions? In what ways do space and place transcend simple geography to serve ideological, ritual, and soteriological functions? Can even small changes of cosmology in a single tradition express similar ranges and depths of meaning?

This book starts to answer such questions for the major cosmological traditions of the Buddhist Himalayas. The basic tenets of Buddhist cosmology arose in South Asia more than two thousand years ago and spread across the continent with the transmission of other Buddhist traditions. From Afghanistan to Japan, from Indonesia to Mongolia, this cosmology has informed numerous aspects of culture, including ritual, architecture, and scientific debate. Going beyond mere description of the world, geographic cosmology has been used to articulate ideas of where people belong in the world, how nature affects our lives, what constitutes ethical behavior, and how one should conceive of the goals of Buddhist practice.

In some accounts, the Buddhist cosmos can even become the framework upon which one explains the entire religion. The fourteenth-century Thai text *Three Worlds according to King Ruang*[14] uses cosmology in this way, communicating doctrine by laying out the structure and nature of the world.[15] Of course, not all treatments of Buddhist cosmology are so ambitious, and other sources reject cosmological thinking in favor of other modes, such as ethical analysis or ritual performance. In most cases, the language of the cosmos expresses not the entirety of the religion but rather specific concepts in particular circumstances. While cosmology may not be the single most important part of Buddhism (as if there were such a thing), it provides a ubiquitous foundation for numerous other aspects of culture.

The identification of this cosmological foundation for diverse forms of Buddhist religiosity provides the central thesis of this book. In short, Buddhist models of the world supply adaptable conceptual structures whereby individual depictions of the cosmos, whether in literature, ritual, or art, can express diverse content and perform various religious functions. This idea is easy to understand in terms of the functions of modern maps. A topographical map and a weather radar map communicate radically different information, even when they depict the same locale. The key is the context of their use: a topographical map is of no help to the office worker deciding whether to carry an umbrella, and a weather map does not warn a hiker of a dangerous cliff. Although the underlying arrangement of geographic locations remains the same, cartographers alter individual depictions to serve vastly different purposes.

We cannot take this analogy too far, of course, because even graphic portrayals of the Buddhist cosmos are not maps in the modern sense but rather depictions of ideas. They do not aid navigation or change based on measurement. Instead, they represent the ideologies of specific historical, ritual, or theological circumstances. While enlightened beings may know the truth of the world in full, human portrayals have always been created for specific purposes and based on preceding texts or images. In context, then, depictions of the Buddhist cosmos always tell us more than the mere structure of the world. The very notion of the cosmos becomes a way of expressing something beyond itself. Because of this, we must learn to understand Buddhist cosmology not as an isolated subject but as a means of engaging with diverse aspects of the religion.

Simply put, one's worldview (literally, an imagined picture of the world) is central to one's religious life. Despite the seeming obviousness of this statement, modern scholarship on Buddhist cosmology has only infrequently been brought into dialogue with other subjects — with some very important exceptions — even though the basics of Buddhist cosmology are well known to most scholars.[16] This book ties particular formulations of the cosmos to varied contexts and, more significantly, presents a broader overview of the importance of cosmology to Buddhist history, theory, and practice. Doing so provides evidence not only of the ubiquity of cosmological thinking in Buddhism but also of the deep relevance of cosmology to religious studies in general. A cosmological impulse lies at the heart of many of the world's religions — an innate tendency to use the world around us to shape religious practice, contextualize ideology, and understand ourselves. Once this effect becomes apparent, it becomes impossible to see the traditions under discussion without it.

An Interdisciplinary Approach

Regarding this very idea of making things visible, Carl Sagan and the "Pale Blue Dot" photograph illustrate another major theme of this book: an explicitly interdisciplinary method that brings a traditional corpus of texts into dialogue with varied images, constructions, and practices. Explaining the motivation for the famous photograph, Sagan writes, "It had been well understood by the scientists and philosophers of classical antiquity that the Earth was a mere point in a vast encompassing Cosmos, but no one had ever *seen* it as such."[17] Sagan's emphasis on sight, on a material (rather than intellectual) engagement with such an important concept, exemplifies why visual and material practices must be considered in this study. Aside from being worthy expressions in themselves, images, objects, and practices shape understanding differently than texts do. Indeed, many people probably encountered Buddhist cosmological thinking only through images and constructed forms, internalizing the cosmologies of these objects rather than textual accounts. It is not enough simply to engage with what people wrote about the Buddhist world. Rather, we must explore everything that people produced based on their ideas of that structure. By examining such disparate

sources as complements to the traditional authorities, we can investigate the less obvious ways in which cosmology shapes the experience and practice of Buddhism.

Early Western scholarship on Buddhism emphasizes the textual and scholastic, even portraying Buddhism as a rational alternative to religions of the West. Secularizing Buddhism to the point of being unrecognizable, this approach ignores vital practices, such as prayer to deities, and other non-textual sources of evidence.[18] Notions that were unpalatable to the Western audience, like a cosmological model completely disproved by contemporary science, were sometimes ignored in search of the "truth" of the religion. Turning a blind eye to such fundamental aspects of Buddhism as cosmology, however, inevitably impoverishes our understanding. Once the notion of the Buddhist universe is rejected, all the various ideas associated with life in that world must be reinterpreted, often in ways that distort their significance.

Fortunately, scholars in more recent decades have done much to overturn the textual and scholastic bias of previous generations, foregrounding ethnography, visual art, archaeology, and other subjects and reshaping the study of religion. While classical texts might cast monks as renunciant meditators seeking enlightenment, observations of life in a monastery reveal that very few monks actually pursue such a path, spending much of their time performing rituals by rote.[19] By examining different sources of evidence, we rewrite the very notion of a monk, redefining a basic category of Buddhist tradition. Examining cosmology from an interdisciplinary perspective can also reshape the study of Buddhism in just such a way. We will recognize cosmology as a fundamental category of engagement with the world, as demonstrated through the ubiquitous materials of art, architecture, and ritual.

Non-textual materials are also essential to Buddhist studies in a number of more practical ways. This book begins with a chapter on textual sources in part to reveal precisely how limited they are for explaining visual depictions of the cosmos. Material objects simply form a different body of evidence than texts do, oftentimes expressing unique ideas, surviving from periods from which no texts endure, or remaining unchanged in the archaeological record while manuscript traditions transform with each successive recopying. Two very different stories of the origin of tantric deity-maṇḍala cosmology emerge, for example, depending on whether one looks at texts or images. The essential experience of material culture also differs from the experience of texts, such that divergent ways of constructing the ephemera of offering rituals correlate with notably dissimilar ways of imagining the structure of the cosmos. Without reading a word, practitioners in such traditions can develop sophisticated ideas about cosmology that affect the rest of their lives, including the very architecture they inhabit.

In short, the so-called authoritative texts to which scholars habitually turn for cosmology are not necessarily the best places to look when trying to understand its cultural and religious significance. Like any given painting or sculpture, each of these texts is just a single expression of the cosmological impulse in a particular context. While Buddhist practitioners consider some of the textual sources to be sources of

valid knowledge about the universe, this does not mean that other visions of the world depend on these sources, or that alternative portrayals do not become sources in their own right for new traditions of cosmological thought.

Scope and Outline

While Buddhist cosmology addresses everything from the creation and destruction of the universe to the fundamental elements and mechanisms of cause and effect, this book focuses on one pervasive cosmological subject, the static physical model of the universe. This model describes the geographic structure of the world, from the locations of continents and oceans to the numbers and types of heavens and hells. The logic of this inhabited world defines human existence and provides the framework for Buddhist spiritual practice. If for no other reason than this, the geographic world is a subject worthy of significant study. In addition, however, focusing on this subject allows us to identify a particularly wide range of expressions in visual and material culture, revealing the physical cosmos as a key component of many Buddhist traditions. While more technical topics of cosmology might be relegated to philosophical debates or esoteric practices, the geographic world appears frequently in art and ritual. Easily understood and highly adaptable, models of the physical world evince the ubiquity of cosmological thinking.

Such widespread usage also reveals the diverse functions of cosmology from one context to the next. Juxtaposing text to text, text to image, image to practice, and image to image exposes the unique cosmological thinking of various authors, ideologies, liturgical traditions, artistic forms, and more. Cross-cultural and historical comparisons are also useful, particularly regarding the Buddhist traditions of Nepal and Tibet. These neighboring cultures have had strong contacts with each other during many periods of history but retain some remarkable differences in their deployment of cosmological imagery in ritual and material culture. When engaging in such comparisons, it is important to resist essentializing any of these cultures or traditions and to ground each comparison in specific examples rather than broad generalizations. In exploring all these contexts of function, history, and culture, the goal is not to reify any particular analytic construction but rather to uncover a diversity of ways of thinking.

In broad outline, this book shifts from dealing with purely textual sources at the beginning, to studies of ritual ideology and performance in the middle, to almost entirely visual and material sources at the end. Each topic contextualizes particular depictions of the cosmos within larger frames in order to explore the ways in which cosmological thinking provides a means for expressing diverse aspects of religious life. First, showing that the texts often cited as authoritative sources for cosmology, like any painting or sculpture, are themselves merely specific instances of cosmological thought adapted to their own purposes, the book examines a broad spectrum of major Indic religious texts, including but not limited to the most well-known descriptions of

Buddhist cosmology. Then, taking up tantric subject of the maṇḍala, emphasis shifts to ritual ideology as expressed in both text and artwork, pursuing the complex and transformative implications of understanding the maṇḍala as a geographic cosmogram. Investigation proceeds next to the actual performance and material ephemera of ritual by considering a rite in which the practitioner physically assembles a detailed simulacrum of all the treasures in the world as an offering to a teacher. Finally, viewing artistic depictions in their own right, constructed forms and painted murals are addressed in their contexts of architectural space and historical development.

A Place for Structure

The methods applied here to the subject of cosmology, while interdisciplinary, are not the only possible approaches, nor do they capture everything that scholars and practitioners might think about the subject. I have chosen to combine techniques and evidence drawn especially from the disciplines of Buddhist studies, textual analysis, art history, and material culture studies because of my own interest in these realms and the broad range of topics they allow me to address. Another method, such as ethnography, would undoubtedly provide an entirely different perspective on the role of cosmology in religion and the ways that people think cosmologically in their everyday lives.

Would traditional Buddhist practitioners interpret things in the same way that I explain? I have no doubt that, in some cases, scholars, ritualists, and artists would, even if the general public might not. Philosophers who emphasized cosmology in their own systems of thought (such as Vasubandhu) also would likely have seen value in carefully parsing the significance of cosmological ideas. I am the first to admit, however, that many would not be consciously aware of the interpretations I suggest and that some might actively disagree with them.

At its foundation, this book does not actually ask what individual people in history believed. Rather, it tries to identify thematic and structural connections across wide swaths of Buddhist culture and history that reveal something deeper about religious activity than the convictions of any single person or group. In some ways, this approach shares features with Structuralism, a school of thought that addresses conceptual relationships largely in isolation from human agency. Unlike proponents of strong Structuralism, however, I do not argue that there is any universality to my interpretations or for any single abstract model of the cosmos that shapes all others (in the manner of a Platonic ideal). While the examples selected here illustrate certain essential themes, potential counterexamples simply provide more evidence that cosmological thinking permits radically variant possibilities. Generalizing from specific examples, then, does not reveal a single abstract truth but rather reveals a diversity of cosmological thinking.

At times, controversies have accompanied previous scholarship on religious cosmology, which has been strongly influenced by Structuralism and its opponents.

Mircea Eliade, in particular, drew broadly from cultures across the world to posit certain universal cosmological principles, especially a vertical axis through the horizontal center of the world that connects our middle plane with the realms above and below (such as heavens and hells).[20] Contemporary scholars have complex attitudes about Eliade, alternatively accepting his notion of the so-called *axis mundi* uncritically or lambasting him for generalizing too broadly. This controversy has resulted in a reluctance to deal in structural models of sacred space at all. Without directly addressing Eliade's theories, I hope to retrieve the topic of cosmology from the debate surrounding him by grounding my work in deeply contextualized examples, interrogating the full complexity of the subject.

More directly in the realm of Buddhist studies, the work of Paul Mus has also been incredibly influential for cosmological analysis but deserves further theorization and expansion. His important term "mesocosm," for example, appears in this book in analyses of tantric geography.[21] At the same time, Mus uses some terms inconsistently and addresses only the limited range of examples available from his sources.[22] Expanding beyond his writings through the use of specific, contextualized cases, then, is worthwhile.

The very idea of conceptual structure is worth reclaiming from the implicit grasp of Structural-*ism*. Many of the examples here show that indigenous Buddhist practitioners used various kinds of structural thinking for their own purposes, without being Structuralists in the modern sense. The authors of the *Treasury of Abhidharma* and the Wheel of Time corpus certainly did so, and this book is as much in dialogue with them as with Eliade or Mus. Although cosmological models provide structural modes of thinking about religion, these are not the only ways to speak about the subject or the purview of any specific interpreter or school of thought.

Deep engagement with cosmological thinking helps us understand a variety of aspects of Buddhist culture, and we must be open to as many methods and sources of evidence as possible. For too long, cosmology been an isolated subfield of Buddhist studies, and too often we find it easiest to rest in the materials of a single discipline or body of knowledge. Charting some of these new, connected realms, let us now embark on an exploration of Buddhist cosmology.

1

Cosmos in Texts

EXPLAINING THE BLUENESS OF THE SKY

Classical texts are the sources most often cited by Buddhists and other scholars regarding cosmological thinking, so they must be addressed in any argument about the role of cosmology in religion or art. Even in so-called authoritative texts, however, cosmological models are individuated to perform specific ideological and ritual functions beyond any objective presentation in the abstract. The use of cosmology as a framework for various kinds of religious activities is not a process of adapting a primary textual source to different functions. Rather, the textual sources themselves are simply additional instances of cosmological thinking tailored to particular agendas.

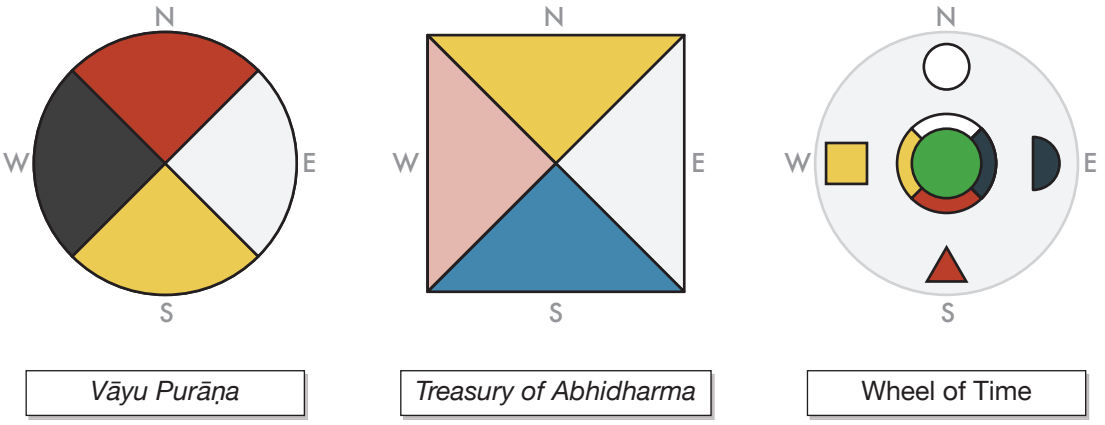
The alteration of cosmology to achieve specific goals can be illustrated by one simple example that is both literally and figuratively at the center of the world. In most Indic cosmologies, an enormous mountain known as Meru or Sumeru[1] rises from the very center of the circular earth, providing a home to major worldly deities. Meru has four faces, each turned toward one of the cardinal directions (east, south, west, and north). At the same time, Purāṇic, early Buddhist, and later Buddhist textual sources give radically different explanations of the composition of these four faces and their related symbolism for the religious tradition (fig. 1.1). The oft-cited *Vāyu Purāṇa* lists the colors as white, yellow, black, and red,[2] corresponding to the four social classes[3] of Brahmanism: priest, merchant/farmer, servant, and warrior/ruler.[4] In this way, the social order of human society is built into the structure of the world itself. The Buddhist *Treasury of Abhidharma*[5] alters this scheme to consider the nature of causality and empirical proof in the world. The text describes the faces not simply in terms of their colors but as being composed of specific minerals that provide a reason for the

colors: gold, silver, blue beryl,[6] and quartz.[7] The same natural force that instigates the physical creation of the universe (namely, the intentional actions[8] of sentient beings) produces heaps of these four types of jewels that grow to form the faces of the mountain.[9] Their composition is ostensibly verified by observation — our sky is blue because the blue beryl facet of Meru reflects its color into the sky of the southern quadrant where we live. In the other quadrants of the world, the sky has different colors that match the other precious substances. A third major textual source, the later Buddhist Wheel of Time[10] literature, provides a different scheme for the directional colors that identifies the basis of ritual practice in the world. It describes the facets of Meru as blue sapphire[11] in the east, ruby red in the south, yellow topaz in the west, white crystal in the north, and green emerald in the center.[12] This five-directional system corresponds to the five fundamental elements in the Wheel of Time, which also find expression in the major continents that surround Meru. Four continents in the cardinal directions are identified with elemental maṇḍalas, each of which has an associated shape and color. East is a blue-black semicircle (connoting the wind element), south is a red triangle (connoting fire), west is a golden-yellow square (earth), and north is a white circle (water).[13] Central Meru has the nature of the fifth element (void or space), the shape of a *bindu* (dot), and the color green. As a set, these five geographic bodies symbolize not only the five elements but also other important groups of five, including the five buddha-families. Such overlapping symbolism establishes the universe itself as a complete ritual system, rather than emphasizing human social order or scientific explanation.

The idea that numerous other traditions of literature, ritual, and visual art simply repeat the cosmological ideas of these texts is thus inherently problematic. The cosmologies of these texts are not general-purpose descriptions that can be applied to other contexts. The texts do not even provide the necessary details for accurately depicting the world in other circumstances. The *Treasury*, for example, does not specify which direction each of the four colored sides of Meru faces (only the blue beryl side is said to face in our direction, because our sky is blue). Many of the most well-known details of these cosmologies cannot be traced directly to the texts typically understood as their sources, which are themselves individual expressions of cosmological thinking.

Varieties of Indic Thinking about the Physical World

The overview of cosmological thought in the texts of ancient India presented here comprises examples from Hinduism, Jainism, and several traditions of Buddhism. With the exception of the *Ṛg Veda* being first, they are not presented in chronological order or with the goal of tracing cosmological ideas to their earliest textual descriptions. Rather, these accounts reveal the scope of cosmological thinking in the Indic textual/religious sphere. The *Ṛg Veda* uses cosmology to glorify its central deities, the Purāṇas match cosmology to human history and social structure, and Buddhaghosa's *Path of*

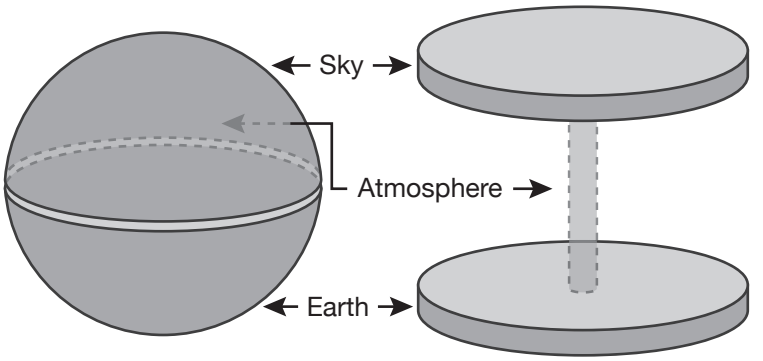


1.1. Three color schemes of Meru's quadrants according to the *Vāyu Purāṇa*, *Treasury of Abhidharma*, and Wheel of Time

Purification[14] portrays cosmological knowledge as one of many factors of enlightenment. As the most influential cosmological texts of Himalayan Buddhism, Vasubandhu's *Treasury of Abhidharma* and the Wheel of Time corpus are granted significantly more attention. The former emphasizes a cosmology of causation in relation to karma, while the latter interconnects physics, astronomy, cosmology, biology, meditation, and enlightenment in a single logical structure, the explicit purpose of which is to serve as a frame for soteriological ritual. Both are commonly cited as sources for numerous kinds of cosmological artwork and ritual, but both also lack the specificity and clarity needed to make their models generally applicable to these other purposes. Indeed, non-cosmological textual sources, such as the narrative of the Buddha's life known as *Extensive Play*,[15] have at least as much influence on Buddhist artistic representations of the world.

THE *ṚG VEDA*

Cosmological thinking has been a theme in numerous religious texts in India, starting with the earliest source available, the *Ṛg Veda*, a collection of hymns for sacrificial ritual.[16] While scholars look to these early texts for cosmological models, the cosmologies they describe are not given in the abstract but are applied through literary devices toward rhetorical and ritual goals. The *Ṛg Veda* mentions cosmology most clearly in metaphors of praise to its deities. Although we can learn from these passages something of the basic geometric and spatial principles through which the authors viewed the universe, we cannot take them at face value as stated cosmological models.



1.2. Two descriptions of the cosmos in the *Ṛg Veda*, the earth and sky as two bowls and the earth and sky as wheels on an axle

In the abstract, the physical world of the *Ṛg Veda* comprises three vertical layers of space: the earth, the sky or heaven, and the intermediate space or atmosphere that separates earth and sky.[17] Theologically and cosmogonically, this can be considered a dualistic system of father Heaven and mother Earth, the separation of which by the god Indra creates an intermediate space in which life occurs.[18] Two metaphors give some sense of this arrangement in the text, although they are not entirely consistent (fig. 1.2). The first describes the earth and sky as "two great bowls turned towards each other,"[19] with the sun understood to travel in the space between the layers of earth and sky.[20] Another characterizes the earth and heaven as two wheels on a chariot axle.[21] Both metaphors suggest further structural principles in the cosmic model, such as a circular boundary and an implied center, in the latter case, at the axle. Horizontally, the *Ṛg Veda* divides space into the familiar four cardinal directions of east, west, north, and south.[22] These basic structural principles create a sense of the universe as an organized space and remain influential in later Indic traditions.

At the same time, the cosmology of the *Ṛg Veda* is not given as a list of spatial principles. Rather, these descriptions of the world occur as metaphors related to the worship of particular deities, stories of creation, or specific ritual practices. The example of the world as two wheels occurs thus:

> For Indra I have raised my songs, (like) waters in restless surges from the depths of the sea,
> for him who propped asunder earth and heaven with his powers, like wheels with an axle.[23]

The primary function of this verse is to praise the deity Indra. His manipulation of the earth and sky like chariot wheels is a metaphor for his power and his creative activity, not a literal description of geometry. Later Vedic traditions continue this layering of meaning into space, developing correspondences between tripartite space, the

cardinal directions, specific deities, natural elements, parts of the body, metaphysical powers, poetic meters, seasons, animals, and social classes.[24] Cosmological structures described in these texts provide more of a framework for expression and analysis than they do an abstract, independent model.

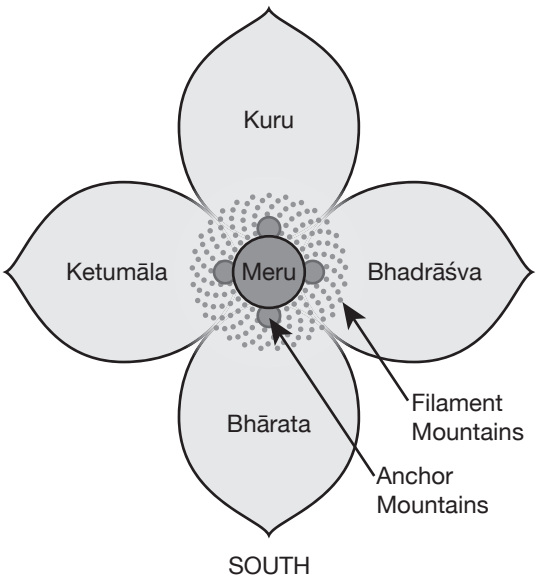
While cosmological thought remains a major factor in religious texts from the *Ṛg Veda* onward,[25] cosmological models became a major subject of scholastic attention more than two millennia later. In the fourth to fifth centuries, a cultural shift seems to have prompted commentators in all traditions to organize knowledge in new ways, composing entire chapters of encyclopedic treatises on the shape and function of the world (although presumably adapting their work from previous sources that no longer survive). By examining the Hindu Purāṇas, Jain sources, and Buddhaghosa's *Path of Purification*, we can see both the broad scope of cosmological thinking in Indic traditions and the specific stances taken by Vasubandhu's *Treasury of Abhidharma* and the Wheel of Time corpus in relation to these other systems.

THE PURĀṆAS

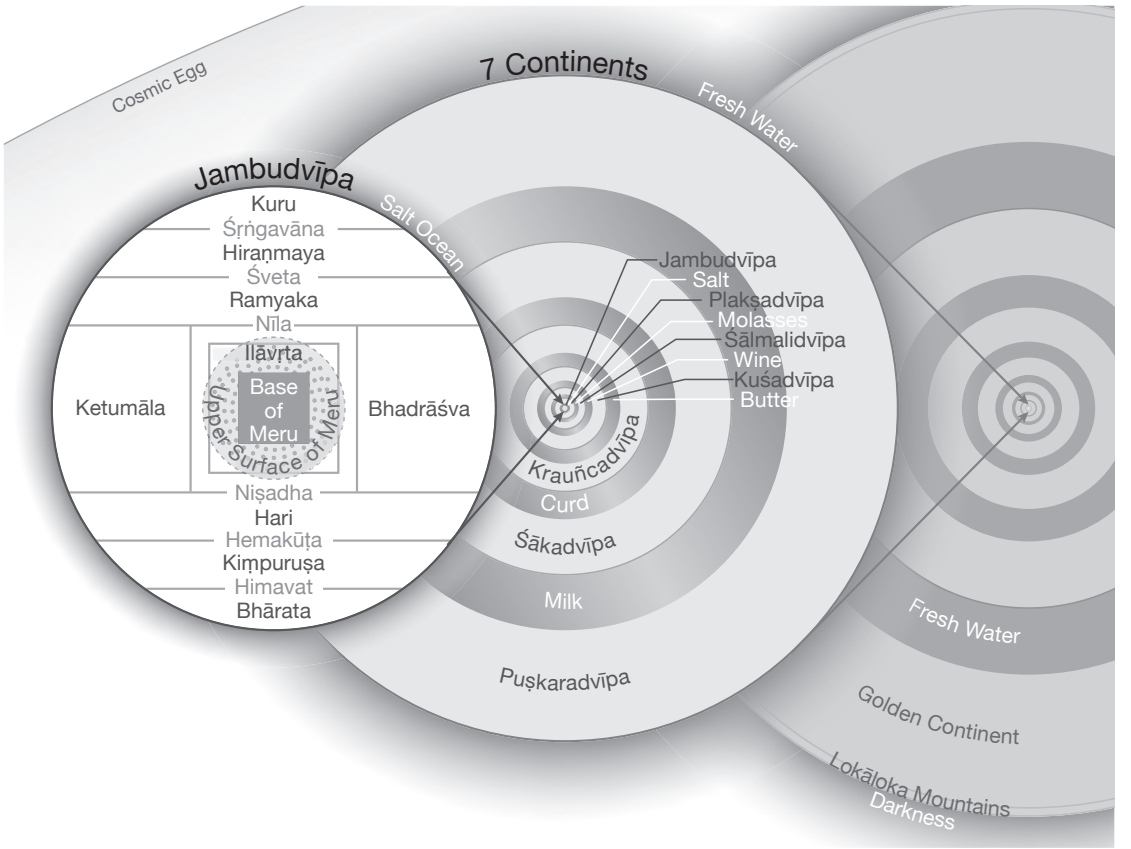
The Purāṇas, as a body of literature, can be difficult to historicize, since various texts given the designation *purāṇa* (ancient) were composed over an extended period of at least one thousand years. Several important Purāṇas date to the fourth to fifth centuries, around the same time as the *Path of Purification* and the *Treasury*. While they further develop the circular/axial model of Vedic conception, the key principle behind Purāṇic cosmology is not glorification of the deities but integration into human history and geography. The cosmos is still a place of deities, but its descriptions blend seamlessly into human family lineages, local geography, and historical narratives. In comparison to the *Treasury*, the Purāṇas present humans as radically more central to the cosmos, in terms of both their apparent importance and their actual geographic location.

Broadly speaking, the Purāṇas describe two different but related models of the universe, with explanations sometimes overlapping even within a single text. In the apparently earlier formulation,[26] the world has four continents arrayed in the cardinal directions around a central mountain, like the petals of a lotus flower around the carpellary receptacle (fig. 1.3). In the second, more complicated version, the axial mountain lies at the center of Jambudvīpa, a circular landmass surrounded by six additional continents formed as concentric rings separated by concentric oceans (fig. 1.4). Each of these lands contains vast complexes of mountain peaks, valleys, rivers, and forests.

As is typical of the fourth- to fifth-century emphasis on cosmology, the *Vāyu Purāṇa*[27] describes the first model, the four-continent universe-as-lotus-flower, in great detail.[28] Meru, the axial mountain considered the central pericarp of the universal lotus, has a height of 84,000 *yojanas*[29] and is sunk into the earth to a depth of 16,000 *yojanas*. The section above the surface of the earth has the shape of a bowl and



1.3. World-as-lotus cosmology of the Purāṇas



1.4. Seven-continent cosmology of the Purāṇas

is narrower in breadth at the base (16,000 *yojanas*) than at the top (32,000 *yojanas*). Or, in an equivocation typical of this type of description, it might be triangular, quadrangular, octangular, one-hundred-angled, or one-thousand-angled or shaped like a saucer, a twisted braid of hair, or a sphere.[30] Like the carpellary receptacle of a real lotus, Meru is surrounded by small mountains akin to the filaments (or stamens) of a flower. Four medium-size mountains located in the cardinal directions anchor the earth to immovable Meru. Four continents extend from these mountains, also in the cardinal directions, having the shape of lotus petals. These continents are (clockwise from the south) Bhārata, Ketumāla, Kuru, and Bhadrāśva (see fig. 1.3). Each is 100,000 *yojanas* in length and 80,000 in breadth.[31] The various gods live in mansions on the peak of Meru, divided between the center, cardinal, and intermediate directions. An emphasis on the four cardinal directions profoundly undergirds the geography of this text, to the point that a complete survey of the world is considered to be summarized with "the four great continents, the four pleasure gardens, the four great banner-like trees, the four excellent [holy] rivers, the four great mountains, the four serpents for support, the eight superior great mountains, [and] the eight excellent mountains."[32]

The alternative Purāṇic model, while still concerned with cardinal directionality, adds even more complexity to the major divisions and details of the world. The *Vāyu*, *Matsya*, and *Viṣṇu Purāṇas*, among others, explain this second model.[33] The basic size and shape of the central mountain are similar to those of the first model, but land surrounds Meru in a complete circle forming the island of Jambudvīpa, which is divided mainly into regions stretching east to west with separate names (see fig. 1.4). Still, aspects of the division into the four lotus-petal continents remain; the most peripheral regions of Jambudvīpa in each of the four directions retain the names Bhārata, Ketumāla, Kuru, and Bhadrāśva. On the one hand, this subsumption of the previous model suggests that a sense of consistency was important. After all, both are meant to describe an enduring geographic reality. On the other hand, this point of comparison also reveals the extent to which the later model vastly expands upon the former. Six additional (and much larger) continents surround central Jambudvīpa, making a total of seven major continents separated by oceans filled with sacred liquids such as clarified butter, milk, and fresh water. It is also noted that "there are thousands of types of islands but they come under the purview of the main seven islands; it is not possible to describe the entire universe in detail."[34] Despite this omission, the descriptions of the world are striking precisely for the extreme detail they do include, meticulously recording the mountain ranges, rivers, forests, and special features of each region. If nothing else, such specificity may give a greater sense of the authoritativeness of these descriptions.

More importantly, however, these descriptions of the world transition seamlessly into explanations of particular places that are ritually or historically important to the social and theological worlds of these texts. Among the geographic descriptions are explanations of Kailaśa (the sacred mountain of Śiva)[35] and the sacred river Gaṅgā (whose course is narrated from its origin in the sky down to the peak of Meru and

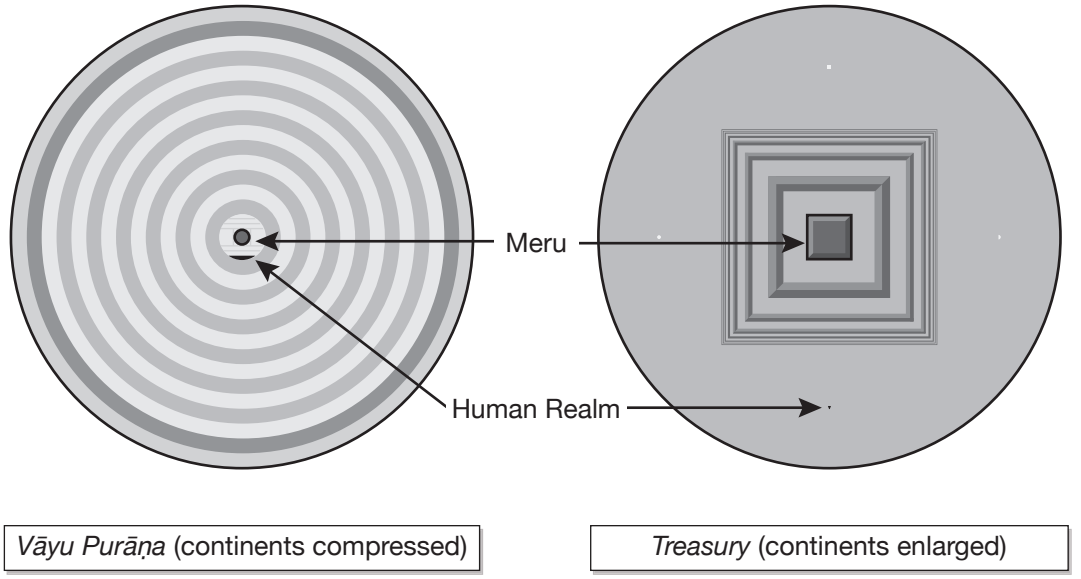
through four branches to the ocean).[36] Passages on Jambudvīpa list the names of dozens upon dozens of tribes and peoples alongside those of mountains and rivers. The chapters surrounding these descriptions, too, address primarily the generational lineages of various beings, including *devas* (gods) and human beings going back to the original progenitor of humankind.

In essence, the cosmology of the Purāṇas sets the geographic stage for broader mytho-historical narratives. Just as cosmology can set the stage for narrative action, here, the cosmic geography provides a structural framework for human and divine characters, lineages, and sacred sites of the Purāṇic worldview. Unlike cosmological descriptions that open texts, however, the geographic cosmologies of the *Vāyu* and *Viṣṇu Purāṇas* occur toward the middle, signaling that they are viewed as parts of larger histories. Although shorter descriptions of the world do appear in the preceding accounts of the creation of the world,[37] the detailed geographies occur within overviews of human and divine history. This context for cosmological presentation is vastly different from that of other sources, such as the *Path of Purification*, which emphasizes meditational development toward enlightenment, or the *Treasury*, which emphasizes scientific analysis and causal explanation. In these cases, extended treatments of topics like Kailaśa and the Gaṅgā are not necessary — not only because these are Buddhist texts, but because their purposes are different.

The Purāṇic system even ingrains the importance of humans into the very structure of the world it describes by placing human beings near the geometric center of the cosmos. In the seven-continent model, humankind as we know it is confined to the southern region of Bhārata in the central continent of Jambudvīpa.[38] Despite being located at this local southern extreme, humans lie close to the center of the whole cosmic system, with numerous expansive continents surrounding them. In the four-continent Purāṇic model, by comparison, humans simply live in one of the four quadrants, with all four continents at an equal distance from the center. The centrality of the human location in the Purāṇic system becomes even more apparent in comparison with the *Treasury*, which places humans near the periphery of the cosmic disc (fig. 1.5).[39] This difference has real meaning for the two religious traditions. In the Purāṇas, the human story is central to the cosmic narrative history. The Buddhist model, in emphasizing humankind's distance from the divine center, becomes a framework for imagining the long and difficult path toward enlightenment. Such themes of the expansive nature of geographic space and its relationship to enlightenment also play important roles in Jain cosmology.

JAIN COSMOLOGY

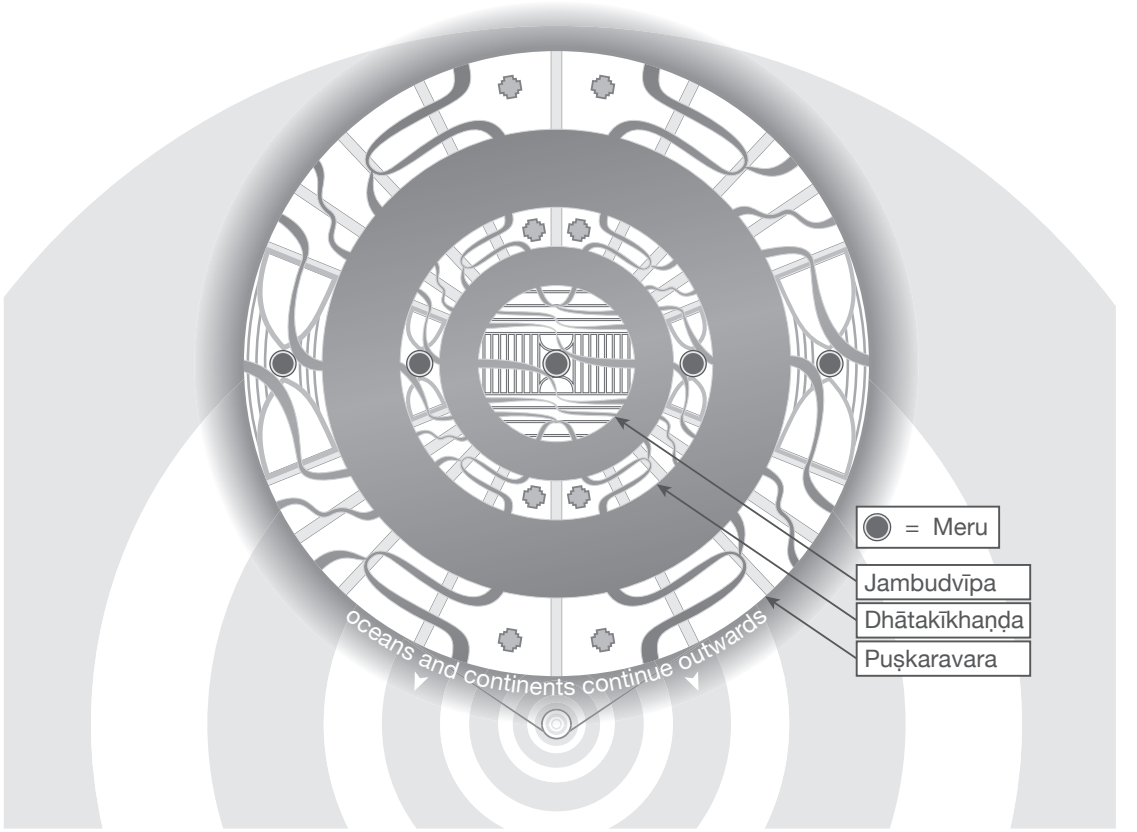
Jain cosmology takes the Jambudvīpa-centered, concentric ring model and exponentially increases its size and complexity, making it the centerpiece of numerous doctrines, rituals, and artworks. Because of the immensity of this subject, a brief overview



1.5. Locations of the human realms in the *Vāyu Purāṇa* and the *Treasury of Abhidharma*

of key relationships to other traditions must suffice.[40] Indeed, several features of the Jain model directly influenced the formation of the later Buddhist Wheel of Time cosmology, particularly its conflation of the cosmic geography with the figure of the cosmic human. In general, the expansiveness and detail of the Jain cosmology correlate to soteriological and theological agendas of Jain thought, in contrast to Buddhist and other versions.

The clearest evidence that the Jain cosmology emphasizes a spatial and numerical expansion beyond other systems is its use of a different unit of measure for length. The *rajju* (also *rāju*) is defined as the distance traveled by a god in six continuous months at the rate of 2,057,152 *yojanas* per second.[41] The difference between a *rajju* and a *yojana* is one order of magnitude greater than the difference between a light-year and a kilometer or mile.[42] Using the *rajju* as a unit, the cosmos takes on a much greater scale and can be articulated to much more depth into space, especially into the realms of heavens and hells above and below our middle world. Jambudvīpa, the circular continent with Meru at its center, has generally the same structure as it does in the Purāṇas. The outer continents also follow the same concentric pattern as in the Purāṇas, similarly doubling in width with every iteration outward,[43] but in the Jain system, the continents are innumerable. Human civilization expands beyond Jambudvīpa to include all of the first ring continent and the inner half of the second one (fig. 1.6).[44] Each of these two ring continents possesses its own Meru mountains along an east-west axis, making for



1.6. Human-inhabited continents of the Jain cosmology

a total of five.[45] Meru can be envisioned as three truncated cones stacked on top of one another, with larger bases at the bottom (see fig. 1.22).

Aside from its size and complexity, another key feature of the Jain model is its portrayal of the entire universe within the body of a cosmic man. This humanoid figure, fourteen *rajjus* tall, embodies the vertical organization of realms, with our middle world at its waist, the hells descending toward its feet, and the heavens rising toward its crown.[46] This organization invokes Indic notions of hierarchical purity within the human body, which runs on a scale from the purest at the crown of the head to the most impure at the soles of the feet. While reminiscent of the creation of the universe from the body of the cosmic man described in the *Ṛg Veda* (which divided humanity into four classes), in this version, the cosmic man is seen as a connected whole, and ascent through the realms correlates with the process of enlightenment.

The innumerability of the continents and the immensity of the Jain system served multiple purposes in Jain philosophy, from strongly emphasizing the rare opportunity of human birth within the vastness of the cosmos to reassuring the practitioner that

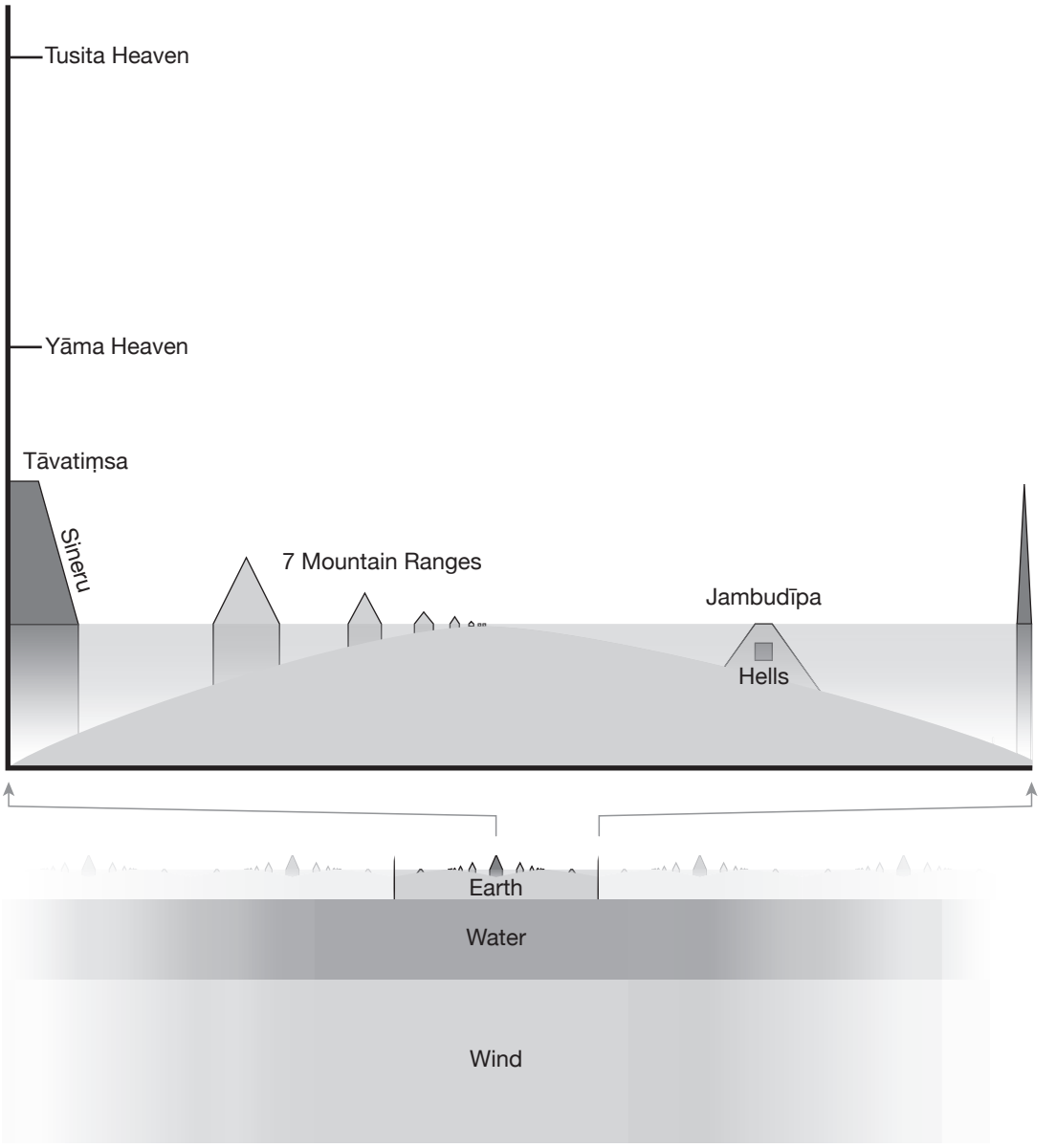
the universe is large enough to allow multiple enlightened teachers to exist simultaneously.[47] This latter point opposes the Buddhist idea that there can be only one buddha in the world at a time.[48] For the most part, these features of the Jain system again emphasize the human place in the cosmic realm and the larger spatial principles that help define it. Turning to Buddhist traditions and especially the Pāli *Path of Purification*, we find a cosmology articulated to very different effect in a treatise on meditation.

PĀLI SOURCES: THE NIKĀYAS AND BUDDHAGHOSA'S *PATH OF PURIFICATION*

Like the *Ṛg Veda*, the early Pāli Nikāyas[49] scatter details about the structure of the universe without explaining systematically.[50] They mention cosmic geography primarily in relation to the various beings that dwell within the hierarchically arranged realms.[51] This arrangement becomes a model for the path to enlightenment, with the practitioner ascending through stages until transcending even the heavens.[52] This and other important features, like the division of the world into cardinal directions and the names of particular continents, are carried through by later authors who organize these details more coherently. These self-conscious systematizations are particularly relevant for comparison with other cosmological models. Let us again skip forward in time, then, to the cosmology of the fifth-century *Path of Purification* by Buddhaghosa.[53]

The *Path of Purification* does contain a coherent description of the world, but Buddhaghosa's main purpose was to provide a manual for meditation.[54] He wished to describe the states of mental and behavioral practice that deliver enlightenment and its release from the sufferings of the world. While he probably drew on some of the same sources as Vasubandhu did, and indeed many of the details of their models are similar, his passage on cosmology reflects an emphasis on the awareness of the enlightened mind. Knowledge of cosmology is presented as little more than a characteristic of the Buddha's omniscience, meditation on which helps the practitioner develop. Once again, the details of the cosmological description subtly reinforce this agenda by implicitly reflecting qualities of the Buddha's mind.

The coherent description of the physical world occurs in chapter 7, which enumerates six types of recollection[55] that meditators can use to cleanse their minds.[56] Recollection of the Buddha requires bringing to mind specific qualities of his perfection, such as that he is accomplished, fully enlightened, endowed with clear vision and virtuous conduct, and sublime.[57] After enumerating these characteristics, the *Path of Purification* describes the Buddha as a knower of worlds,[58] which is taken as an opportunity to expand on exactly what knowledge of the world should mean. In one sense, this is complete knowledge of the causal cycle of the world, including its essence, arising, cessation, and the means of cessation. It also means knowledge of all beings and their qualities, so that the Buddha may best be able to teach them. Finally, just as he knows the world of all beings, the Buddha also knows the world of all locations, that



1.7. Speculative elevation of the cosmos described in Buddhaghosa's *Path of Purification*

is, the geographic cosmos. This correlation between the world of beings and the world of locations is also a major theme in the *Treasury*.

The *Path of Purification* summarizes the geographic cosmos very succinctly, leaving many questions unanswered. With only the given information, it would be impossible to make a measured diagram, but since there is considerable overlap between

this system and that of the *Treasury* , one can tentatively illustrate the basic features of this account (fig. 1.7). The text describes a disc-shaped world 1,203,450 *yojanas* across, composed of successively denser layers of matter. The flat, circular earth floats on water resting on air in empty space. The central place is occupied by the axial mountain (in Pāli, "Sineru"), which has a height of 84,000 *yojanas*. Several rings of mountains surround it, each ring half the height and depth into the ocean of its more central neighbor. Outside of these, the inhabited continents sit in the vast ocean, itself surrounded by a ring of mountains that delimits the world.

Comparing the brief description in the *Path of Purification* to the one in the *Treasury*, a few major differences are immediately noticeable (for comparison, see figs. 1.7 and 1.8). For one, the ring of mountains that surrounds the circular cosmos is described in the *Path of Purification* as being nearly as tall (82,000 *yojanas*) as the central mount Meru, while in other systems, Meru stands out radically as the greatest object in the universe. Meru's shape is also given with less specificity, while the *Treasury* embellishes its cosmic hierarchy with stepped terraces on the body of Meru itself. Buddhaghosa also notes that our disc-shaped world is not unique but rather one of an infinite number of similar worlds adjacent to one another in the flat plane of space.[59] In this description, the layer of water beneath the world is considered to extend outward infinitely so that the individual disc-worlds are like islands rising out of a common ocean.[60] Because of the contiguity of separate universes, people on Jambudvīpa actually live closer to beings on other continents in an adjacent universe than to major geographic features of their own.

All these details merely support the recollection of the Buddha as a knower of worlds for the purpose of achieving enlightenment. Indeed, the cosmological passage begins with a verse that describes its purpose, not as knowledge of the world, but as transcendence of it:

> 'Tis utterly impossible
> to reach by travel the world's end;
> But there is no escape from pain
> until the world's end has been reached.
> It is a sage, a knower of the worlds,
> who gets to the world's end, and it is he
> whose life divine is lived out to its term;
> He is at peace who the world's end has known
> and hopes for neither this world nor the next.[61]

The first lines of this passage reorient the reader toward thinking of the "world's end" as a soteriological goal rather than a navigational one. The lines that follow establish an equivalence between the final conquering of suffering and omniscient knowledge of the world.

As the section on the Buddha as a knower of worlds continues, two distinct characterizations of this worldly omniscience become apparent, each related to different aspects of Buddhaghosa's cosmological model. First, omniscient knowledge is complete, including everything in existence to the very ends of the world. Buddhaghosa's summary description of the world, rather than attempting to convey every detail of the geography, provides an outline of this complete understanding. Although it may be just coincidence, Buddhaghosa's uniquely towering mountains at the world's edge, almost as tall as Meru, seem to reinforce the contained completeness of this kind of omniscience. By walling off the edge of the world like the sides of a shallow bowl, they imply that the world is a bounded container, a finite system that can be known in its entirety. The second characterization of omniscience, in direct contrast to the first, is that it is infinite, or without boundary. This arises in direct reference to Buddhaghosa's description of the infinite number of individual world-systems that lie next to one another in the flat plane of space.

In general, Buddhaghosa used cosmology as a way of characterizing the knowledge of the Buddha, not the world. Even his enumeration of the major features of mountains and continents can be considered shorthand for more-detailed scholastic accounts that were probably available in other texts. For Buddhaghosa, the features and workings of the world are less significant than what they represent about the path toward liberating realization.

The *Treasury of Abhidharma*: The Usual Suspect

The *Treasury of Abhidharma* is the single most influential source for Himalayan Buddhist cosmology. Despite being cited as a source for the cosmology of meditations, rituals, and narratives explored in the rest of this book, Vasubandhu's model serves his own agenda and lacks the specificity required for use toward other purposes. His central arguments concern the nature of causality in the Buddhist worldview, an essential basis for understanding enlightenment. While other textual sources, rituals, and paintings do refer directly to elements of the *Treasury*'s cosmology and appear similar in the abstract, all are independent formulations with details appropriate to their own functions and contexts. Vasubandhu's descriptions emphasize the features that fit his agenda, while his omissions make the unmediated use of his text in other contexts problematic.

VASUBANDHU'S *ABHIDHARMA*: CAUSATION AND SENTIENT BEINGS

Vasubandhu's fourth- to fifth-century *Treasury of Abhidharma*[62] encompasses his views on the topic of *abhidharma*, a kind of scholastic knowledge that "is intended to draw upon, and reason with, the Buddha's teachings in order to shape a coherent, comprehensive account of the basic, elemental truths of reality."[63] Not only an extended

commentary on the Buddha's teachings (Dharma), then, *abhidharma* is a discriminating analysis of all the elements of reality (*dharmas*). As an encyclopedic treatment[64] of this topic, the *Treasury* includes analyses of the natural elements, sense perception, karma, rebirth, sentient beings, the geographic world, causality, stages of meditation, kinds of knowledge, the qualities of a buddha, and more. The *Treasury* became one of the primary sources for this type of knowledge in Himalayan and especially Tibetan Buddhism.[65] Its popularity has led both scholars and practitioners to cite the *Treasury* as the primary model of Buddhist cosmology, attributing other instances of cosmological depiction to reliance on it as a source. While certainly more influential than other Buddhist models, such as the Wheel of Time, the *Treasury* contains a unique cosmological description determined by Vasubandhu's own agenda, not directly translatable to disparate contexts.

Vasubandhu's primary concern in the *Treasury* is the nature of causality, especially its deep implications for Buddhist systems of thought. At times, he even engages in a kind of reductionism to show that the causal process is sufficient to explain other elements of reality that falsely appear to us as independent entities.[66] Arguments about causality occur repeatedly in the *Treasury*, including in the cosmological section. Vasubandhu's description of the jewels that make up Meru is a perfect example (see fig. 1.1), explaining both the cause of their arising and the observable effects they have in the world.

The second major theme that governs the geographic cosmology is the relationship between the physical cosmos and the living beings that dwell within it. The cosmos essentially functions as a container for dividing sentient beings into different realms, a division that is naturally determined by the causal consequences of their previous actions (*karmas*).[67] Even this second theme, then, is an offshoot of Vasubandhu's consideration of causality in the Buddhist universe. Deepening the relationships between living beings and geography represented in other texts, such as the Purāṇas and the *Path of Purification*, Vasubandhu describes an innate interdependence between types of beings and the locations they inhabit. For him, explaining the physical cosmos provides a way of understanding the nature of all life within it.

Vasubandhu's teaching on the world[68] even opens with the correlations between types of sentient beings and specific places in the universe in a description of the three vertical realms[69] that divide the world. The lowest level, the Desire Realm,[70] contains the geographic world and most of the five paths of birth[71] that Vasubandhu acknowledges: hell beings, animals, *pretas*, humans, and many of the *devas*. Above that is the Form Realm,[72] which has ascending heavens of *devas* above the Desire Realm that correspond to ascending stages of meditation. The third, the Formless Realm,[73] having no form, "is not a place"[74] and connotes meditative achievement that transcends the body. Given Vasubandhu's concern for causality, one of the major questions about the Formless Realm is how sentient beings without physical existence can have mental events. As they are for Buddhaghosa, the number of such triple-realms is infinite.

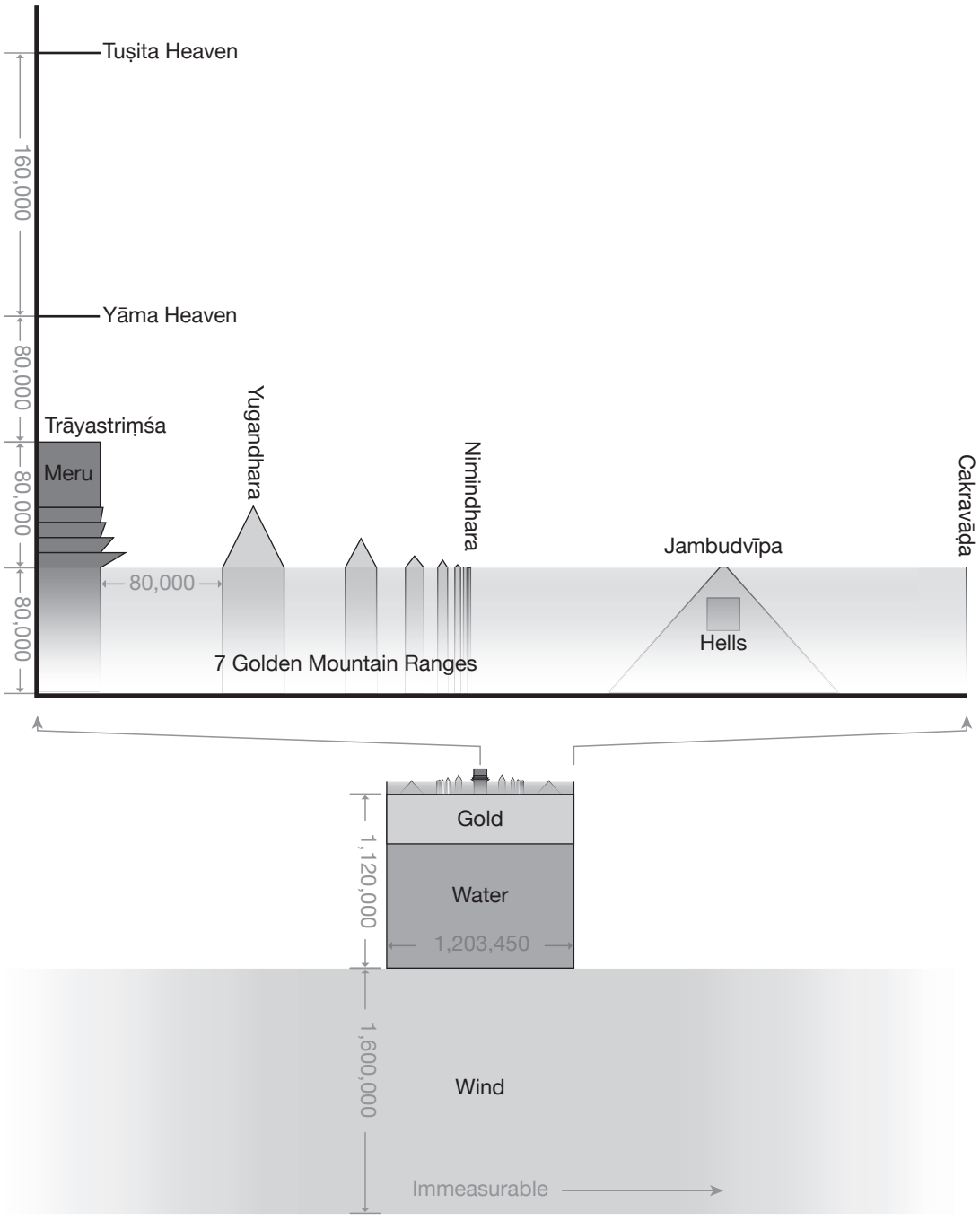
These worlds rest against one another contiguously in the cardinal and intermediate directions, as well as, according to some of Vasubandhu's sources, above and below.[75]

Before describing the geography of such a world, Vasubandhu addresses other factors of life, including different types of consciousness, the biological processes of birth, and the intermediate state of existence between death and (re)birth. This leads to his examination of the fundamental causal process that underlies life, the twelvefold chain of dependent origination.[76] With this basis, he discusses other more specific causal processes of life, such as sense perception. Of course, not all the arguments in these sections deal with causality. Vasubandhu also describes etymologies of important terms, arguments with other schools of thought, and the specific teachings of the Buddha on certain topics. Part of his goal is also a completeness that corresponds to the *abhidharma* concern for understanding all elements of reality.

Having addressed life of all kinds and the processes that govern it, Vasubandhu next describes the physical world. The text marks this transition by noting that the preceding is a discussion of the world of beings (*sattva-loka*), and the following is a treatment of the shared physical world as a container for sentient beings (*bhājana-loka*). While the main subject turns to the geography of the cosmos, however, the topic of beings is never far removed from the conversation. The world exists solely as a consequence of the actions of beings and as a setting in which the processes of karma occur.

The relationship between the actions of beings and the physical world is the basis for the first elements that arise in the cosmos, starting with a circle of wind on which our shared physical world rests. This disc of wind is immeasurable in diameter, with a height of 1,600,000 *yojanas* (fig. 1.8).[77] This subtlest of the elements is established in empty space as a result of the intentional actions of sentient beings. In the upper reaches of this air, clouds form (through the actions of beings) and condense into a disc of water. Concerned with how this cylinder of water could retain its shape rather than simply spilling outward, Vasubandhu locates the ultimate cause again in the actions of beings.[78] Churned by winds "combined with the power of the actions of beings,"[79] the water becomes gold on top, as boiling milk produces cream. The diameter of these cylinders of water and gold is 1,203,450 *yojanas*. The layer of gold settles into a circle of earth, forming the flat disc on top of the world where beings dwell. The three layers of wind, water, and golden earth are known as the three discs,[80] the bases of the physical world. Within this system, Vasubandhu then addresses major geographic features, dwelling places of beings of the five paths of birth, motions of the sun and moon, and spans of time (including cosmic cycles of time and the life spans of beings).

The form and location of each geographic part of the world results from the actions of the sentient beings who dwell there. The heavens are pleasant and elevated because of the previous actions of their inhabitants, and the hells are torturous and base for the same reason. Birth as a certain type of being is equivalent to birth in a particular location, since the physical world exists only as a result of (and medium for) the causal actions of sentient beings. Vasubandhu makes this point most explicitly when discussing



1.8. Elevation of the cosmos described in the *Treasury of Abhidharma*

the status of the guardians[81] who torture evildoers during their births in hell. The sole activity of these entities is inflicting suffering on others, so if they were sentient beings, they would perform such innumerably evil deeds that they would never escape hell themselves. Since it is possible for all sentient beings to move through the realms of birth by producing both good and bad actions, the logic goes, these guardians of hell must be mere apparitions, generated through natural law by the previous actions of the creatures they torture.[82] The physical regions of the cosmos, along with their joys and sufferings, are nothing more than extensions, through causal law, of the beings who dwell within them.

In a sense, this account reverses the metaphor of cosmology setting the stage for narratives of important beings. Here, it is instead the actions of sentient beings that set the stage for (and directly cause) the existence of the world. While the physical geography is still an arena in which actions take place, it may be better understood as stage dressing—the props and apparatuses that appear to the actors and audience for their benefit, but for which there is no underlying reality. This does not mean that geography is any less important for Vasubandhu, however. The intimate connections between the physical cosmos and the types of life within it mean that its topology is that much more relevant for understanding fundamental Buddhist truths about the nature of existence. Since life and location are defined together, a comprehensive map of the cosmos is absolutely necessary to describing sentient existence.

PARSING VASUBANDHU'S GEOGRAPHY

Because the geography of the *Treasury* relates to many cosmological images and rituals, Vasubandhu's descriptions of the physical cosmos merit examination in detail. Many artists and practitioners explicitly claim the *Treasury* as the ultimate source of the model they employ. Indeed, Vasubandhu's text clearly realizes some of the basic structural principles of Buddhist space that appear in many other aspects of the religion, including the deity maṇḍala, offering maṇḍala, and architecture. Essential ideas about symmetry, centrality, and vertical hierarchy that appear in the *Treasury* pervade Buddhist ritual and imagery, as do more particular features such as Meru. At the same time, Vasubandhu's exposition either lacks or directly contradicts many other characteristics seen in rituals and art. For example, the *Treasury* does not describe the orientations and colors of the continents as they appear in most visual depictions. In later artworks, artists are relying on previous depictions or other oral and textual traditions. The *Treasury* also contains internal contradictions and confusions that make employing the cosmic geography in other contexts more difficult. Let us now look in detail at Vasubandhu's description of the world, for both its idiosyncrasies and its broader influence. The following analysis largely follows the sequence of Vasubandhu's exposition while problematizing the use of his text as a source for other (especially visual) depictions, revealing the full depth of Vasubandhu's correlation between types

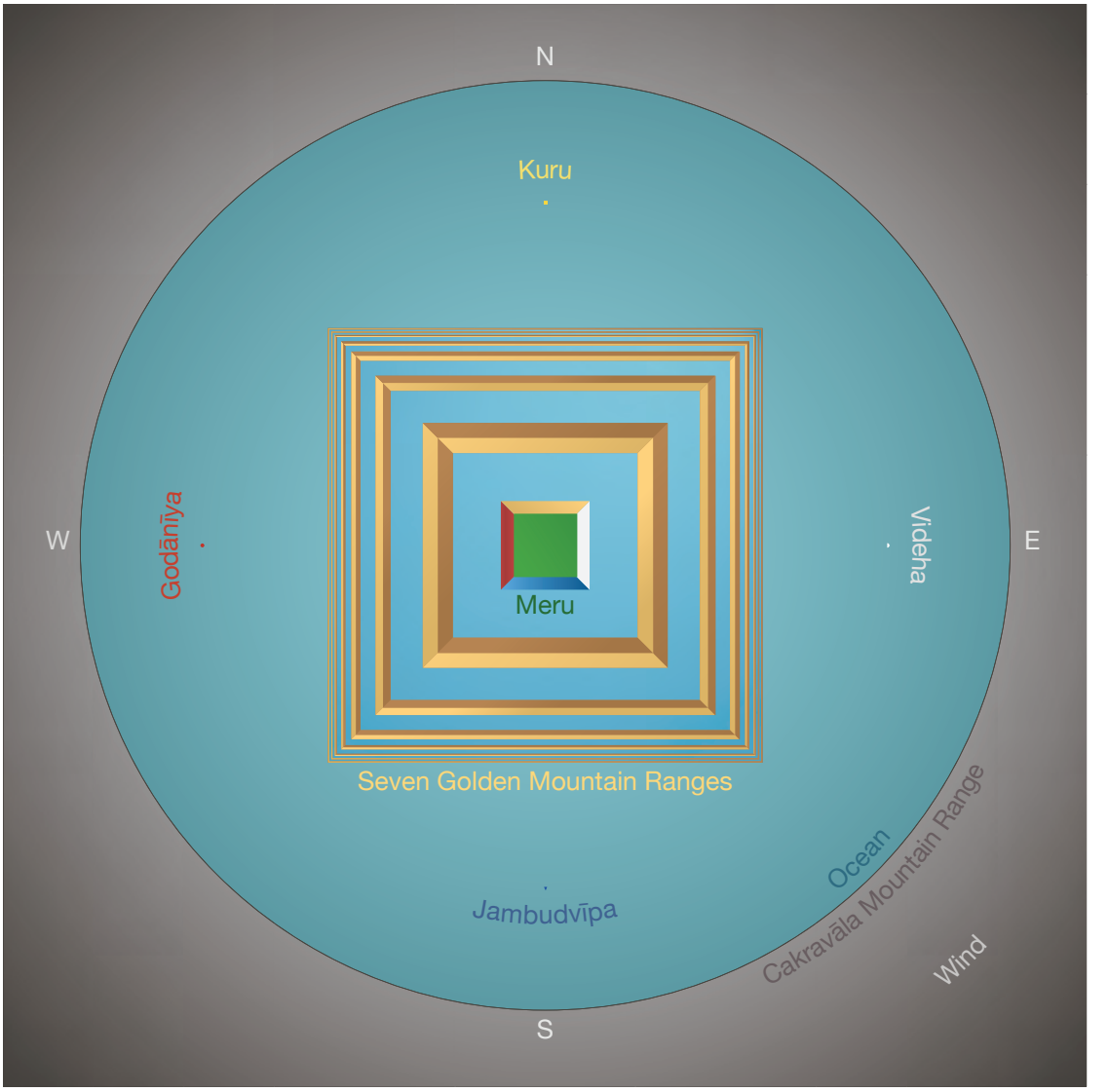
of beings and locations in the world, and enumerating the essential structural features of his cosmology that transcend his text to form a widespread framework for visual art and ritual performance.

Vasubandhu begins his geographic description with central Meru and its jeweled facets, but even this simple structure is not described sufficiently for the needs of artists. The central mountain is made of four jewels — gold, silver, blue beryl, and quartz — on the four sides. These stones contribute to the color of the sky in each of the four quadrants, but other than blue beryl being in the southern direction of our continent Jambudvīpa, the orientation of the stones in the three remaining directions is not clearly specified.[83] The artistic tradition is generally consistent about the arrangement of colors, with gold (yellow) in the north, silver (white) in the east, and quartz (usually depicted as red in later traditions)[84] in the west. While the visual representations are consistent with descriptions in the *Treasury*, they clearly do not employ the *Treasury* as their primary source, rather depending on commentaries, oral tradition, or most likely other artistic precedents for their details.

The very edge of the cosmos is ringed by the Cakravāḍa (also Cakravāla),[85] a range of iron mountains that poses a different problem for artists in terms of scale. These mountains are just 312.5 *yojanas*[86] in height and width, making their size in relation to the cosmos as a whole difficult to portray in visual media. Estimating that the smallest consistently depictable mark by an average traditional artist might be around half a millimeter (about 0.02 in.) across (although miniaturists can achieve far smaller), this would mean that the minimum size of a scale portrayal of the Meru cosmos would be about 1.9 meters across (6 ft. 4 in.). This is around the size of the largest murals of the Meru cosmos in Tibetan monasteries, and certainly larger than anything that can be drawn in a manuscript. As shown in figure 1.9, the Cakravāḍa mountains are difficult to distinguish even in a digitally generated image printed to the size of this book, as are the outermost ranges of the seven golden mountains.

Even when artists had the chance to depict the cosmos to scale in large paintings or sculptures, however, most images prioritize other sorts of narrative, ritual, or didactic concerns. In these cases, there are strong visual reasons for not making all the elements to scale, such as the need to show important features of the cosmos clearly to the viewer. Like the Cakravāḍa, the four major continents are also nearly imperceptibly small when drawn to scale with the rest of the world (see fig. 1.9), but they are a major focus of attention as the dwelling places of beings. Their typical dimension of about 2,000 *yojanas* on a side is only 2.5 percent the size of Meru and less than 0.2 percent the entire width of the cosmos. Because of the importance of life on these continents, however, they are almost always shown much larger.

Seven golden ranges of mountains immediately surround Meru and create additional confusion in both their scale and their shape. Each range is half the height and width of its interior neighbor (see figs. 1.8 and 1.9), making the most-exterior range only twice the size of the Cakravāḍa. The mountain ranges are separated by oceans



1.9. Plan of the cosmos described in the *Treasury of Abhidharma*

that also decrease in width by half as they iterate to the periphery, matching the width of the mountains they surround. In artwork, these mountain ranges are frequently depicted as circular rings or scattered individual mountains (see fig. I.2 or 4.19, for example), but the text suggests that they are square—albeit in a language that could be the very reason for the confusion as to their shape. Regarding the central ocean that surrounds Meru up to the Yugandhara, the first ring of golden mountains, the *Treasury* describes it as follows (root text in **bold**):

The first [ocean] has 80,000.
In between Sumeru and Yugandhara, the first ocean is 80,000 *yojanas* in breadth. . . .

But across [the ocean] is triple.
The breadth is explained as 80,000 *yojanas*. But across, it becomes triple, counting from the banks of the Yugandhara — 200,000 + 40,000 [=240,000].[87]

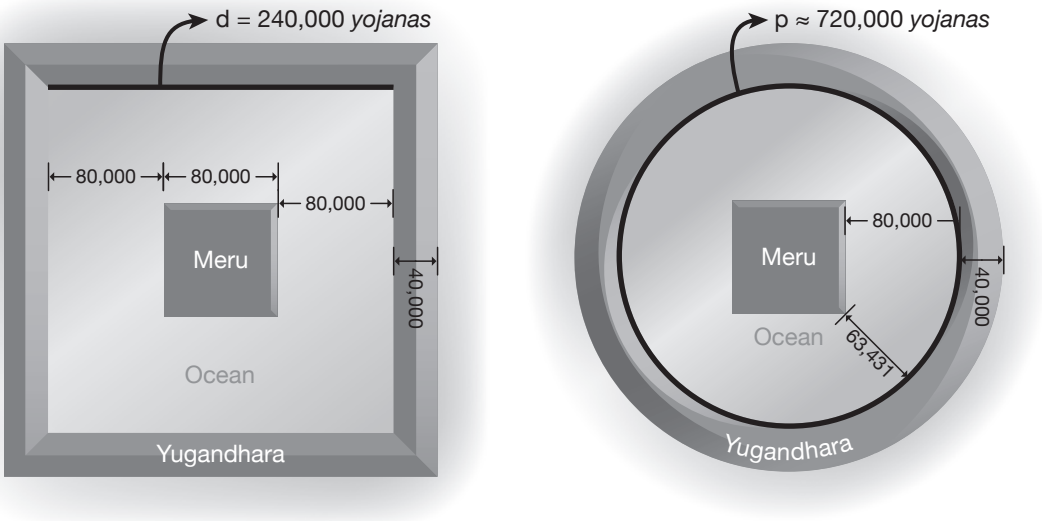
In other words, the breadth between Meru and Yugandhara is 80,000 *yojanas*, but the total length of the ocean between opposite shores of the Yugandhara is triple that, 240,000 *yojanas* (fig. 1.10).[88] The tripling in this calculation is an artifact of Meru having the same width as the ocean, but similar tripling also occurs in calculating the perimeter of a circle (where what we know as π is approximated as 3, and the circumference is equal to π times the diameter). Therefore, it is possible to misinterpret this section as calculating the perimeter of a circular ocean. If this were the case, however, the 80,000-*yojana* width of the ocean would lead to a much greater circumference (see fig. 1.10). This tripling may be one reason why circular mountain ranges often appear in artwork, or the circularity of the mountains may be assumed without reference to the *Treasury* at all. In some examples, artists clearly paid no attention to its descriptions, depicting the so-called seven mountains not as ranges surrounding Meru but as individual, unconnected peaks in the cosmic ocean.

Outside the square ranges of golden mountains, the great salt ocean (where the continents lie) presents a problem of contradiction in the *Treasury* itself. Vasubandhu describes measurements here that do not match the size of the cosmos as a whole given earlier. As he relates:

Outside is the remainder of the great ocean.
. . . As is well known, this is, in width of *yojanas* —
300,000 + 22,000 [=322,000][89]

While Vasubandhu described the cosmos as 1,203,450 *yojanas* across, adding the widths of all the mountains and seas together gives a total diameter that is 1,287.5 *yojanas* greater. The sizes of the other elements are given by a mathematical progression, but the width of the great ocean is simply cited as "well-known" (probably from Vasubandhu's source texts), unfortunately contradicting the rest of the carefully laid-out system.[90]

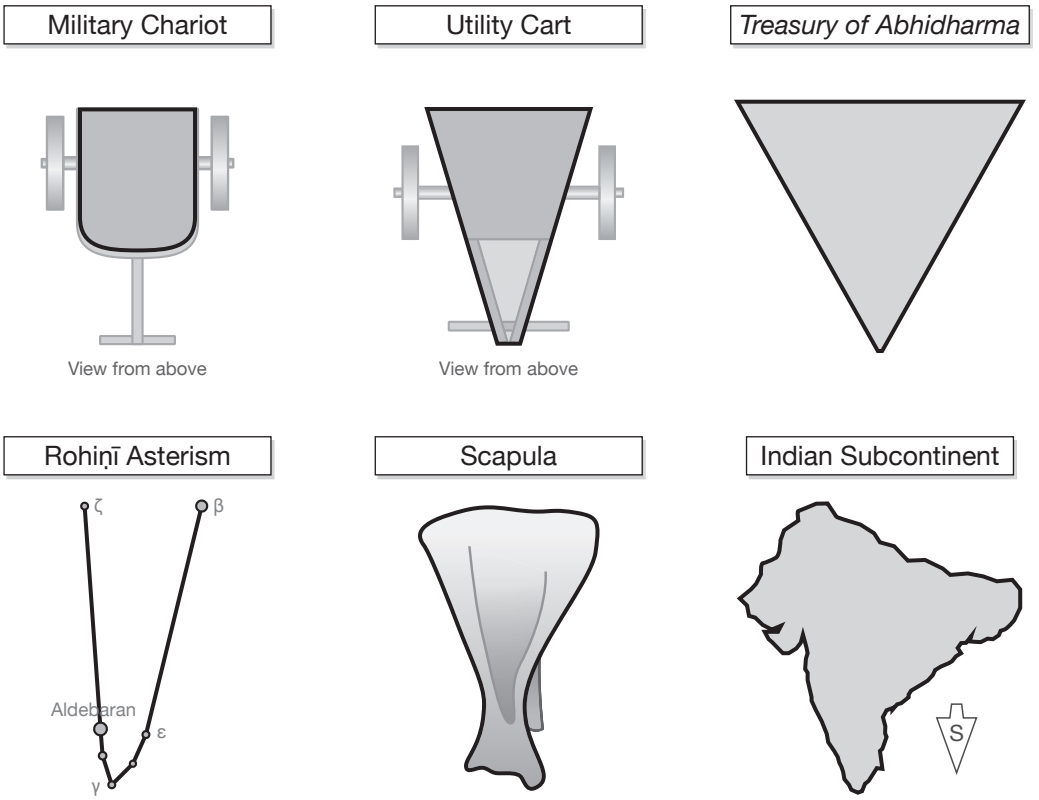
In next describing the four major continents in the great salt ocean, Vasubandhu glosses over details of shape and orientation, leading to diverse representations in later tradition. The continents — respectively Jambudvīpa, Godānīya, (Uttara)Kuru,



1.10. Comparison of measurements of a square or circular ring of mountains against the *Treasury of Abhidharma*

and (Pūrva)Videha—lie in the cardinal directions of south, west, north, and east. Jambudvīpa is described as having the shape of a *śakaṭa*, often translated as "cart," "chariot," or "wedge," with three sides of 2,000 *yojanas* each and one very short side of 3.5 *yojanas*. Several variant ways of understanding this shape are depicted in figure 1.11. One question concerns the type of cart or chariot intended, with the semantic range of the word *śakaṭa* including both military chariots and utility carts. The former might have had a square or rectangular platform, possibly with a rounded front end. Examples of such chariots are depicted in early sculptures (admittedly not precisely from Vasubandhu's milieu) such as on the gateways[91] at Sāñcī stūpa 1. Early sculptures also depict the utility cart, such as in the scene of the donation of Jetavana on the Bhārhut railing in the Indian Museum, Kolkata. Unlike the military chariot, these carts continued in use to the present day, providing more direct evidence of their shape. They are constructed on an A-frame, with a platform mounted above a single axle, generally matching the nearly triangular shape suggested by Vasubandhu's measurements.[92]

As the *Treasury* was transmitted to regions where local cart and chariot shapes differed (if they existed at all), the confusion of Vasubandhu's readers may have increased. In these cases, and for modern scholarship, comparison of the *śakaṭa* shape with persistent natural formations provides important evidence. For one, Sanskrit authors also used the metaphor of the *śakaṭa* to describe the Rohiṇī asterism.[93] This group of stars (also considered part of the constellation Taurus) forms a wedge in the sky that has remained unchanged over the centuries and closely resembles the triangular



1.11. Referents and descriptions of the shape of the southern continent, Jambudvīpa

cart. Rohiṇī may thus be the most reliable referent for the shape of Jambudvīpa, but still others appear in literature as authors grappled with the continent's form. When Buddhist cosmology was transmitted to Tibet, comparison with the scapula became common—probably the scapula of a sheep or goat that fairly mimics the shape of both the cart and Rohiṇī.[94] Because of Jambudvīpa's essentially triangular shape, the continent has also been identified by modern scholars with the actual geography of the Indian subcontinent.[95] Even in early artwork, the short (3.5 *yojana*) side often appears toward the south, effectively making a southward-pointing triangle akin to the Indian subcontinent, although it is not uncommon to see the short side toward the north, as well. No orientation is given in the *Treasury*.[96]

Similar ambiguity occurs with the eastern continent, but not the northern and western ones. Vasubandhu describes eastern Videha as a half-moon (i.e., a semicircle), but also as having four sides, three of 2,000 *yojanas* each and one of 350 *yojanas*. There is no obvious way to rectify the discrepancy between the shape and the measurements given. Artists frequently depict Videha as a semicircle, semi-oval, or rectangle with

two corners rounded into a single arc. Without a description of orientation in the *Treasury*, the curved side can be depicted facing any of the cardinal directions. Western Godānīya and northern Kuru avoid any problems of configuration, being shaped respectively as a circle 2,500 *yojanas* in diameter and a square with 2,000-*yojana* sides and therefore unaffected by orthogonal rotation.[97] In addition to the four major continents, eight smaller continents lie in the intermediate regions. Since the *Treasury* does not specify shapes, sizes, or orientations for these, they can be depicted with the same shapes and orientations as the major continents they neighbor (but smaller) or simply as circles.

After giving some details of the local geography of Jambudvīpa (but far less than the Purāṇic accounts) and proceeding to the hell realms, Vasubandhu's account simultaneously evinces an awkward borrowing from another cosmological system and a sophisticated embellishment of the *Treasury*'s own correlations between the status and location of sentient beings. Rather than placing the hell realms directly below Meru as a reflection of the heavens above, Vasubandhu locates them underneath Jambudvīpa, at great distance from the cosmic center. Such a placement below the human continent may linger from an earlier model in which Jambudvīpa itself lay at the cosmic center (as the circular continent surrounding Meru), in which case the hells would have been in a symmetrical arrangement with the heavens above. This would explain a variety of other thorny details about the model in the *Treasury*, including the fact that the measurements of the hells are significantly bigger than the diameter of Jambudvīpa, inside which they supposedly rest.[98] At the same time, placing the hells away from the center of the universe perfectly expresses a subtle structural theme in the *Treasury*—that the status of sentient beings within the cosmic system correlates to both the altitude and the centrality of their abodes. The *devas* at the center and peak of the cosmos have the most pleasurable realm of birth. Hell beings, as the lowest form of sentient existence, live not only in the most subterranean location but at the outer periphery. Vasubandhu also localizes the other two lowest paths of birth to the outer and lower realms of the cosmos, even while admitting that these beings travel away from their paradigmatic abodes. Animals originate in the great salt ocean and spread to the earth, water, and sky. The king of the *pretas*, Yama, dwells in a palace beneath Jambudvīpa, but *pretas* themselves disperse from that place.

Finished with the peripheral and lower sections of the world, Vasubandhu proceeds back toward the center and up into the sky, first addressing the locations and motions of the sun and moon. These discs, a relatively tiny fifty-one and fifty *yojanas* in diameter, are set on a course of wind that makes them revolve around Meru, held aloft at a height equal to the peaks of the Yugandhara mountains. The diameter of their orbit is not given, with some sources placing them more or less above the continents,[99] and many artistic depictions locating them directly above the Yugandhara peaks or even closer to central Meru. In artwork, the sun and moon are almost always paired

on opposite sides of Meru, but in the *Treasury* (as in reality), they move continuously through space.

This shift from describing the static arrangements of the continents and oceans to describing the dynamic system of the sun and moon poses a slew of problems that are far more complicated than the confusion regarding shape, size, and orientation that we have seen so far. The rising, peaking, and setting of the sun and moon are explained by their orbit around Meru, which occludes them at night. Thus, different times of day are experienced simultaneously in the four continents: "When in northern Kuru it is midnight, at that time in eastern Videha there is the setting of the sun, in [southern] Jambudvīpa it is noon, in [western] Godānīya it is rising."[100] The *Treasury* explains the seasonal lengthening and shortening of days and nights by noting that the circular path of the sun travels to the north and south, causing it to spend more or less time behind Meru. "When the sun goes to the south side of Jambudvīpa, there is an increase of night; when [it] goes to the north, an increase in day."[101] If more of the orbit of the sun is to the south (in the same direction as Jambudvīpa), however, the nights should get shorter, not longer. Commentators have addressed such problems by suggesting further complications to the model, including variations in the speed of the sun over its course. The confusion is only compounded when the *Treasury* travels outside India, where seasonal observations differ. Turning to the changes of the moon, Vasubandhu explains its phases only vaguely:

> **The appearance of the moon is reduced by its own shadow, due to its proximity to the sun.**[102]

Without providing clear geometric logic, Vasubandhu merely cites the teachings of another school, the Prājñaptikas.

Continuing his rhetorical movement inward and upward through the cosmos, Vasubandhu next addresses the details of Meru and the heavens above, once again tying particular beings to specific places and structures:

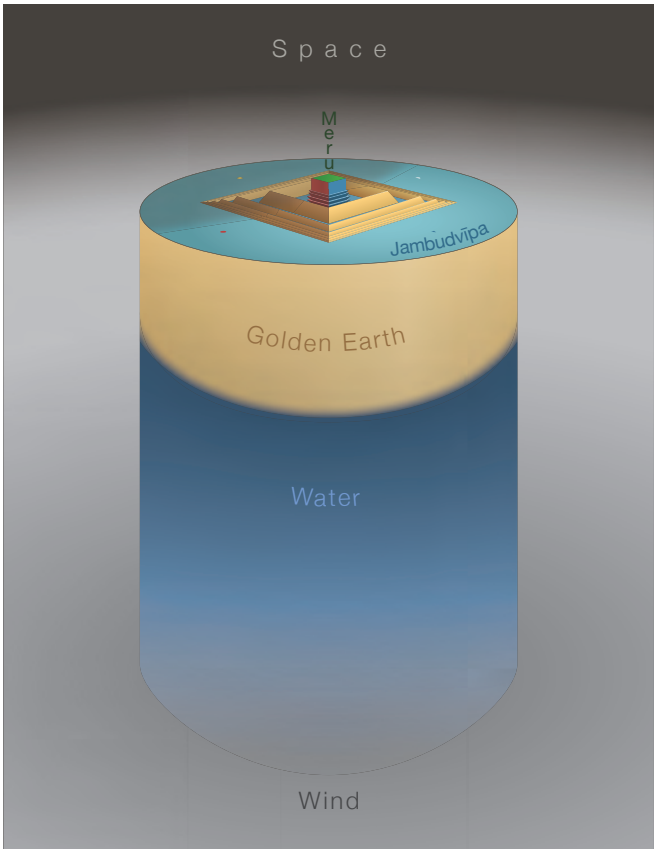
> **[Sumeru] has four terraces, each with an interval [between them] of 10,000 [yojanas].**
>
> . . . With these [terraces], half [the height of] Sumeru is laid down. . . . And they are . . . **extended sixteen, eight, four, and two thousand [*yojanas* out from the faces of Sumeru].**
>
> **. . . On these [dwell] the Vessel-Bearers, the Garland-Holders, the Always-Intoxicated, and the Great Kings.**[103]

These four classes of *devas* are apportioned respectively to the first, second, third, and fourth terraces of Sumeru, each of which is raised 10,000 *yojanas* above the previous

1.12. Detail of figure I.2 showing the four terraces of Meru and their inhabitants. 20th–21st century. Zurmang Shedrup monastery, Sikkim, India

one so that the Great Kings dwell at 40,000 *yojanas* in altitude, half the height of Meru (fig. 1.12). The term "Great Kings" refers especially to four guardian kings that each protect one of the four cardinal directions (clockwise from east): Dhṛtarāṣṭra, Virūḍhaka, Virūpākṣa, and Vaiśravaṇa.[104] These figures reappear repeatedly in other contexts as important indicators of cosmic space. In simplest terms, they represent fundamental principles of Buddhist spatial logic — division into four directional quadrants and separation between center and periphery. Not only do they guard the four quadrants, but because their scope extends from their homes to the edge of the Cakravāḍa, they also represent a conceptual boundary between central Meru and everything that surrounds it.

Proceeding upward again, Vasubandhu completes his discussion of the places and beings of the Desire Realm, the first of the three tiers of the world, by describing heavens atop Meru.[105] Like many of the heavens, the realm of *devas* at Meru's peak is literally named after its inhabitants as the heaven of the Thirty-Three.[106] This number is a cipher for the primary *devas* of the world, led by Indra/Śakra, although the actual list and number of these deities vary between sources. The peak itself is said to be the same



1.13. Perspective view of the geographic cosmos described in the *Treasury of Abhidharma*

width as the base, 80,000 *yojanas* on a side, meaning that the portion of Meru above the ocean is essentially cubical, rather than tapered like a typical mountain — although Vasubandhu does acknowledge an alternative view of 80,000 *yojanas* as the circumference rather than the breadth. In the middle of the peak lies the golden city Sudarśana that houses the palace of Śakra.[107] Although four additional heavens that rise above the level of the Thirty-Three are included within the Desire Realm, this first tier of the cosmos is essentially equivalent to the physical and geographic cosmos (fig. 1.13).

The remaining Realms of Form and Formlessness comprise increasingly ethereal heavens about which less and less physical detail can be articulated and that therefore also appear somewhat less frequently in artwork (except for depictions that emphasize the *abhidharma* cosmology [see figs. 2.2, 4.23, 4.27, 4.44, and 4.45]). These heavens progress upward from the levels immediately above Meru in a way that is "not easy to calculate"[108] but is essentially exponential:

> **As much [distance] as there is from one place downward, so much [distance] there is from there upward [to the next higher place].** [109]

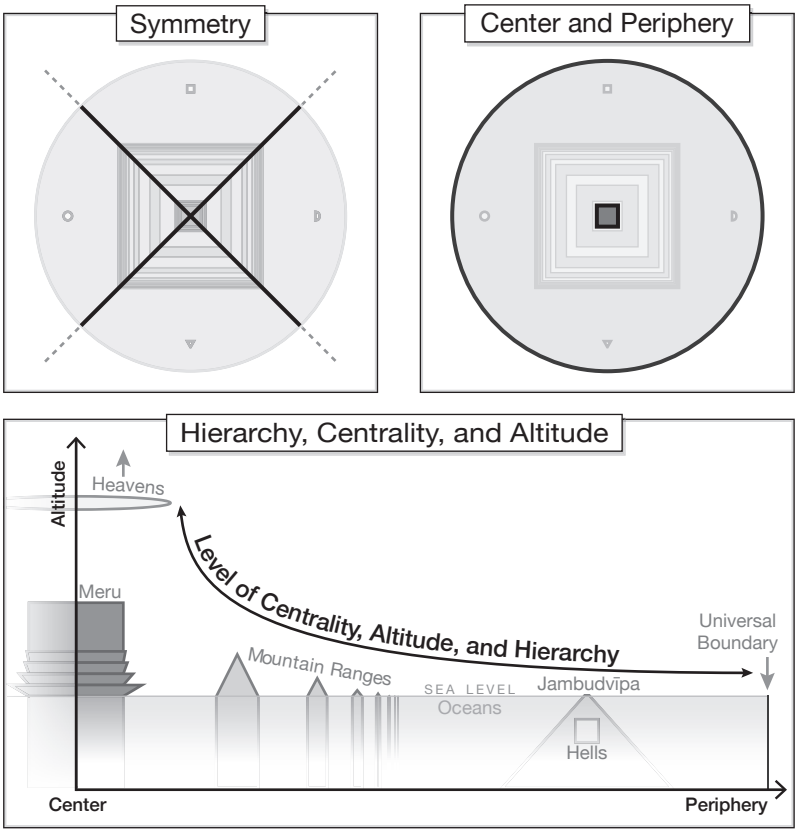
In other words, the distance between one heaven and the next one above it is equal to the distance between the first and the surface of the earth. As the terrace of the Great Kings is 40,000 *yojanas* above the earth, so the next level up, the heaven of the Thirty-Three, rests 40,000 *yojanas* above it. The heaven of the Thirty-Three is thus 80,000 *yojanas* high, and the next heaven, of the Yāmas, lies at 160,000 *yojanas*.

The uppermost heaven of this system, Akaniṣṭha (which figures importantly in chap. 2), rises a full 167,772,160,000 *yojanas* above the surface of the earth, and there is nothing higher. The lateral dimensions of these incredibly elevated heavens are a matter of disagreement, with some saying they extend the same breadth as the summit of Meru and others claiming they surpass the diameter of the physical cosmos (possibly causing a problem of overlap if one considers neighboring cosmoses). Once again connecting geography and biology, Vasubandhu notes that the sizes of the beings that dwell in the various realms increase along with the dimensions of the realms themselves.[110]

Continuing the theme of exponential increase, multiple cosmoses are grouped into world-systems by factors of one thousand, creating vast multiverses that figure prominently in hyperbolic literary analogies. A group of one thousand Cakravāḍa worlds is called a "small thousand world-system."[111] One thousand of those is a "medium double-thousand world-system." One thousand of those (1,000,000,000 Cakravāḍa world-systems) is a "triple-thousand-great-thousand world-system." This last and largest is a classic unit of measurement that expresses enormity in many contexts, including offering rituals.

The last major theme of Vasubandhu's chapter on the world is time, which also carries close relationships to the types and locations of sentient beings. In general, *devas* live much longer than humans, and hell beings live that much longer than *devas*, such that their torments must seem interminable. The passage of time also differs between realms. For example, the hell beings of Saṃjīva have, "like the [four Great Kings], a life of five hundred years of twelve months of thirty days; but each of these days has the length of the total lifespan of the [four Great Kings]," whose own lives in turn are made up of days that last "fifty human days."[112] In Jambudvīpa, the life spans of beings also change depending on when they live during the cosmic cycle of the creation and destruction of the universe. This cosmic cycle is described in some detail but rarely depicted in artwork.[113] Instead, most images of the cosmos show the static, physical geography.

Through the hierarchical organization of the beings and locations of the universe, the cycles of cosmic time also correspond to deconstructive and constructive processes of meditation. Destruction of the world begins with the hells, after beings cease to be reborn there (beings whose actions require them to be born in hells are relocated to the hells of another cosmos). Then animals and *pretas* disappear, as do their realms. Humans and *devas* both begin to reach meditative attainments that promote them to higher stages of birth in the cosmos, whereupon their depopulated realms also



1.14. Structural principles of the *Treasury of Abhidharma* cosmology

disappear — no realm of the cosmos has cause to exist without its defined inhabitants. When all the actions of beings in the world are exhausted, the world itself is destroyed. The progression here clearly matches the cessation of action and release from the world sought in individual meditative practice. Because cosmic time is cyclical, however, the world arises anew. It begins with the coalescing of wind into a giant disc, inside which water condenses and precipitates into a layer of golden earth, and so on. Beings repopulate the realms in the reverse order in which they disappeared from the previous cosmos.[114] The ascending creation of the world through these elemental layers becomes a basis of purificatory meditation.

Indeed, such basic features of the cosmos are fundamental to the paradigms of numerous rituals and visual representations. Figure 1.14 summarizes three structural principles that commonly reappear. To begin, the cosmos is symmetrically divided into four quadrants in the cardinal directions. The only remarkable visual differences between the quadrants are the colors of Meru's sides and the shapes of the continents. Furthermore, there is a diametric opposition between the center and the periphery. The center is where the *devas* and higher beings dwell, while the periphery is the realm of humans and hell beings below them. The outermost periphery is girded by

the Cakravāḍa mountains, a boundary so significant that its name also applies to the entire world-system. The linear progression of sizes of mountains from the center to the periphery also suggests an essential hierarchy to the cosmic space. Motion inward toward the center implies motion upward toward the heavens of the *devas*; indeed, the removal of hell beings to the periphery makes this pattern consistent. These are not the only significant structural principles of the cosmos — one could also add the tripartite division into vertical tiers evinced in the three realms, for example — but they are the defining characteristics of the geographic Desire Realm that concerns us. The landscape of this geography, with its principles of symmetry, centrality, and hierarchy, informs all the other cosmologies in this book.

At the same time, many of the details of Vasubandhu's cosmological model cannot directly translate to other circumstances. Because he is interested primarily in causal explanations and states of being, Vasubandhu omits or obscures descriptions that would serve ritual and visual depictions, such as the colors, shapes, and orientations of the continents. The cosmology of the *Treasury* is a particular instance of cosmological thinking that makes sense only within Vasubandhu's larger project, just as the cosmologies of the other textual sources uniquely fit into their own contexts. While the *Treasury* may be cited by later authors, ritualists, and artists as the ultimate source of their cosmological traditions, other examples of cosmological thinking diverge significantly from Vasubandhu's scope.

The Wheel of Time: A Ritualized Cosmology

Originating in the eleventh century in India,[115] the Buddhist Wheel of Time corpus borrows from Vasubandhu, Jain texts, and other sources, radically recasting the cosmos as a basis for ritual performance and meditative purification leading to enlightenment. Although the supposed root text of the Wheel of Time has not survived,[116] many of the details are known from other eleventh-century texts,[117] such as the *Abridged Wheel of Time Tantra*[118] and the commentary on it, *Stainless Light*.[119] Since the tradition lacks its own purported source and its teachings are complex, scholars generally rely heavily on such commentaries, understanding the tradition as based in a corpus rather than a single text. In this regard, the fifteenth-century commentary *Ornament of Stainless Light*[120] by Khedrup Norsang Gyatso[121] and a nineteenth-century treatment by Jamgon Kongtrul Lodro Taye[122] in his *Encyclopedia of Knowledge*[123] are also especially helpful.

The Wheel of Time system seeks to present a kind of grand unified theory of Buddhist science, philosophy, and practice with the explicit goal of providing a means for enlightenment. By articulating parallel accounts of the fundamental elements, the cosmos, the human body, and other subjects,[124] the Wheel of Time establishes a unifying logic for all knowledge that also suggests powerfully overlapping symbolism. For example, the physical body of the practitioner becomes a microcosm of the universe:

"Here in the body, earth is firmness, water is fluidity, fire is heat, and wind is swiftness because it causes contraction and expansion. A bodily aperture is space. A hard bone, or the backbone that extends from the hips up to the shoulders, is Mt. Meru, the best among the immortal mountains. . . . The heavenly bodies, or [the ten] planets, beginning with the sun, and so on, are the ten types of bodily apertures."[125]

These kinds of parallel explanations are divided into three basic categories[126] in a classificatory system that is unique to the Wheel of Time and reveals its prioritization of soteriology.[127] The Outer Wheel of Time deals with the physical world, including geography and the cycles of time. The Inner Wheel of Time deals with the human body, including the subtle body that is used in yoga.[128] Together, the Outer and the Inner Wheel of Time describe the foundations for purifying the practitioner through meditation. The third analysis, the Other or Alternative Wheel of Time, describes the method of purification, including generation- and completion-stage meditations.[129] This overall structure reveals that even the geometry of the world in the Outer Wheel of Time is little more than a foundation for tantric meditation: "The reasons [for concentrating on the presentation of the dimensions of this world] . . . are firstly to bring about correspondence between the inner world of the practitioner's body and the outer world, which form the two bases for purification in the deity mandala meditation, and secondly to bring about correspondence between these two bases of purification and the mandala itself, which is the actual purifier."[130]

The complete unification of microcosm (body) and macrocosm (world) for the goal of purification results in a cosmology that is so radically different from other traditions that its variance must be justified. *Stainless Light* explains one reason why the Wheel of Time contradicts the well-known *Treasury*: "[Various] measurements of the cosmos are taught, and appear, to sentient beings from the point of view of worldly phenomenal (truth), in accordance with the dispositions of sentient beings who have various inclinations. . . . Ultimately, the cosmos does not have measure and altitude, [because they appear variously] in accordance with the merits and sins of sentient beings."[131] While Vasubandhu presented a physical world generated by the actions of beings, the Wheel of Time describes a cosmos that is nothing more than illusory perceptions determined by the propensities of the individuals who experience it. Agreement between individuals on one particular description results from psychological similarities among groups.[132] The inherent subjectivity of cosmology also explains why the omniscient Buddha could seem to teach conflicting measurements for the cosmos in different contexts: "Do not make this mistake with regard to the measurements here: 'Since the [Buddha] said [in the view of the *Treasury*] that the measurement [of the] cosmos is [3,610,350 *yojanas* in circumference], how can the cosmos [in the Wheel of Time] measure [400,000 *yojanas*] (in diameter) [and 1,200,000 in circumference]? Isn't the [Buddha] a liar here?' Some will think [that he is a liar], (but) [scholars] should not accept that statement; [he did not state the measurement as a result of having measured it but] due to the dispositions of sentient beings."[133] The Buddha accommodates

1.15. Perspective view of the cosmos described in the Wheel of Time

his audience by teaching measurements that are appropriate to their perceptions and abilities.[134] Despite the apparent subjectivity of cosmological description, however, commentators spend considerable effort trying to reconcile differences between the Wheel of Time and the *Treasury*.

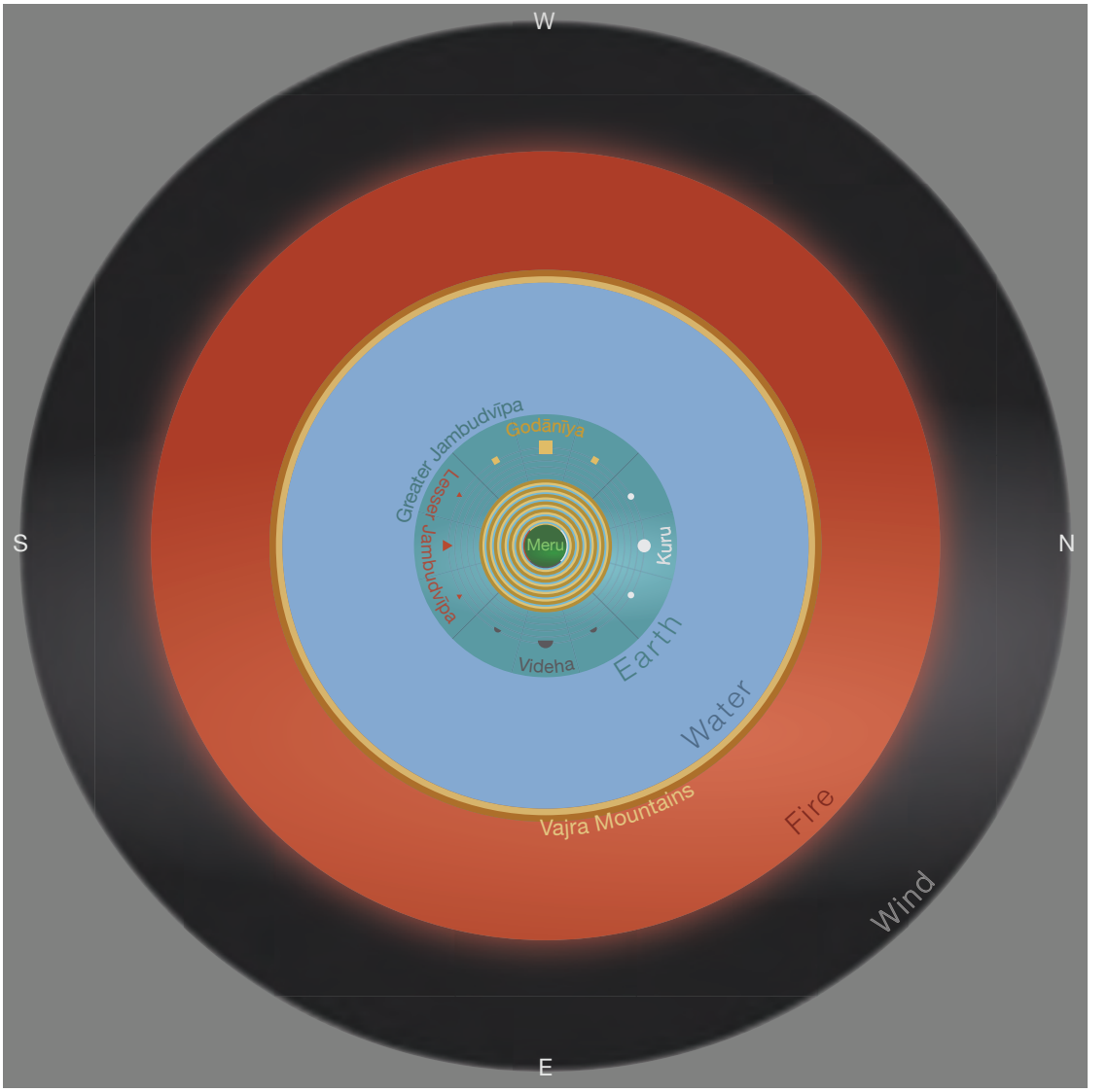
The Wheel of Time's unique emphasis on parallel analysis as a foundation for transformation clearly determines many essential features of its model. As in the five-colored Meru, the Wheel of Time cosmos closely comports with the natural elements of space, wind, fire, water, and earth that form the basis of tantric practice. These same five elements also make up the substrata on which the surface of the earth rests (fig. 1.15). Within the empty element of space lies a maṇḍala of wind 50,000 *yojanas* high and 400,000 *yojanas* in diameter. Above this are concentric, elemental maṇḍalas of fire, water, and earth, each the same height but decreasing in diameter by 100,000 *yojanas* each. As in the *Treasury*, each region of space also contains a specific type of being. Stacked within the four elemental maṇḍalas are eight abodes, each 25,000 *yojanas* high, containing hell beings (in the bottom seven) and *asuras* and *nāgas*[135] (in the upper and lower halves of the eighth).[136]

The Wheel of Time cosmos and the human body correspond not only in their elemental composition but also in their proportional measurements. The four elemental maṇḍalas below the surface of the earth, which take up half the height of the cosmos (200,000 out of 400,000 *yojanas*), compare to the human figure below the waist.[137] Meru rises from the center of the earth maṇḍala and represents the spine in the human body. Its height of 100,000 *yojanas* corresponds to the length of the spine at one cubit. Above Meru for another 100,000 *yojanas* are the (slightly less proportional) "neck" (25,000 *yojanas*), "face" (50,000 *yojanas*), and "crown" (25,000 *yojanas*) of the cosmic body, the Form and Formless Realms. The total height of this universe is 400,000 *yojanas*, the same as its width, much as the height of a human figure approximates the distance between its outstretched fingertips. In simplifying the dimensions of the cosmos (and the body) to these easily divisible measurements, the Wheel of Time restructures the world so as to create precise correspondences between its Outer and Inner levels of description.[138]

INTEGRATING SYSTEMS: COMPLEXITY AND CONTRADICTION

Despite the straightforward nature of these particular correspondences, the continued layering of such relationships creates overwhelming complexity to the point of self-contradiction, making both interpretation and depiction problematic. One example of how the integration of multiple systems in the Wheel of Time obscures its cosmological thinking is its adoption of the central, circular Jambudvīpa and hells of the Jain system, which contradicts simultaneous notions of a peripheral Jambudvīpa and surrounding oceans (as seen in the *Treasury*) and thereby creates confusion about the locations and sizes of the oceans, continents, and even the elemental substrata of the world. Another such example is the famous ten-syllable mantra of the Wheel of Time system, which, even though diagrammed as a cosmological model, does not admit a single, coherent interpretation.

The Wheel of Time cosmology borrows heavily from Jain sources,[139] which places it in direct conflict with other features of its own model that are more in line with the *Treasury*. In the Wheel of Time, Meru and its immediately surrounding rings of mountains and oceans, each the same height and width, rather than progressively smaller,[140] sit at the center of an enormous, circular Jambudvīpa that extends to the edge of the earth maṇḍala. This Greater Jambudvīpa contains twelve smaller continents reminiscent of the *Treasury* system, with the southern one distinguished as Lesser Jambudvīpa (fig. 1.16). Commentators address this problem of continents within continents by claiming that the shapes given for the smaller landmasses are actually the outlines of regions, or perhaps marks that appear in those lands, or that the shaped continents are surrounded by seas connecting to a great outer ocean, with the underlying seafloor considered to be Greater Jambudvīpa.[141] Unfortunately, these seas cannot easily connect to the outer ocean of the water maṇḍala. The vertically stacked abodes



1.16. Plan of the cosmos described in the Wheel of Time

in the four elemental sublayers place the water maṇḍala 50,000 *yojanas* below the surface of Greater Jambudvīpa. Some commentators solve this problem by suggesting that the air, fire, and water maṇḍalas, though described as stacked discs, must extend upward to the level of the earth in areas where they are not blocked by the maṇḍala above, just as flames and winds are known to spread upward. This brings the great salt ocean and its encircling Vajra mountains (akin to the Cakravāla) into accord with the expected planar view of the world.

Despite the difficulties posed by such rigid stacking, the same basic principle applies to a second example, a vertically arranged series of graphemes known as the All Powerful Ten[142] mantra (fig. 1.17) that implicitly depicts the cosmic hierarchy.[143] In this image, single seed[144] syllables stand for the basic elements of the cosmos according to their vertical arrangement in space — where in normal writing they would appear from left to right:

> Here is the birthplace of the mantras: from moon, [*bindu*]; from sun, *visarga*; from the space element, A; from the wind element, I; from the fire element, Ṛ; from the water element, U; from the earth element, Ḷ; from the inanimate element [Meru], the consonant MA; from the animate element [the desire and form realms], the consonant KṢA; and from the formless realm, the consonant HA. These mantra words should be placed in the reverse order [i.e., in an ascending sequence].
>
> Then, the former consonant goes on top of the latter consonant. The letter Ḷ and so forth become semivowels because it says: "*iko yaṇaci*";[145] the letter A is joined to the end of them. *Visarga* is shaped like a half moon. *Bindu* is a circle. Gnosis is shaped like a crest.[146]

The ten elements of the mantra are described in the first paragraph: *bindu* (*anusvāra*), *visarga*,[147] A, I, Ṛ, U, Ḷ, MA, KṢA, HA. The second paragraph describes how these elements change in order to appear graphically in the All Powerful Ten. Since the A vowel is considered to be part of the other syllables, it is not shown. It does produce phonetic changes in the other seeds that are pure vowels (see n. 145), which leads to their being written as semivowels with a subsequent A. Gnosis appears at the end, not as one of the ten or part of the cosmology, but as an additional, eleventh element of the mantra diagram.

While interpretations of the ten-syllable diagram vary widely, the seed syllables of the mantra are essentially stacked vertically to match the arrangement of elements and realms in physical geography. The rightmost column of the table in figure 1.18 (bold outline) shows the exact same vertical arrangement of realms as in the cosmic model (except the altitude of the sun and moon). Cementing this cosmological identification, the syllable "ma" even splits into five colors just as Meru appears in the five directions (the four cardinal directions and the center). The two elements above Meru, the lotus and deities, appear as central elements of deity-maṇḍala cosmology.[148]

Of course, it would not be the Wheel of Time if these syllables, colors, and elements did not also correspond with the anatomical body, the subtle body, and numerous other systems of analysis, obfuscating any single, clear interpretation. These overlapping layers of linguistic symbolism, cosmic hierarchy, and elemental transformation make even the simplest parsing of the diagram impossible, such as distinguishing the

1.17. Mantra of the Wheel of Time

	Letter and Color	Sound	Element	Realm
(11)			gnosis	awareness
10		*anusvāra* (nasal continuation)	moon	moon
9		*visarga* (unvoiced continuation)	sun	sun
8		ha	formless	Formless Realm (gods)
7		kṣa	animate	Desire and Form Realms (lotus)
6		ma	inanimate	Meru
5		la	earth	earth maṇḍala
4		va	water	water maṇḍala
3		ra	fire	fire maṇḍala
2		ya	wind	wind maṇḍala
1	[not shown]	a [inherent]	space	space

1.18. Items in the Wheel of Time mantra

sun from the moon or identifying the ten items intended. In the image, a crescent shape represents the sun and a circle the moon, reversing a nearly universal graphic convention.[149] Further, the ten elements depicted are not the ten sounds, with the inherent A vowel assimilated into other syllables and the unpronounced gnosis crest added. Though the simple diagrammatic structure of the mantra image could clarify the complex details of the cosmological model, its overlapping systems of symbolism produce the opposite result.

For such reasons, the Wheel of Time is one of the most challenging systems of thought in Himalayan Buddhism. While Vasubandhu's *Treasury of Abhidharma* is a standard part of monastic curriculum in Tibet and rather accessible to a literate monk,[150] the Wheel of Time is abstruse and rarely studied.[151] At the same time, it is also widely understood as particularly efficacious, with the Dalai Lama often granting large, public initiations.[152] Despite such popularity, the cosmology of the Wheel of Time did not displace the *abhidharma* model in art and ritual. Neither, however, is the *Treasury* an unproblematic source for instances of cosmological imagery in other contexts that do not precisely match its quirks and agenda. We must continue to look at other examples to see the variety of cosmic expressions in the Himalayan Buddhist world.

Cosmology in Other Literature

Although systematic treatises express cosmology most directly, other types of Buddhist literature express independent cosmological thinking. These formulations can strongly influence visual depictions and cosmology in other contexts. Episodes from the life of the Buddha, for example, were so popular in both art and literature that some were undoubtedly better known than the systematic cosmologies. These narrative examples also show how one particular way of thinking about the cosmos can appear outside a comprehensive view in order to serve narrative or rhetorical functions. The three cases presented here relate to, respectively, the immensity and stability of Meru, the division of space into directions, and cosmic scale as a measure of spiritual attainment. The first two examples come from *Extensive Play*,[153] a popular biography of the Buddha that inspires readers with Mahāyāna notions of enlightenment. The third comes from a collection of stories known as *The Wise and the Foolish*.[154]

To begin, comparisons with Mount Meru's unique size and stability within the cosmic system highlight the unexcelled nature of the Buddha's accomplishments. For example, in a passage in which the prince who is to become the Buddha decides to leave home to seek awakening, he states:

> Listen, Chandaka, to my resolve,
> poised for the salvation of souls and (their) welfare,
> unshakeable, unbreakable, firm
> and unmoving as Lord Meru.[155]

As in the four-petaled-lotus Purāṇic model of the cosmos, with smaller mountains anchoring the continents to the stable center, here Meru is immovable by definition. A related metaphor suggestively transgresses Meru's absolute immobility:

> Someone could, having uprooted great Meru, hold it in the sky,
> but no one can draw up the "Meru" [i.e., the great mountain] of the qualities of a Jina (Buddha), [which is] heavy with rocks, a refuge for those with knowledge of virtue.[156]

In other words, the Buddha's virtues outweigh the largest physical object in the universe. Such overpowering of Meru's near-perfect stability appears again when the mountain moves of its own accord to show respect to the Buddha's place of enlightenment: "And even all the mountains in this triple-thousand-great-thousand world-system, with Sumeru foremost, bowed to the seat of awakening."[157] All these examples derive their literary power from the fact that Meru, under ordinary circumstances, is the most stable and sizable object in the universe. The surpassing of these qualities by the enlightenment of the Buddha restructures the cosmic order around his person.

Such metaphors do more than extol the Buddha, however, and a passage comparing demonic weapons to Meru results in artistic depictions that illustrate further assumptions about Meru's role in the universe. In the scene in which Māra's demons attack the bodhisattva as he is about to become enlightened, the Sanskrit edition compares the size of the demon's weapons to Meru: "[Māra], having turned back once more with his followers, loosed manifold weapons and mountains the measure of Sumeru upon the bodhisattva."[158] The Tibetan version from the Derge[159] canon, however, inserts a passage describing the individual weapons quite literally: "One [demon] holds Mount Meru in his hand."[160] This line has become a popular subject in paintings of the Buddha's defeat of Māra. Figure 1.19 shows three modern Tibetan treatments of this subject,[161] in which the artists depicted the weaponized Sumeru surrounded by additional cosmic geography, including Śakra's palace, the cosmic ocean, the Cakravāla mountains, and sometimes even the twelve continents and seven rings of golden mountains. Whether the literary reference to Meru serves as a synecdoche for the entire cosmos (in the same way that the word "Cakravāla" can also refer to the entire universe) or the artists visually identified the mountain by placing it in context, Meru stands irrevocably interrelated to its cosmic surroundings.

On a purely visual level, these images also suggest that the demons might wield entire universes (not just Meru) as weapons, extending the logic by which immensity metaphors operate in text. While authors cite Meru as the greatest physical object in the universe, artists have recourse to the Cakravāla cosmos as the largest coherently depictable single object in Buddhist iconography.[162] Imagery of the Cakravāla cosmos here performs exactly the same function as the invocation of Meru in text, comparing the demon's weapon to the largest object in the vocabulary of the medium.

1.19. Examples of the Cakravāla cosmos being used as a weapon by Māra's demons. 20th–21st centuries. Left to right: Duidul Jyangchub monastery (T: bDud 'dul byang chub chos gling), Ganden Phelgay monastery, and Shechen Tennyi Dargyeling (T: sNga 'gyur ring lugs rgyal ba zhe chen pa), Bodh Gayā, India

The second example from the life of the Buddha similarly uses the division of the cosmos into four cardinal directions and three vertical tiers as a way of communicating the Buddha's status in the world, providing a simplified alternative to the complex spatial hierarchies in sources like the *Treasury*. After the Buddha's awakening, the four Great Kings offer him four begging bowls, which he accepts and fuses into a single bowl. Ostensibly, the Buddha performs this magical action out of a desire not to offend the other three kings by accepting a bowl from only one: "Four stone vessels are not appropriate for me. But if I will take from one, three would be dejected. So, having accepted these four vessels, I will transform them into one vessel."[163] Despite the modesty of this claim, such a gift from the kings of the four cardinal directions suggests a bestowal of allegiance to the Buddha from the four quadrants of the universe.[164] His fusing of the four bowls into one thus represents his unifying the quarters of the world under the single authority of his enlightenment.

One can also interpret the scenes before and after the four Great Kings present their gifts as representing the Buddha taking command of the universe vertically, as well as horizontally. Just before the kings offer their bowls, *nāga* kings from the four quarters appear and protect the Buddha from heavy rains with their hoods, indicating deference from their underworld domains.[165] Soon after the presentation from the four Great Kings, the *devas* of the heavens approach the Buddha to acknowledge his supreme wisdom and ask him to teach.[166] While these scenes admittedly unfold across two chapters that contain numerous other scenes, the overall structure suggests the Buddha progressively taking command of all directions of space: below, in the four horizontal directions, and above. This simple arrangement reveals a common alternative conception of space as defined by directions relative to the center (here, the Buddha), in contrast to the abstract hierarchy of numerous hells and heavens in the scholastic systems.

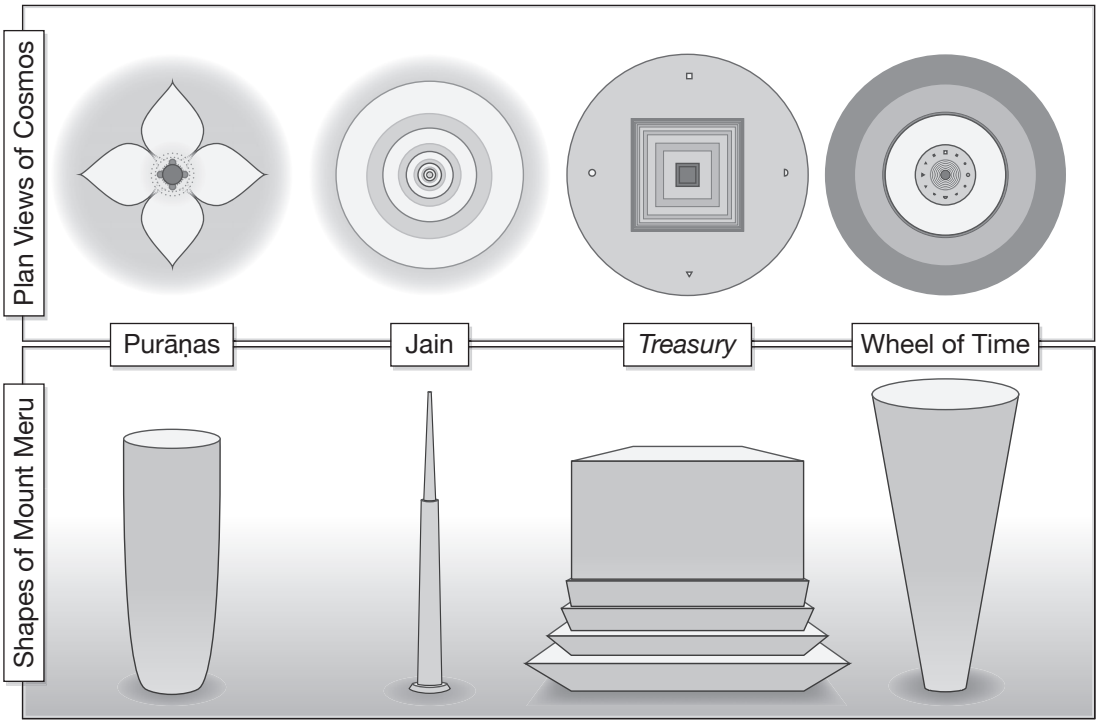
The third example illustrates the cosmic stature of the Buddha more directly by having him literally extend himself to the height of the heavens and the size of the universe. He performs these miraculous feats over several days in the city of Śrāvastī in order to overcome the false views of a group of heretical teachers. On each day, someone makes an offering to the Buddha, and in response he performs a miracle that expresses his power. On the ninth day, the four Great Kings make an offering, after which "the great assembly saw the Lord's body extend to the realm of the [Great Kings] and fill all space as far as the extreme limits of the [*sic*] Samsara. From it, there streamed a great light and the people saw and heard the Dharma, rejoiced and believed, and attained blessings."[167] It cannot be a coincidence that the gift of the four Great Kings prompts the Buddha to extend himself and his teachings in all directions of the world, much in the same way that he takes command of the directions in *Extensive Play*. A similar miracle, likewise attuned to the particular donor, occurs on the eighth day when Brahmā makes an offering and the Buddha projects "a beam of clear light as far as the realm of Brahmā (the Brahmā heaven)."[168] In fact, there is some thematic overlap between these two episodes, since the latter can also be interpreted as the Buddha extending his body to Brahmā heaven,[169] taking command of the vertical axis in bodily form just as he does the four directions.

Due to the association of these miracles with Tsongkhapa's[170] Great Prayer Festival[171] in Tibet, these stories have become popular subjects in visual artwork. Since both the eighth- and ninth-day miracles involve the Buddha extending his body through cosmic space, they are often depicted similarly, with the Buddha seated or standing directly in front of Mount Meru, rising to about the same height in the picture plane (figs. 1.20 and 1.21; in both images, the blue face of terraced Meru appears directly behind the Buddha's circular halo, with layers of heavenly abodes rising in clouds above his head). Once again, there is a visual metonymy between Meru and the cosmos as a whole, with the Buddha's filling of the universe depicted as a visual overlap with central Meru. In both image and text, the Buddha's extension of his body through space actively demonstrates the same dominance of the universe that is only passively illustrated by the gift of the four bowls in *Extensive Play*.

These three examples from the life of the Buddha show that even relatively simple literary topoi reveal deep cosmological thinking. While this literary cosmology does not explicitly contradict the systematic cosmologies, it is not identical either. Where systematic cosmologies might name and define the cosmos through its boundary at the Cakravāla, the literary examples employ central Meru as its determining feature. Such a conceptual overlap between Meru and the cosmos becomes particularly apparent in the visual examples of the attack of Māra's demons and the miracles at Śrāvasti, in which cosmos and Meru stand in for each other. The literary examples also illustrate alternative ways of thinking about spatial structure and hierarchy, such as an emphasis on the Buddha at the center of six relative directions rather than in a hierarchy of numerous heavens, hells, and regions of earth. These examples further demonstrate

1.20. Scene of one of the Buddha's miracles at Śrāvastī, with an offering by Brahmā (golden-skinned figure on bottom left). 19th century. Erdene Zuu, Mongolia

1.21. Scene of one of the Buddha's miracles at Śrāvastī, with an offering by the four Great Kings (red-, blue-, yellow-, and white-skinned figures at bottom right). 19th century. Erdene Zuu, Mongolia



1.22. Variations in the shape of the cosmos and Meru in four Indic traditions. Left to right: the Purāṇas, Jainism, the *Treasury of Abhidharma*, and the Wheel of Time. Top row: plan views of the cosmos. Bottom row: shapes of the central cosmic mountain

the rhetorical use of specific cosmological ideas to reveal the new world order imposed by the Buddha's awakening, in which the cosmos itself becomes smaller and less imposing in relation to the accomplishment of an enlightened being.

Conclusion

Physical geography can be put to diverse uses in textual sources of cosmology. Like the three different accounts of the composition of Meru that begin this chapter, cosmology changes in service to its context. These adaptations take place at all levels of description, from the basic directions that divide space to the details of specific beings who dwell in each realm. From the elemental composition of the substrata of the world to the orbital paths of astral bodies, each detail holds potential significance in the larger projects in which cosmological thinking occurs.

While certain structures seem common to all the Indic models, such as a vertical hierarchy and a division between center and periphery, these similarities should not obscure the important differences that underlie the various articulations (fig. 1.22). To a modern reader, the decision as to whether the diameter of a(n obviously erroneous)

disc-shaped world is 1,203,450 or 400,000 *yojanas* might seem entirely arbitrary, but in context, these numbers are dramatically significant. The first number, in that it conflicts with the sum of measurements given for all the separate pieces of the cosmos in the *Treasury*, gives us some sense of the sources Vasubandhu may have drawn on for the dimensions of his model. The second, because it is a rounded number and identical to the height of the cosmos in the Wheel of Time, allows ritual correspondences between the world and the human body that serve soteriology. While such cosmological accounts undoubtedly draw on related textual precedents and frequently claim consistency with broadly accepted knowledge of the world, even such minor changes to a description matter.

With the importance of comparative cosmology established through examination of textual sources, it becomes obvious that similar differences in description and function must exist in other expressions of cosmology as well. Although traditions of ritual and image-making sometimes cite the texts investigated in this chapter, these textual descriptions often fail to withstand comparison against representations in other forms. Rather, Buddhist cosmological thought is equally informed by unsystematic texts, rituals, and visual art. Depictions of the cosmos in the deity maṇḍala, ritual offerings, and murals also adapt to unique roles, with unique cosmological processes even enforcing the efficacy of specific ritual transformations. Because these rituals are performed and instantiated in material culture, it is vital to study artwork and practice along with textual sources.

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