“In this book, anthropologist Michael Kolb productively explores the cultural and communicative roles of the built environment. Systematic without being deductive, thematic without universalizing, the author guides the reader through detailed analyses of case studies to illustrate and explain how monumental architecture constructs and communicates content. Not limited to how humans think about their environments, Kolb also skillfully demonstrates how embodied experience is intrinsic to ‘making sense’ of places, and their significance. The result is an ambitious book that makes important contributions to studies on the multifarious meanings materialized by the built environment.”

**Thomas Barrie**, AIA, DPACSA, Professor of Architecture, NC State University, USA

“Monuments bulk large in archaeology. In this book, Michael Kolb offers a very new approach to thinking about them, combining insights drawn from cognitive science, phenomenology, and cultural theory with his own hands-on archaeological experience in both the New and Old Worlds. You will never look at a monument in quite the same way again.”

**Ian Morris**, Professor, Stanford University, USA
Making Sense of Monuments

Stonehenge, Machu Picchu, Confederate statues, Egyptian pyramids, and medieval cathedrals: these are some of the places that are the subject of Making Sense of Monuments, an analysis of how the built environment molds human experiences and perceptions via bodily comparison. Drawing from recent research in cognitive neuroscience, psychology, and semiotics, Michael J. Kolb explores the mechanics of the mind, the material world, and the spatialization process of monumental architecture. Three distinct spatial-cognitive metaphors—time, movement, and scale—comprise strands of knowledge that, when interwoven, create embodied contours of meaning around how humans interact with monumental spaces. Comprehensive, lucidly written, and thoroughly illustrated, Making Sense of Monuments is a vibrant, extraordinary journey of the monuments we have constructed and inhabited.

Michael J. Kolb is Professor of Anthropology at Metropolitan State University of Denver, and Presidential Teaching Professor Emeritus at Northern Illinois University. His scholarship focuses on the political economy of emerging societies, and he has conducted field research around the world. He has examined the energetics of monumental building for 30 years in both the Pacific and the Mediterranean.
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Making Sense of Monuments
Narratives of Time, Movement, and Scale

Michael J. Kolb
To Rajah, my biggest fan; to George Loss, who put me back together again; not forgetting of course Jane, Pumpkin, Pooter, or the Samster.
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This book is about monumentality and, more specifically, the cultural structures that arise when a monument is conceptualized, constructed, and utilized. These structures—referred to here as the spatial-cognitive metaphors of time, movement, and scale—comprise the focal points of this work as I ask: how do we derive meaning from material objects? How can we learn from the past? Monuments are seen in this work as a single medium of material culture, all those things that humans construct, acquire, utilize, and share during their lifetimes. Material items in turn represent important signs of culture that define, describe, and communicate specific social meanings and collective representations. Culture is conceptualized as a set of signifying practices that interplay between symbolic and objectified dimensions, as well as the epistemological and substantive, thus offering an approach that is appealing for those of us who seek to better understand the dynamic nature of both the modern world and the ancient past.

To begin, there are several definitions of the term “monument” that deserve consideration. The term is Middle English and derives from the Latin words monumentum, “a memorial,” and monēre or admonēre, “to remind, warn, or advise.” The first meaning of monument is a structure erected to commemorate a person or event. The most literal (and perhaps ancient) examples of such monuments are the gravestones and sepulchers of the dead. For example Horace (Carmen Saeculare IV, 8) notes during the 1st century B.C.: “Marble statues, engraved with public inscriptions, by which the life and soul return after death to noble leaders” (literally: Incisa notis marmora publicis, per quae spiritus et vita redit bonis post mortem ducibus). This meaning has changed little, as the English churchman and historian Thomas Fuller wrote (Essay on Tombs, 1648): “Tombs are the clothes of the dead. A grave is but a plain suit, and a rich monument is one embroidered.” Monuments such as burial markers thus serve as memorials to the exalted dead, commemorating their achievements or lives, preserving their memory, and offering a degree of immortality.

Another meaning of “monument” is a structure built to venerate a collective social experience or idea. Edifices of this type represent some of the most poignant and sophisticated accomplishments of human society.
Contemporary examples include towering skyscrapers and expansive bridges, structures that showcase our modern technological capabilities. More impressive perhaps than modern monuments are humanity’s ancient edifices; built from hard-carved stone, they possess a combination of archaic technological sophistication and a resilience to natural decay. The Egyptian pyramids, for example, are familiar to the youngest of school children because they remain the quintessential case study of power and wealth. The lofty trilithons of Stonehenge remain the enigmatic fusion of cosmology and landscape. And Machu Picchu offers an unparalleled glimpse into a richly codified social order of kings and nobles. These places of veneration offer a certain allure to modern visitors who seek a glimpse into the past, who thoughtfully touch the stones that ancient hands once carved, deriving a sudden sense of something beyond the self. These are structures that have endured the havoc and corrosion of the ages; preserved testaments from the unfathomable depths of deep time after lesser things have crumbled into dust, forcing us to ponder what collective endeavors we are part of.

A third meaning of the term “monument” is an object used to mark or maintain a boundary or position. Monuments of this sort include those human alterations to the natural environment, such as upright stones or statues that serve to define a border or designate a limit. The boundaries that markers denote and the relationships that they define may be natural to social, living to dead, or the past to the present. Cemeteries, royal palaces, the Great Wall of China, for example, all exemplify marking monuments. Similar to our previous definitions, marking monuments help manage and regulate social interaction because they are not easily altered or removed. However, they are polar opposites of the memorializing monuments. Instead of serving as temporal anchors lodged in space, marking monuments serve as spatial references lodged in time. Once established, a marker may, at some point, become outdated, a vestige of obsolete ideas and interactions, or they may in turn be used to produce and circulate new symbolic meanings. As the Roman poet Ovid (Fasti, bk. IV, 709) wrote in the year A.D. 15: “The need has gone; the memorial thereof remains” (literally: Factum abiit; monumenta manent).

This diverse array of definitions offers a variety of ways to describe and interpret the meanings of monuments by archaeologists, architects, art historians, artists, and historians. Perhaps their immensity is alluring, or perhaps it is their timeless immutability. Whatever the inspiration, monuments offer an extraordinary glimpse into human aesthetics, ways of life, and social values. However, their very aura of timelessness also represents their greatest paradox: having their social values change after they become transfixed in time; values that undergo transformation into new meanings by subsequent generations who desire to redefine and contest meanings from the past; values that become socially derelict or irrelevant, or even forgotten completely. The original builders are long dead—the peasant farmer, the ancient stone mason, or the queen of consequence—making it difficult
to comprehend their intent no matter how many monuments we scrutinize and study. This challenge of retrospective interpretation is something that modern researchers contend with constantly, and it is a paradox that is fundamentally irresolvable.

My view as a researcher is retrospective—how do we know what a monument is “supposed” to mean, or what its “real” meaning is? In the long march of interpretation, monuments have been treated as antiquarian relics of deep history, as processual vehicles charged with cultural and stylistic meaning, and postmodern symbols for visual reference and memory.

Yet these views are all somewhat limited in their ability to understand monuments because they either favor a behavioralist interpretation (where meanings are determined by how people respond to external stimuli) or an ideational interpretation (where meanings are determined by the ideas created inside people’s heads). The behaviorist view has in turn spawned the antiquarianist, scientific/stylistic, and neoevolutionary approaches. The antiquarianist stresses the formal properties of a monument—the architecture, the layout, the building material, the imagery and so forth—defining the encoded behavioral meanings intended by the architect. All then that is required is a thorough and competent study of a monument in order to properly “read” the original meaning of its architect. The scientific/stylistic approach emphasizes more general cultural conventions of meaning, where common traditions and contextual conventions of usage, practice, and interpretation dictate meaning. In this way, a monument still remains a historical document and a material fact, yet its meaning is inevitably cultural and contextual. Monuments in the neoevolutionary approach also emphasize more general cultural conventions of meaning, but they are framed in a historical tradition and context, where they become meaningful only in their relationship to other material expressions. Finally, the postmodern approach follows the ideational interpretation by viewing monuments as lacking any deep connotations, where meanings exist only insofar as they evoke a set of responses in a visitor (there is no need for patterns, symbols, or structural codes). Yet, often a dialectic forum of behavior versus idea generates descriptions and explanations that still remain disappointingly dilute. An analytical perspective may prove valuable for specific case studies, yet how do we fully explain the ferocity and measure to which monumentality pervades our entire cultural history?

The aim of this book is to link the many social strands—both substantive and epistemological—of monumental construction, and explore a series of case studies from around the world and through time. It would not be so unusual if this work began with a descriptive investigation, or with a critical comparison of the written and archaeological records, or with a privileged focus on one particular phenomenon, such as the monumental reproduction of the political hierarchy. I have certainly followed this approach, but I must confess that in my own work there have been certain qualities to
these monuments that remain unexplained; particular meanings that I have missed. It is for this reason that this book seeks to simultaneously articulate a number of distinct processes whose interaction might lead to more variable explanations and contingent outcomes.

This book is divided into four chapters. Chapter 1 discusses the mechanics of the mind, the material world, and the spatialization process of monumental architecture. Monuments share similar social meanings in many societies, and it is with this establishment of social meaning that I examine the first key process in our cultural circuit, that of representation. Meanings do not necessarily arise directly from an object, the thing itself, but rather from the way in which an object, in this case a large mound of stacked stone, is represented in both physical space and time. After this discussion about ways of perceiving, I next speak to issues of process, and outline the approach of metaphorical blending and how material objects serve as delegated agents of human thought. I finally discuss three important models of spatial-cognitive metaphors that operate as agents to create, utilize, and sequence monumental architecture. These are: (1) metaphors of time; (2) metaphors of movement; and (3) metaphors of scale. Each of these structural categories operate simultaneously to contour monumental space and can therefore be used to provide specific clues as to the meaning of monuments. I conclude Chapter 1 with a discussion of commemoration and the use of monuments.

Chapters 2 through 4 of this book seek to link the substantive, ontological, and epistemological social strands of monuments using examples from specific time periods and regions. These chapters present case studies organized along the three main contouring spatial structures. Chapter 2 addresses a set of monuments whose meanings rely primarily upon spatial metaphors associated with time. Chapter 3 presents monuments primarily associated with the spatial metaphors assigned to movement. Chapter 4 addresses metaphors of scale and monuments that are uniquely colossal. The combined narratives of these 15 monumental examples repeatedly return to the spatial-cognitive sequences described in Chapter 1. These metaphors—of time, movement, and scale—comprise strands of knowledge that, when interwoven, create contours of meaning around how humans interact with monumental spaces.

The accompanying notes and bibliography acknowledge the many intellectual and practical debts of this work, which are cited in the appropriate places. Those who have detailed and summarized the vast research on human cognitive thought have been very important, particularly the musings of such noted scholars as Loren Eiseley, Merlin Donald, Jerome Feldman, and George Lakoff. Those who view material culture as generating distinct conceptual metaphors have also been particularly influential. The works of Henry Glassie (Vernacular Architecture) and Christopher Tilley (Material Culture and Metaphor) have been particularly insightful. Moreover, I also
draw on a growing body of literature that views space in equal terms with history and society as a means for enriching and guiding human life, and that includes explicit practical applications which incorporate and develop space into our theoretical perspectives. The seminal works of Henri Lefebvre (*The Production of Space*) and Susan Stewart (*On Longing*) are particularly illustrative in this regard.

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1 Making sense of monuments

Nobel Laureate and diplomat George Seferis sought to best describe the ancient monumental ruin of Mycenae, abandoned in the Greek countryside, forlorn and forgotten.

An astute poet, whose works often focused upon Greek history, Homeric myth, and Mediterranean landscapes, Seferis wrote: “voices out of the stone out of sleep, deeper here where the world darkens, memory of toil rooted in the rhythm, beaten upon the earth by feet forgotten” (Seferis 1995: 34). At first glance, Seferis seems to simply describe an ancient relic, a jumble of collapsed stones. But upon closer reading his meaning is better revealed; the scale and design of its architecture provide new representations and broader meanings, the secrets within offer new abstractions. The metaphors that Seferis uses are meant to communicate ideas of durability, stability, and permanence. The physical quality of a stone, its substance, serve as a cultural referents: to be “hard as rock,” “old as stone,” or “rock bottom.” A stone’s constitutive process, movement, or action serve as another: “a rolling stone gathers no moss,” “a word from the mouth, a stone from the hand,” and “those hit by a stone never forget.” We might also describe this monument as “gigantic,” “spacious,” “despotic,” or “ancient,” words that signify meaning (Figure 1.1). This semantic contrast of quality and action is an illusion largely created by a monument’s materiality—its unique physical attributes—producing mental meanings that, through description, transforms an object into something culturally significant. This mechanism of signification, of generating meanings through language, is a fundamental core of understanding culture.¹

Language, however, tells only one aspect of the cultural narrative. For example, experiencing a ruined monument (i.e., seeing, touching, or smelling it) conjures up specific images and meanings that help make sense of the past. A photo of the Great Pyramids in Egypt, for example, might call up
images of omnipotent pharaohs driven to architectural perfection in their headlong dash for immortality; or maybe ideas of alien visitations or harmonic convergences. In this way every person can be imagined as a connoisseur of culture—their own to be precise—capable of making sense of a monument by comprehending the social discourse that surrounds it, integrating this discourse within some interpretative framework that makes it “cultural,” and then decoding it using their personal spheres of reference.

This book contains a series of narratives about the construction and use of monumental architecture, narratives from around the world and through time. My goal is to offer a productive avenue of inquiry, one that has not yet been fully explored, of how to make sense of monuments. While a culturally specific “emic” framework certainly dictates how and why a monument is utilized in a contextual fashion, there are also general “etic” insights that may be employed to better understand why humanity, from the inception of complex culture to the present day, continues to construct and utilize monuments. The internal emic perspective is often viewed as incommensurable with the comparative external etic viewpoint; however, synergy between the two does exist, and I employ both approaches in a complementary fashion where one stimulates the other’s progress.

The essential methodology of this book is based upon four interrelated etic and emic principles:

1. Culture represents shared patterns of cognitive events of thought and experience that may be structured and externalized into the physical world.
Making sense of monuments

2. Physical spaces are transformed into culturally meaningful places when cognitive events become collectively associated with spatial locations. 
3. Monuments are places that contour and spatially sequence cognitive events by directing how people move through and interact together in space. 
4. The commemorative success of a monument is correlated with its capacity to track changes over time in both public and private dialogue.

First, every mental thought or experience is extremely personal, processed by an individual’s brain, and encompassing higher brain functions such as subjective consciousness, personality, reason, memory, and emotion. Even though thoughts and experiences are individually formed, culture is a body of group-shared thought or information, such as language, values, or social practices. Biologically, culture is represented as a cumulative set of shared mental representations (events, or schema), a set of shared meanings and experiences that is greater than any one individual. Monuments, as human-modified materials, are imbued with cultural values and meanings (other physical objects include tools, writing, artwork, and forms of architecture). Human-modified objects, or material culture, have a history just about as old as humanity, and we have become incredibly reliant upon our things to help us negotiate the world around us. Objects play a seminal role in the structuring and operation of the human mind, and as the prominent British archaeologist Colin Renfrew has consistently argued, they externalize, amplify, and distribute how both individuals and societies represent reality (Renfrew 2007; Renfrew et al. 2008; Renfrew and Scarre 1998). Similar to the cognitive scientists who study the mind, language, or robotics, the crucial question for Renfrew is how specific cultural practices build upon the human biological endowment in order to produce cognitive accomplishments.

Second, unlike most other forms of material culture that archaeologists study, a monument is constructed as a culturally emic place, a permanent space upon the physical landscape that mediates human experience and memory (formative works include Bourdieu 1977; Lefebvre 1991; Relph 1976; Tuan 1977; also see Hendon 2007; Lightfoot et al. 1998; Meskell 2003; Rubertone 2008; Whitridge 2004). Place-making is a ubiquitous social and cognitive process that is cumulative and culturally specific that, over time and space, becomes associated with a vast network of experiences and memories as people reoccupy, reuse, and recreate places. People build and alter spaces in ways that demarcate and personalize their life experiences, and each constructed place becomes a mediator of social experiences, possessing a horizon of meaning that is discernible at many different levels and in many different ways. What sets a monument apart from other places is its spectacle-like character that evokes collective social identities and values. Group histories cling to their stones as enduring residues of human experience, much in the way that a family heirloom informs about ancestry. A monument provides both material and psychological structure and form to society, casting social ideals and principles as being naturally true
within the landscape in which they stand, and transforms private actions and behaviors into movements of the collective public. In this way, a monument represents an emergent nexus of collective mental representations, embodied behavioral practices, and material things.

Third, although immutable and immobile, a monument also mediates spatial practice by directing how people move and interact together in space using explicit spatial relationships. Any given monumental palace or fort, temple or tomb offers a commentary about a society; it is an assembled spatial story that creates collective narrative through the process of movement. A pilgrimage, a ritual, a procession—all orient and demark real and imagined boundaries that enable people to “make sense” of things. It is the rendering of meanings into stone, the construction of walls and other architectural elements that formalize movement in durable fashion. The building of monuments casts social ideals and principles as being naturally true, because they become physically codified upon the landscapes in which they stand.

Fourth, a monument is intractably linked to the commemorative process—those cultural practices that recall or show respect for a person, event, or idea. Commemoration is contingent upon a place and a time, allowing a monument to represent a medium that carries important messages, urging us to not only remember, but to remember in a certain way. A monument is intentionally constructed to enhance recollection in a fixed and permanent fashion, integrating memories related to the narrative of commemoration, and serving as a spatial anchor that holds firm in the dynamic flow of memory-making. However, because they are static objects, they also have difficulty addressing the multiplicities of memory, the fuzziness of recollection, and the temporal changes in commemorative activities.

In sum, every human learns how to merge thought and culture together. Humans literally recast what they learn about culture onto their own cognitive patterns to generate personal meanings. As artificial intelligence expert Jerome Feldman (2006: 3) notes: “From the child’s internal perspective, all social and cultural interaction start as additional [cognitive] inputs that must somehow be understood and incorporated using existing knowledge.” What this means is that the brain, a biological organ made up of neurons and neural-electric pathways, absorbs, carries, and then communicates the practices and values that are known as culture. Decades ago, it was quite difficult to draw the substantive links among thought, material objects, and culture, or to devise adequate scientific methodologies to study such links. However, many of the basic premises and pieces of the cognitive puzzle are now in place so that we might begin to consider how to make sense of monuments.

Cognitive event

English mathematician and philosopher Alfred North Whitehead was the first modern scholar to state that the meaning of a material object lies in its
relational properties rather than its physical properties. In a passage written in 1920, Whitehead speaks about the ancient Egyptian obelisk called Cleopatra’s Needle, gifted to the British government and erected in London in 1878 (Figure 1.2). He states:

there is Cleopatra’s Needle. If we define the Needle in a sufficiently abstract manner we can say that it never changes. But a physicist who looks on that part of the life of nature as a dance of electrons, will tell you that daily it has lost some molecules and gained others, and even the plain man can see that it gets dirtier and is occasionally washed. Thus the question of change in the Needle is a mere matter of definition. The more abstract your definition, the more permanent the Needle.

(Whitehead 1920: 174–177)

To Whitehead, this monument is more than a stone sitting upright on the Victoria Embankment; it is in fact what he named as an event, a gathering of diversities best described as relationships. “Where does Cleopatra’s Needle begin” he continues, “and where does it end? Is the dirt and soot part of it? Is it a different object when it sheds a molecule or when its surface enters into chemical combination with the acid of the fog?” So with every encounter by a passerby, every changing moment of time, Cleopatra’s Needle is an event that is unfolding, original and newly formed. “There is nothing which floats into the world from nowhere,” Whitehead states (1978: 244), “everything in the actual world is referable to some actual entity. It is either transmitted from an actual entity in the past, or belongs to the subjective aim of the actual entity to whose concrescence it belongs.”

How does a monument influence people? How does it affect the cognitive events that lie behind cultural ideas and behavior? In order to understand monuments, it is important to first digress into cognitive science to address how people mentally conceptualize and process events. Whitehead’s “event” falls best within the framework of cognitive science research called event segmentation—what cognitive psychologist Jeffery Zacks and colleagues describe as the function of human perception that divides continuous experience into discrete parts in order to structure and regulate memory (Kurby and Zacks 2008; Swallow et al. 2009; Zacks 2004; Zacks and Tversky 2001; Zacks et al. 2006, 2007; Zacks and Swallow 2007). In other words, the human brain makes sense of the continuous stream of activity occurring around Cleopatra’s Needle by parsing it into a modest number of meaningful units—units such as the towering obelisk, a person walking by, the fragrance of flowers, swaying tree branches, or the slowly shifting shadow of the Needle in the sunshine.

Event segmentation is a powerful cognitive tool because it economizes perceptive input and memory retention by reducing what would normally
be a continuous influx of activity stimuli to a manageable number of discrete events (Figure 1.3). Although perceptive input is received from all of our senses—visual, auditory, olfactory, gustatory, and mechano-receptive—one sensual modality does not necessarily preclude another. The brain sorts these diverse sensory inputs and segments into an event in a similar fashion, by building event-models of any current situation in order to comprehend a narrated event. Segmentation has been identified using neuro-imaging MRI scans to track transient brain wave activity changes as physical and social

Figure 1.2 Cleopatra’s Needle, London. Source: Photo © David Holt.
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features or information flow abruptly alter. Thus the brain parses an event into identifiable chunks or subevents, much in the way a novel, television show, or film is divided into chapters or “scenes.” Ever wonder how or why we are able to parse and comprehend a storyline that radically shifts between scenes, skipping around actors, times, places, or even plots? It is because our brains know how to segment an event by identifying boundaries and recombine segmented subevents into larger, meaningful units that become encoded memory, selectively updating event-models if a new experience is incongruent with the current model. Event segmentation is therefore predictive rather than integrative—if we see clouds approaching, we have event-models based upon previous experience that we use to predict whether it will rain or not. This predictive ability has important implications for the long-term memory retention of events, as well as the short-term accessibility of information related to those events.

But how do we properly perceive, comprehend, and sort those objects and events of culture from the continuous flow of perceptual information, and then retain and reiterate them in meaningful ways? One idea is that perceptions are organized using schema, a condensed re-description of perceptual experience for the purpose of mapping bodily spatial experience onto cognitive thought. Linguist George Lakoff and his colleagues argue schemas are the building blocks of cognition, emerging in the human mind from our embodied interactions of sensory-perceptual experience (Johnson 1987; Lakoff 1987; Lakoff and Johnson 1980, 1999; Lakoff and Turner 1989; also see Hampe and Grady 2005; Cöegnarts and Kravanja 2012; Treichler 2007). Schemas build upon the ideas of Immanuel Kant (1724–1804) and Maurice Merleau-Ponty (1908–1961).

Schema are not directly linked to any sensory mode, but are instead “abstract” or “skeletal” concepts, consisting of repeated patterns of embodied experience, “frames” that organize thought. The notions of a “dog” or “walking home” are not really conscious ideas; they are pre-conceptual,
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converts sensory experience into conceptual representation, built from the embodied experiences we acquire before we even learn language.

Three relevant schemas pertain best to architectural space and monuments. They are: container/center-periphery, scale/balance, and source-path-goal. Container is a fundamental schema consisting of three minimal parts: interior, exterior, and boundary (Figure 1.4a). When we experience a container, we measure the interiority or exteriority of an actual physical or metaphorical amount; things appear in or out of containers such as houses, automobiles, laundry machines, or our mouths, etc. This schema is physically rooted in the experience of the body as a spatial epicenter, and where distance is judged as being peripheral to the body. In this way, container is conjoined and superimposed upon another schema, the center-periphery schema. The container/center-periphery hybrid schema is responsible for the separating of monumental space using inside and out, subject and object, yours and mine, and over and under.

Another important schema is scale (Figure 1.4b). It consists of three minimal parts: less than, equal to, and greater than. When we experience a scale, we measure a relative increase or decrease of an actual physical or metaphorical amount, such as snow, houses, cars, a bar of soap, the food on our dinner plate, and other people. For example, when we experience last evening’s snowfall, we cognitively determine if it is larger or smaller compared to previous snowfalls from the week or year before. We measure its scale relative to something else. One of the most important measures of scale relative to monuments is our human body. As we approach a monument we judge its scale in relation to our own body height: taller, bigger, small, shorter, or about the same. Scale is similar and conjoined to the balance schema; the physical experience of the symmetrical distribution on either side of a fulcrum point or central axis, such as a measuring scale or see-saw. The scale/balance hybrid schema is responsible for the physical experience of balance, equality, and symmetry; or conversely, imbalance, inequality, and asymmetry.

Figure 1.4 Examples of schemas relevant to architecture: A. The container/center-periphery; B. The scale/balance; C. The source-path-goal. Source: Author drawing.
**Source-path-goal** is a complex schema involving physical or metaphorical movement from place to place (Figure 1.4c). It consists of three parts: a starting point or source, a destination or goal, and a series of contiguous spatial points in between the source and goal. When we use **source-path-goal**, we identify forward locomotion by people, automobiles, airplanes or other objects, such as a ball that falls off a table and begins to bounce away. We gauge where and how fast this locomotion is occurring. We perceive and organize such concepts in relation to our bodies. As we ride in an automobile, walk up a hill, or use our hand to grasp a cup, we directly experience or perceive movement along a path, sensing the visual changes in the distance and quality of objects around us, feeling movement as the wind brushes our face. Although complex, the **source-path-goal** schema nonetheless emerges as a coherent whole, similar to a constituted Gestalt experience. The comprehension of the **source-path-goal** schema requires not only the perception or sensation of locomotion and the “experience” of movement, it is also critical for the conceptualization of time. Only when we have experienced variation in moving fast or slow are we able to categorize the changing nature of both space and time.

Schemas appear to be both deployed and constructed during the event segmentation process to aid perception and memory retention (Hard et al. 2006). Consider the experience of parsing the continuous sensual information while visiting the tombstone of a deceased relative (somewhat simplified here for argument’s sake—Figure 1.5). The tombstone is a monument used to commemorate the past, similar in style and function to Cleopatra’s Needle, but, in this case, memorializing the life of a loved one. As a physical object it is nothing more than an upright cut-stone slab inscribed with a suitable epitaph, sitting among countless other tombstones in a cemetery, arrayed in neat rows. However, the perceptual experience of visiting this
tombstone becomes mentally parsed into discrete subevents that are quickly assimilated using the framework schemas. Your mind employs the source-goal-path schema to structure spatial movement while approaching the headstone, moving from living place to place of dead, with its repeated visual reminders of death; evergreen trees, religious markers, and other tombstones. The motion and perceptual cueing give you time for contemplation and reflection. Next, you employ the container schema once you have identified your relative’s headstone, gauging the qualities of centrality and interiority. The headstone physically marks the tomb boundary; you are outside, above ground, and in the periphery. Your loved one is inside, below ground, and in the center. These schemas help you properly parse the relationship of you and the deceased: corporeal versus disembodied, animate versus non-living, and now versus then. You next employ the scale schema to measure the headstone. Is it larger or smaller, opulent or impoverished, more realistic or imprecise than nearby markers? What does this say about the importance of your loved one, both in this life and the next? As you further experience the marker—the weathering of the stone, its worn color, or its inscription of an urn symbol, you might reemploy the source-goal-path schema to measure the temporal distance metaphorically that separates the two of you.

A visit to the cemetery was of course unnecessary; you could of course have stayed at home to simply “remember” your relative without the tombstone visitation event. But the segmentation of this event provides you with a more intense experience, increasing the strength and duration of your existing memories by augmenting your event-models with new memory structures associated with your deceased relative. The idea of event segmentation using schemas is important because it articulates how our brains strive to interrelate and internalize certain external processes; how an event or a physical object changes the way we think about an experience. Event-models and schemas allow us to conceive of the mind as a holistic system of both biological functions and complex cultural mental functions, such as focused attention, preconceived planning, and intentional memory.

Place making

An unknown writer penned the following words in an 1840 issue of London’s The Art-Union, a monthly journal of fine arts, in the hopes of encouraging native architects of the time to design and advance monuments worthy of the British Empire. The editorial states: “who will direct public taste? Who decide[s] on the size, the sentiment, and character of national works … and the necessity of poetry in our public monuments” (The Art-Union, 1840: 17: 90, June 15). This editorial sought to critically “elevate and encourage public taste” through editorializing because they believed that modern British monuments were “unworthy” compared to the efforts of ancient Greece (Figure 1.6). Their overt pleas to imitate the great efforts of the ancient world sharply contrasted with the patron’s sometimes gaudy desires
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for immortality as the fickle aesthetic values of the time, illustrating the fact that a monument may possess a kaleidoscope of expressed meanings.

A monument is a culturally constructed place, a permanent space upon the physical landscape that mediates human experience and memory. A place is what the eminent geographer Yi-Fu Tuan (1977: 4) refers to as locations of “felt” value, physical spaces where perceived, occupied, and lived meanings are attached. Much has been written in regards to architecture, the built environment, social meaning, and place-making (Pierre Bourdieu 2003; Giddens 1979: 209; Glassie 2000; Goldhagen 2017; Panofsky 1957; Rapoport 1980; Smith 1987; Wilson 1988). As places, monuments provide structure and form to society materially, as well as psychologically. As structured architecture, monuments give personal relationships precise spatial definitions, making people’s lives more explicit, and helping to direct human activities.

The idea of a monument being a cultural place is best articulated by French social theorist and philosopher Henri Lefebvre (1991: 221; 1996), best known for his investigation of social spatial conventions, who describes monumentality as a “singular spatial representation of collective identity” negotiated through discourse between the absolute realm of physical space (natural locations of topography or territory) and the abstract realms of culture (distinct socially encoded topographies or mental spatializations). The range and breadth of his intellectual accomplishments are still being evaluated (see the summary provided by Bower 2017: 244; Soja 1996).

Lefebvre conceptualized a three-fold dialectic of space: (1) an ideal or perceived notion of space; (2) a planned or conceptual spatial representation; and (3) actual used or lived places (Figure 1.7). Perceived space refers
to the physical form of space, both a medium and outcome of human activity. It is the physical phenomena of Cartesian geographies and quantitative physical descriptions (Soja 1996: 66), the conceptual foundation of “positivist” spatial science.

Conceptual space is an imposed abstract spatial or mental template (designed by scientists, urban planners, engineers, or priestly architects) creating and implementing formal systems of spatial grammars that closely control codes of spatial knowledge. It is the primary realm of ideational thought and vision, created and conceived as codes of spatial knowledge. Lived space is distinct from perceived or conceived spaces because it is affective bodily practice; the thinking, walking, talking, and observing of space in which private experiences are expropriated into space and spatial templates are appropriated back into private experience.

Lefebvre’s triad of space describes the cognitive outcome of creating “place” and extending culture out into the physical world—merging abstract to absolute levels of existence that are sometimes contradictory or sometimes corresponding. The result is a place that is susceptible to strategic choice and thus politically charged, polarized at any particular moment towards one of the three primary spatial configurations, crystallized into formal and institutionalized places of meaning. Cognitive scientists and functional linguists would model Tuan’s locations of “felt” value, or Lefebvre’s “lived” place using the concept of mental space (also referred to as a conscious analog, domain, or a cognitive map). A mental space represents the gathered sum of the physical world around us, and is a cognitive entity or mental representation that involves meaning construction (Fauconnier 1994, Fauconnier and Sweetser 1996; Fauconnier and Turner 1997, 2002; Jackendorff 1997; Nehaniv 1999; for a unique perspective on mental spaces also see Jaynes 1977). Mental spaces are used by cognitive linguists to analyze how intrinsic conceptual thought is juxtaposed from one mental domain to another, or how grammatical usage organizes background knowledge to trigger a mental “place” or “frame.” Mental spaces

Figure 1.7 Henri Lefebvre’s triad of a social space. Source: Author drawing.
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are higher level meanings constructed in the brain. As the cognitive linguists Gilles Fauconnier and Eve Sweetser (1996: 11) note:

The dynamics of mental space construction and space linking are technically abstract ... but set up, structured, and linked under pressure from grammar context, and culture. The effect is to create a network of space through which we move as discourse unfolds.

A mental space is composed of lower-order mental structures such as schemas and other vital relations such as spatial-cognitive sequences, each operating simultaneously as a single integrated unit (Figure 1.8). For example, visiting a loved one’s tomb is a mental space consisting of a series of spatial-cognitive sequences formulated by schemas of movement, force, and balance; walking through the cemetery, centering perception upon the headstone, and measuring how large the headstone is. A representative mental space is involved in any major undertaking we attend to, and is thus an analog of the real world, a reflective mental construct, a model, or point-to-point replica of representation consisting of subjective “experiences,” “pictures,” schemas, and other event relations. They are often a potpourri of fiction and fact, combining experiences, memories, and senses; some bits are based upon subjective ideas, others are based upon real and perceived Euclidian distance and directions. But a mental space does not match physical reality; it is an impoverished representation, never truly able to express the entirety of the world around us, making it more of a relationship of analogy or a schematic map of the real world.

Figure 1.8 The mental space is a cognitive analog of the physical world. Source: Author drawing.
But how are traits of a physical space cognitively translated to a mental space? Such progressions are not haphazard but in fact follow a highly structured cognitive process called cross-domain mapping, best explained by the essential linguistic tool for establishing relations: the metaphor. The metaphor is a fundamental trope of rhetoric, representing a unique linguistic expression (a word or phrase) that uses analogy or substitutions in speech (summaries include Büring 2005; Donald 2001: 279; Feldman 2006: 199; Lakoff and Johnson 1980, 1999; Sfard 1994; and Tilley 1999; for a discussion on primary metaphors see Grady 1996). Language overflows with various types of metaphorical references; terms such as “time is money,” “head start,” and “give me a hand” are routine conversational turns. Such literal illusions help overcome the inherent problems of relating a world of words to the world of ideas by offering a simple and expeditious way of communicating ideas among socialized individuals in the same culture.6

The metaphor is more than just a linguistic trope. It also refers to any form of associative learning, where familiar visual, auditory, tactile, or proprioceptive understandings are transferred into abstract concepts. Whenever we make sense of the world, metaphors enhance our ability to comprehend it. For example, the human body is a common explicator; where we physically enter someone’s house, its surroundings might make us feel comforted and “at home.”

The body is often used to provide understanding to the world around us: the “head of government,” the “face of a clock,” the “eye of a storm,” the “arm of the law,” and the “foot of a table.” By elucidating the parts of a body, we map and describe unfamiliar objects or events, familiarizing and then incorporating them into our broader sphere of understanding. Another common metaphorical connection is using space to describe time: “the longest yard,” “time travel,” “at this second,” or “on Monday.” Metaphors generate, extend, and change our verbal lexicon, becoming a means of perception rather than a simple tool of communication. In this way, they become potent weapons in our cultural arsenal to convey ideas and socially express ourselves.

Material objects likewise evoke metaphors; an object’s physical and aesthetic qualities function as do the sounds and signs of language. As the eminent anthropologist Henry Glassie (1999: 46–47) notes:

Material culture is as true to the mind, as dear to the heart, as language, and what is more, it reports thoughts and actions that resist verbal formulation. Like a story, an artifact is a text, a display of form and a vehicle for meaning. Both stories and artifacts arise out of concentration, both are created in time and shaped to cultural pattern, but they differ in apprehension. The story belongs to temporal experience.
It moves in one direction, accumulating associations sequentially. The artifact belongs to spatial experience. It unfolds in all directions at once, embracing contradictions in simultaneity, and opening multiple routes to significance.

Glassie’s point is noteworthy. Objects encode meaning in a more generalized and fuzzy way than words, replacing verbal precision for the expansiveness of space and the longevity of the material world (especially for the archaeologist, see Buchli 2002; Chilton 1999; Christiansen 1995; Tilley 1999). Objects become “emblematic,” similar to gestures, body postures, and graphic depictions that serve as non-verbal communication, invoking visual responses much in the way body gestures do, although their physical substance allows them to sit still for us so that we may carefully scrutinize and retrace meanings, much in the way textual writing preserves speech (although writing systems represent a special case of unifying visual and verbal representation). Archaeologist Christopher Tilley (1999: 263–264) concurs that the power of an object transcends mere words. He refers to objects as *solid metaphors*, communicating meanings immediately, because they are concrete and spatial, and create meaning in two ways: (1) internal or physical quality; and (2) biographical or temporal context. Internal qualities include shape, form, texture, and color, traits that are analogically similar (or dissimilar) to another object, such as the way in which a toy doll analogizes a human, complete with hair and smiling mouth. An object’s biography is also important, and includes biographical information such as an object’s genealogy, its manufacture, its function, its ownership, its movement from place to place, and how it may have been discarded, all binding it to social perception (Godson and Marshall 1999; Langness 1965; Kopytoff 1986; and Tilley 1999). The diamond ring that is a family heirloom is simply metal and stone, yet the phases of its use are contextually bound to social interaction and social relationships. Its history makes it dynamic and active, intersecting with human lives and human experience, reproducing and transforming the social contexts in which it is employed.

But how do monuments metaphorically cross-map mental spaces? How does our brain strive to interrelate and internalize the physicality of space? How does a house or a tomb change the way we think about the world around us? Consider for a moment the paper map my young son creates after we visit the cemetery (Figure 1.9). As the map-maker, he first cross-maps multiple meanings by drawing various graphic symbols as landmarks upon paper—a meandering line tracing the path of movement through the cemetery, a rectangle for a headstone, and a small flower marking the urn. He does this by first using two contributing models for his mental space of our journey: the physical world of the cemetery as well as a specific mental space filled with his artistic imagery. By integrating these two contributing
spaces, he creates a new emergent structure independent of either physical space or imagery. This is called conceptual integration, the mental process of creating a new blended mental space from the existing elements of at least two contributing spaces (Fauconnier and Turner 2002; Nehaniv 1999). A verbal description of this process would be: “the many things in the cemetery are similar to the different symbols on this map.” After he hands me his completed map, I am then able to structure my own bodily and cognitive experience by using his piece of paper to direct my thinking. For me, the map-reader, the map becomes the known domain, not his mental map or the physical world. I scrutinize his drawing to cross-map his symbols onto my own mental space that represents our journey. My verbal metaphor is: “[t]he symbols on my son’s map are like places in a cemetery.”

My son’s map may not communicate unerringly; it may be wholly unreadable if the context of the cemetery is not known, or if the spatial precision is not accurate. Although this new space is a model of the physical real world, it is still one step removed. My ability to translate this map likewise diminishes because of this more distant relationship to the real world. Without a sense of context I may have no idea what the meander or rectangle represent. In fact, the only sign on his map that I might able to make sense of is his scrawled “flower,” which exists already in my own symbolic lexicon as a sign of beauty, tranquility, or love.

Place-bound experiences establish the framework upon which we build our identity and invoke our sense of self. Each place serves as an extension of our cultural selves, half of it existing in the physical world, the other half residing as a manifestation inside our heads. Thus, when a church or temple stirs our emotions, when a tombstone reminds us of our childhoods,
or a memorial tells us a tale of a powerful king, it is only because our culture makes it so. Human culture is greatly diminished without places such as monuments; while monuments, without culture, remain inanimate and static spaces, mute and lifeless.

Spatial sequencing

The French philosopher, Charles Magloire Bénard, while solemnly pondering the relationship between mental thought and monuments, notes that:

the eye passes over objects which are there for their own sake, designed only to strike the imagination by their colossal aspect and their enigmatic sense, not to serve as a dwelling for a god, and as a place of assemblage for his worshipers ... You walk on into the midst of those human works, mute symbols which remind you of divine things ... books of stone as it were, leaves of a mysterious book.

(Bénard 1867: 172)

He found this relationship between thought and object to be a complex story relying upon the laws of scale and geometrical proportion to convey ideas (Figure 1.10). From event segmentation using schemas, to place-making using mental spaces and blended metaphors—monuments exist simultaneously in our heads and the physical world. Cognition represents a collaboration between the mind, the body, and the environment. We come to know a monument (or art, or music, or language) by becoming one with it—and we become one with it through the practice of abduction or metaphor. Knowing a monument, therefore, is a process; it is not a thing that we are able to grasp or tuck away.

The cognitive process of making sense of a monument is known as spatial sequencing. Spatial sequencing assumes that any architectural space is a series of linked spatial points that offer structure and information about its designed mental space (Barrie 1996: 6–7, 45–46; Hillier and Hanson 1984; Morreti 1974; Tschumi 1996: 152–168). Any building may be analyzed and parsed into a series of fundamental architectural elements, such as rooms, columns, doorways, and halls. Taken as a whole, such an architectural space is the synchronized sum of its elements combined with the relative location and orientation of these elements to one another. However, an architectural space is nearly always perceived sequentially one element at a time, using ambulatory or pedestrian movement in and around that space. A visitor effectively perceives and interprets each element of a space using spatial-cognitive sequences, examined in terms of their physical and symbolic characteristics. In this way, a monumental space becomes a powerful and memorable place that sequences aesthetic understanding and meaning.

Architect Bernard Tschumi (1996: 142–151) argues that the formal relevance of an architectural sequence cannot be dislocated from the event’s
Figure 1.10 Valley temple of Menkaure, Giza, Egypt (circa 1860–1900). Source: Miscellaneous Items in High Demand Collection / Library of Congress Prints and Photographs Division / LC-DIG-ppmsca-04943.
that “take place” within it: “ritual-architectural events” that bring people and buildings into active interaction (cf. Jones 2000). The meaning of an architectural sequence depends upon the inter-relationship between architectural form, the events that occur there, and pedestrian movement. The sequence itself is cumulative, a group of juxtaposed architectural elements or “frames” where each subsequent element is assembled upon the memory of the preceding element until a path of events is constructed. In this way, each pathway sequence serves as an integrated spatial-cognitive metaphor, where the connectedness and direction of this sequence are just as critical to meaning as the emergence of any particular element. While the architect employs geometric design to assemble the full sequence of elements and envision the movement required for spatial experience, the pedestrian visitor is less able to scrutinize the entire sequence and instead structures each element sequentially, generating a horizon of meaning that becomes increasingly evident with each successive movement.

The principle way by which we explore a monumental space is through spatial comparison. By situating ourselves before or within a monument and its assorted architectural elements, we are able to determine the size, proportion, inclusivity, and relationship of its elements to one another. Typically, we first experience a clear delineation of entry by crossing a threshold which, once traversed, permits access to a full sequence of defined spaces and architectural elements. Vision is the primary sense by which we employ spatial-cognitive sequences to perceive and interpret these elements, although the other modalities such as auditory and mechanosensation are by no means excluded (Fontijn 2007; Frieman and Gillings 2007; Insoll 2009; Watson 2001; Whitmore 2006). The echo of footfalls, the reverberation of voice, the textured feel of stones or walls, the smells of an enclosed room all contribute to enrich an architectural experience. As a monument is encountered, we identify contexts that are known to us, and try to make sense of unrecognizable ones by fitting them into what is already familiar. We do so by metaphorically blending and cross-mapping the experience from one domain to another, sorting, processing, and converting these elements into meanings.

It is time now to detail exactly how to make sense of monuments using three related spatial-cognitive metaphors that are schematically generated and metaphorically mapped as we contour an architectural place:

1. **Metaphors of time**
2. **Metaphors of movement**
3. **Metaphors of scale**

These spatial-cognitive metaphors are graphically depicted in Figure 1.11. For any given monument, these metaphors sequentially mold our experiences and perceptions into understanding, spatially cross-mapping the concepts of “contained,” “anchored,” and “proximal” from one cognitive domain to
another. These three spatial-cognitive metaphors are by no means exclusive, nor do they suggest anything special about a monument when operating alone. Yet each describes an essential part of making sense of a monumental encounter, operating simultaneously and in tandem with one another to provide specific clues as to the meaning of monuments.

**Metaphors of time**

Consider a monument of your own choosing; maybe a headstone, maybe a civic memorial, or maybe a famous archaeological site. Imagine moving towards it, standing next to or inside it, seeing and touching its stones or concrete, sensing your spatial relation to the monument itself. As you do this, you are evoking our first spatial-cognitive contour, that of time, which employs the cognitive schema of container/center-periphery and source-path-goal as perceptual frameworks for comparing and contrasting the proximity of this monument relative to the present. In this way, a monument is built to spatially sequence time, serving as a vessel of memory that drifts upon the symbolic sea of human cognitive capacity. The power of this temporal vessel arises from its status as a cultural place, belonging simultaneously to both the present and the past. Its architectural features direct human activity, providing the spatial foci around which social memory condenses and histories are constructed.

How does monumental architecture enhance temporal reasoning? First, the human brain is fuzzy when processing time. Unlike our ability to process movement or space, the brain lacks distinct temporal modalities, allowing our perception of time to be warped by factors such as mental focus,
memory, motivation, emotions, and more (Lakoff 1993: 218; Kranjec and Chatterjee 2010; Matlock et al. 2010). The brain therefore uses space as an aid to perceive time because it is easier to cognitively process, given the body’s natural sensory-motor modalities to segment location and movement. Yet, because of the imprecision of temporal experience, embodied or psychological time does not always correspond with chronological time (Barrie 1996: 49–50; Lövgren et al. 2010). Time seems to slow down with perceived unfamiliarity, life-threatening situations, pain, or new stimuli. Time also speeds up with familiarity and routine activities. For example, time moves slowly as a youth because everything is new and foreign, a potpourri of experiences. But as we mature, time moves faster, blurring years together because new experiences lessen and become monotonous. As the physicist Albert Einstein once quipped: “When you sit with a nice girl for two hours you think it’s only a minute, but when you sit on a hot stove for a minute you think it’s two hours. That’s relativity” (New York Times, March 15 1929, Page 3, Column 3).

A monument possesses and offers spatial connections that are novel and unfamiliar, giving our brains new stimuli to experience, encouraging a sense of temporal change as the mind employs spatial-cognitive metaphors to metaphorically articulate and structure it. A monument encourages a visitor to move in unfamiliar ways, examine architectural elements that are novel, and prolong their ambulatory experience. The result is a spatial blending or cross-mapping of time that uses the container/center-periphery and source-path-goal schemas to sequence and segment temporal perception. The container schema segments time into proximal and distal, where the contours of architecture and the built environment create temporal relevance: past/present, past/future, or present/future (see Figure 1.11a). By crossing a monumental threshold, such as a tomb entrance, we figuratively crossover into a different time—from exterior to interior, from here to there, and from the present to the past. The source-path-goal schema also metaphors time, partitioning a linear spatial path into temporal segments of past, present, and future. Movement from a source towards a goal represents temporal duration and, as Catherine Bell (1992: 109–110) notes, “it temporally structures a space-time environment through a series of physical movements … thereby producing an arena which, by its molding of the actors, both validates and extends the schemes they are internalizing.”

The spatial-cognitive metaphors of a monument assist in the transfer and validation of social memory, collective recollections and social repetition that supplant individual beliefs and remembrances (see Connerton 1989; Halbwachs 1980; Luhmann 1997; Nora 1989; Ricoeur 2004). They encourage us to collectively remember some things, but also to forget others (Bonder 2009; Boric 2010; Wilkie and Farnsworth 2005; Sherlock 2008; Van Dyke and Alcock 2003). The spatial-cognitive metaphors of monumental time follow two tangents. The first tangent is the prospective memories intended to message subsequent generations, where the construction
and recursive use of a monument facilitates the transference of worthy ideas and collective experience, making society conscious of itself, and reaffirming social identity and mutual affinity (see Assmann 1992). All levels of society employ prospective memory—from families to communities and social groups. The second tangent is the retrospective memories intended to revise or “forget” the past, where the decay or desecration of a monument rearranges or reconstitutes what is remembered (Bradley 2003; Forty and Küchler 1999; Nelson and Olin 2003). Monuments are prime targets for retrospective interpretation because their immutability as vehicles of remembrance make them vulnerable to the spasmodic episodes of iconoclasm that commonly occur during social unrest. Thus, those in positions of social power, the builders and users of monuments, often hegemonically control collective memory, signifying that “societies in fact reconstruct their pasts rather than faithfully record them, and that they do so with the needs of contemporary culture clearly in mind—manipulating the past in order to mold the present” (Kammen 1991: 51).

Monuments communicate different temporal rhythms or scales that closely correspond to the ways in which people experience them. Cultural time is not absolute nor strictly linear, but may instead be more subjective and perceived as cyclical flow or duration. In this view, the past represents accumulated strata of social practices that embed the present, just as the present may embed the future (Foucault 1982). Past ideas, expressed as architectural contouring, persist and intrude into the present, modifying or shaping the context of the present into newly emergent realities. A number of noteworthy scholars have contributed to the theory of how places generate culturally subjective time (e.g., Foucault and Miskowiec 1986; Holloway 2003; Luciano 2007; Kieckheffer 2004: 21; Knott 2005; Shiner 1972; Smith 1987). Most notable are the frameworks of the co-present (St. Clair and William 2008); the semantics of historical time (Koselleck 2000, 2004), time perspectivism (Lucas 2005), and culturally determined temporal systems (Fabian 2014).

I identify three types of monumental time, each influencing the present in different (and perhaps overlapping) ways:

1. **Ancestral time**
2. **Sacred time**
3. **God (or heroic) time**

The most pervasive frame of temporal reference is ancestral time, where chronology is measured generationally, juxtaposing a familial past with an inherited present, structuring meanings into a simple past/present dichotomy following the logic of the container schema. Ancestral time allows for a simple past/present dichotomy, or a sequential chronological order stretching back generationally (e.g., parents, grandparents). Tombstones or family burials best epitomize ancestral time, contouring familial information
into expressions of ancestral time. A second temporal scale is *sacred time*, where the temporal characteristics of a particular ritual are delineated or recreated. Sacred time represents “time out of time,” when the sense of the sacred interposes the experiences of ordinary time (see Eliade 1959). Religious sanctuaries or places of worship are examples of monuments that mark and organize the moments of sacred time. The last frame of temporal reference is *god time* or *heroic time*, a framework that marks the unknown and instantaneous mythical events of the universe, representing or tracking origin myths or the movements and actions of a god or hero (see Campbell 1949). Monuments that track god time may be designed to follow celestial agents such as the sun, moon, and stars—proxies of the gods. Stonehenge or Machu Picchu are examples of monuments build as celestial calendars to track god time.

The success of any prospective or retrospective memory, and the efficacy of any level of temporal scale, is dependent upon how remembrance creates an *immediate* reaction, how meanings are affected in the present moment to stimulate behavior. As historian Walter Benjamin (1969: 255) writes, “to articulate the past historically does not mean to recognise it ‘the way it really was’ … It means to seize hold of a memory as it flashes up at a moment of danger.” For Benjamin, the power of both history and collective cultural memory lies in the immediacy of a memory. This is what I refer to as the *power of the moment*, an important spark of insight beyond the routine, when the past merges with the present, a critical merger of social meanings. For example, the experience of watching the transits and standstills of the sun or moon powerfully conveys the link between the proximal present with the distal past, creating emotion as time literally stands still. In an interesting experiment, archaeologist Daniel Brown (2015) captured some of the intense emotional responses of individuals who were offered opportunities to observe celestial events within some ancient British Neolithic stone rings; their descriptions included the phrases “fantastic,” “magical,” “aware,” and “one with the universe.” This power of the moment ultimately derives its potency through a monument itself; orchestrated movement, concentrated observance, relational perspective, and physical representation. Monuments twist and mold our memories into new meanings between existing representations, meanings that are both intentional and novel. Both prospective and retrospective social memories vie for the attention of the visitor; both struggle to supplant each other; and both settle into an uneasy coexistence, simultaneously communicating disparate and perhaps conflicting messages.

**Metaphors of movement**

In addition to time, a monument also mediates spatial practice by directing how people move through and interact with one another. The permanent nature of a monument functions much like an anchor of a ship, holding fast in the seas of space and time, connecting and overseeing human activity,
serving as a landmark, encouraging visitation. As a fixture upon the landscape, a monument is an assembled spatial story that creates collective narratives through the process of journeying, movements that evoke the cognitive schema of source-path-goal (depicted in Figure 1.11b). A pilgrimage, a ritual, a procession—all orient and demark real and imagined places, as well as those boundaries and transitions that enable people to “make sense” of things.

Three types of monumental movements exist:

1. Encoding
2. Performance
3. Wayfinding

Encoding is the act of physical construction that captures and records a history. It is the rendering of meanings into stone, the construction of walls and other architectural elements that formalize movement in durable fashion. The building of a monument casts social ideals and principles as being naturally true because they become physically codified upon the landscape in which they stand. Encoding employs space in a very unique way to forge the consciousness and movements of the collective public. The more complex the architectural plan, the larger the effort to devise a collective vision and encode symbolism. Physical construction uses space to create a public consciousness very different from other communal activities. Monuments as “space” create metaphorical underpinnings of social life by virtue of a movement of substitutions, casting social ideals and principles as being naturally true within the landscape in which they stand, transforming the private into actions and movements of the collective public.

The second monumental movement is performance. Performance includes the actions of public spectacle; the funeral processions, sacrificial rituals, and commemorative ceremonies that reconstruct spatial history (see DeMarrais 2014). It is the movement through and the use of different portions of a codified monument that enacts shared social practices to broadly forge relationships, ideas, and values among people. The durable architecture and design continuity of a monument conveys a sense of permanence in the phenomenology of everyday life not found in other places (Gilibert 2011; Inomata and Coben 2006; Insoll 2009). Because of the interactive and collective nature of monumental performance, monuments have been referred to by archaeologists David Turnbull and Trevor Watkins as “theaters of knowledge” or “theaters of memory,” merging place, art, and collective social action (Turnbull 2002; Watkins 2004a, b, 2012). Religious Studies scholar Catherine Bell (1992: 98–99), in her important study of ritual, likewise notes the link between space and ritualized performance movements:

through a series of physical movements ritual practices spatially and temporally construct an environment organized according to schemes
of privileged oppositions. The construction of this environment and the activities within it simultaneously work to impress these schemes upon the bodies of participants.

Thus, performance structures space into theatrical focal points of social action while space communicates and influences movement. Architect Thomas Barrie (1996) identifies a set of movement types by the processional path designed by its architecture. An axial path is one that moves the procession progressively closer to the sacred, crossing sanctified thresholds and boundaries yet terminating directly at the goal of the sanctum sanctorum, the holiest of places. A split path has two or more divergent pathways that eventually merge near the goal. A radial path has a series of pathways that converge to a center point from several directions simultaneously. The grid path has direct termination points, or several points at once. The circumambulating path maneuvers around a goal in a circular fashion, representing a sacred journey with no specific termination point. The segmented path deliberately twists and turns, symbolic of the decisions and trials of those who follow its symbolic or spiritual journey.

The third monumental movement is wayfinding. Wayfinding is movement that uses spatial information to orient and navigate the individual within and between places (see Turnbull 2002). It proceeds along paths of observation and integrates knowledge laterally rather than vertically, constructing spatial stories and forms of narrative understanding that proceed from a part to a whole (Arthur and Passini 1992; Ingold 2000: 229; Lefebvre 1991: 225; Tilley 1994: 28; Weisman 1979). Social actions such as pilgrimages, journeying, and other motions in and around a monument, are wayfinding movements that convey meanings by crossing thresholds, experiencing geometric principles, identifying landmarks, or mapping relationships (Lynch 1960; Unwin 2003: 197–201). One particularly potent mode of wayfinding includes a category of monuments built as emergent architectural analogs that track skyscapes and celestial movements; such places highlight the movement of celestial bodies around the monument itself to link the earth to the sky and the physical realm to the spiritual realm. The monumental analoging of skyscapes and celestial structures took various forms, such as monoliths, ziggurats, pyramids, temples, churches, and kivas. The defining element with such monuments is to align their features with the night sky or the sunrise or sunset (Brown 2015; Penprase 2010: 189–227; Silva and Campion 2015). Wayfinding engages fundamentally different meanings of the collective than other types of movement. It creates textures rather than text, generating spatial anchors rather than spatial networks, conveying meanings that are acted out and experienced rather than read. The wayfinding itself become localities to which attention is drawn through movement. For Lefebvre, movements such as wayfinding evoke the processes of displacement and condensation (Lefebvre 1991: 225). Displacement involves a movement from a part to a whole, a process
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called *metonymy*, usually within a single domain. Condensation involves substitution, similarity, and metaphor to communicate value. A palatial throne room becomes a “seat” of royal power around which politics ebbs and flows. A sacred altar becomes a “fulcrum” for uncritical devotees. A burial mound is a “house” of the dead for mourners. A monolith becomes an “anchor” for moving celestial bodies that evoke distinct emotional experiences for those who observe.

In sum, movements of monumental public action are powerful expressions of collective thought. Seeing a monument from a distance is one thing, walking its paths and touching its warm stones is quite another. A pilgrimage, a ritual, an offering—these represent social actions or “movements” in and around monumental spaces, movements that generate answers to those who cross the threshold—exploring and experiencing geometric principles, deciphering the cultural symbols. The spatial layout and geometry of a cathedral, administrative building, or war memorial each create different movements and orchestrations that generate collective thought. These may be movements of location, such as its celestial orientation or territorial boundary—or movements of certain social groups, such as rulers, priests, or war veterans—or even movements of public spectacle, such as funeral processions, sacrificial rituals, or commemorative parades. Such public movements and orchestrations enable us to “make sense” of things.

Metaphors of scale

Consider a monument of your own choosing; maybe a headstone, maybe a historical monument, or maybe a famous archaeological site. Imagine moving towards it, standing next to it or inside it, seeing and touching its stones or concrete, sensing your spatial relation to the monument itself. As you do this you are evoking our third spatial-cognitive metaphor, the metaphor of *scale* that employs the cognitive schema of *scale/balance* as a perceptive framework to compare and contrast the size of this monument relative to other things, either our own human body or other architectural structures. The structure of scale is shown in Figure 1.11c. While not all monuments are overtly grandiose in a fundamental sense, often their very size and scale sets them apart from other things. These objects are what philosopher Immanuel Kant refers to as “absolutely large” or “sublime;” what philosopher Jacques Derrida calls “overspill,” and Dutch architect and theorist Rem Koolhaas refers to as “bigness” (see, respectively: Kant 1781: 109; Derrida 1987: 125–126; Koolhaas 1998). Monuments may be larger than necessary to facilitate function and thereby convey social messages above simple aesthetics or artistic quality, superseding all convention and blotting out everything in their shadow. Bigness ruptures, subsumes, or eradicates any associative meanings, imposing its own structures through the sheer physical presence of engulfing, imposing, and overriding. The challenge is that a monument that approaches the gigantic must be properly
designed to be spatially autonomous, sublime in its bigness, rather than fragmented in both architectural layout and therefore in its cognitive messaging (Marcos 2009).

Metaphors of the sublime, bigness, or scale stem from two viewpoints: (1) an essentialist view of size; and (2) a nominalist view of scale. While both arguments seem to be at odds with one another, they actually juxtapose together in complementary fashion. The viewpoint of monumental size is essentially behaviorist, and argues that monuments are blunt expressions of social power. This means that the larger the monument, the greater the amount of energy and technology harnessed and controlled. Archaeologist Bruce Trigger (1990) observes that many large and impressive monuments around the world lack any basic utilitarian function, documenting a cross-cultural ideological and behavioral trend of conspicuous consumption, the flaunting of resources above and beyond the basic needs of survival, and deviation from normal human conduct (see Abrams 1994; Moore 1996; Smil 2008; Wier 1996; and my own work: Kolb et al. 1994; Kolb 1997; Kolb and Snead 1997). Conspicuous consumption is a common strategy social leaders employ to mask the unequal distribution of resources, drawing attention and acknowledgement to those who use it. It is measured by examining the labor kinetics allocated to monumental construction, such as measures of area, volume of stone, or time of construction. While labor allocation is one facet of monumentality, it offers materialists a basic technique of evaluation, and if additional textual or contextual information is available, the explanatory power of labor becomes particularly robust.

The viewpoint of monumental scale, on the other hand, argues that monumentality is more of a qualitative measure contextually established as a means of correspondence, relating the known to the unknown, the familiar to the unfamiliar. The best argument for scalar nominalism comes from Henri Lefebvre’s (1991: 174) discussions of space, where he notes that the most practical basis for understanding the outside world initially departs from our most important point of reference: the human body. The human body and its anatomy is the standard scale by which we measure and perceive social space. We intentionally extend our bodily experiences to interact with the world, discerning differences through the many spatial perceptions that we absorb, such as right and left, symmetry and asymmetry, and inside and outside.

The bodily perception of the world has now received considerable scholarly attention. However, little theoretical interest has focused upon the scalar relationship between objects and body. One of the most cogent discussions of objects and scale comes from the literary theorist Susan Stewart, who focuses on two classes of meaning: (1) the miniature; and (2) the gigantic. Both generate meanings by narrating human bodily experience, using the primary position of our own body to perceive scale. The miniature, according to Stewart (1993: 60) is a metaphor for interiority, the process of imitation, the structure of memory, and the invocation of the self.
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A miniature may be held in the hand—such as a child’s toy or a souvenir of nostalgia—disassociating the scale of the hand that holds it, shifting our bodily perspective to a larger and undifferentiated scale. With the miniature we create an absolute universe represented in absolute scale. We generate meanings and history that are intimate and personal, focusing upon a personal space that is protected from contamination, easily manipulated, transcendent, and god-like.

In contrast, Stewart (1993: 60) views the gigantic as the antithesis of the miniature, a metaphor for exteriority, an exaggeration of scale, and the lived relation to nature and landscape:

Just as the miniature presents us with an analogical mode of thought, a mode which matches world within world, so does the gigantic present an analogical mode of thought, world without world. Both involve the selection of elements that will be transformed and displayed in an exaggerated relation to the social construction of reality. But while the miniature represents a mental world of proportion, control, and balance, the gigantic presents a physical world of disorder and disproportion.

The gigantic, therefore, takes the scale of distanced perception, superfluous and exaggerated, a cultural place or lived space. Unlike the totality of the miniature, the gigantic minimizes the social role of the observer, prohibiting the vision of the whole, consuming the body much in the same way we are consumed by nature or history. The gigantic disassociates our bodily perspective to a small and minute scale. It envelops and surrounds us with its contours, exaggerates causality and process, and exposes every detail to examination and scrutiny.

Gigantisms, such as monuments, generate history and meaning that are grandiose and communal. They embellish the laws of physical space to force specific meanings, temporarily interrupting and obliterating any existing spatial perceptions an observer might be experiencing, overpowering one’s knowledge of anatomy. Our fundamental relationship to the gigantic is similar to how we perceive the “cultural” landscape that surrounds us (see Sauer 1925), a humanized environment that evokes concepts of memory, history, cultural image, social process, and phenomenological experience (e.g., Ashmore and Knapp 1999; Campana and Piro 2008; Causey 2003; Snead 2008). One particularly fruitful area of debate has been the monumental landscape of Neolithic Britain (Bender 1998; Bradley 1993, 2008; Edmonds 1999; Hill 2008; Nash 1997; Scarre 2002; Thomas 1996; Tilley 1994; Worthington 2004). We journey around and through the gigantic of both the natural environment and the built landscape in the same way; they do not move through us. Spaces of the gigantic draw together and integrate the natural and cultural as a framework for
articulating experience, astonishing and confronting the viewer with an inspirational display of scale.

Unfortunately, the subjectivity of bodily experience presents methodological obstacles for understanding ancient monuments (Brück 1998: 26; Chapman and Gearey 2000; Darvill 1999; Fleming 1999; Scarre 2002: 6). The corrosive powers of time collapse or obliterate monuments, while spatial experience is somewhat culturally subjective, making it difficult to rely on size and scale alone. Because of this, it becomes important to juxtapose the monument as an abstract experience and as an essential relation; scalar experience representing sublime meaning and a social dialogue or map of human activity, yet essential size representing what is important because people react to a monument’s colossal size in roughly the same fashion. How else can we explain the constant use of large monuments throughout the world? The spatial-cognitive contour of scale shapes ordinary context into extraordinary practice because, as Stewart (1993:71) notes, “both the miniature and the gigantic may be described through metaphors of containment—the miniature as contained, the gigantic as container.”

Commemoration

The gentleman Robert Brooke (Brooke 1780, II: 44) in a 1780 eulogy dedicated to the renowned 18th century English navigator and seaman Captain James Cook, praised him with the following words:

The ocean may be his grave, but the whole globe is his monument! His circumnavigating tracks have marked and have measured it almost thrice round in a curious variety of mazes and meanders; and I hope that the galaxy will be traced with his surer pilotage on high.

Born with few social privileges, Cook died as one of history’s most renowned maritime explorers and, as such, was memorialized with the patriotic fervor of an enamored nation. Brooke’s imagery captures the essence of the many acclamations and tributes that lamented the loss of this brave and intrepid emissary of Western Civilization. Proclaiming the globe as a monument is a bit dramatic, but it does illustrate how commemoration serves a fundamental role in the monumentalization process.

One bright and early Sunday morning I too commemorated Captain Cook at a much less pretentious monument. This monument is a simple plaque of carved marble that is now submerged in the shallows of Kealakekua Bay, on the island of Hawai‘i. It is a difficult place to find, requiring a four-mile hike along a meandering trail down the steep hills surrounding the bay, used more frequently by feral pigs than people. My trek required the tempo of a forced march; it was my final day of an extended research project in the area, and I was scheduled to depart for the airport in three hours. My wife and young daughter prudently declined my offer of an early morning
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hike and were resting soundly in our hotel room. The sunrise was striking that morning—the vegetation lush and verdant from the winter rains, the ocean sparkling blue. I walked at a brisk pace, paying more attention to the beckoning ocean rather than the trail before me. I was suddenly startled by a family of feral pigs wandering as well, who paused for a moment to eye me skeptically, disappearing into the nearby brush with loud snorts. As I approached the shoreline I began to anxiously comb the shallows for the submerged granite marker, difficult to locate since it was only visible at low tide. I quickly stripped off my boots after finally spotting it, and waded out into the water (Figure 1.12). Finally satisfied, I turned to enjoy a brief interlude—taking in the smoothness of the plaque beneath my feet, the luxuriant green shoreline, and the sunbeams dancing in the blue waters of Kealakekua Bay. It was here that Cook was struck down and killed in an argument and subsequent scuffle with local Hawai’ians. Under the surf below me the plaque read: “Near this spot Cap. James Cook met his death, February 14, 1779.”

This encounter underscores the fundamental relationship that exists between monuments, space and time. No matter what preconceived memories or ideas we possess, any direct physical encounter with a monument—even the simplest slab of stone—will envelop us with an onrush of sudden realizations. Through direct bodily experience, we are forced to come to terms with new meanings. Perhaps we seek out a monument for reassurance—to reinforce memory or strengthen an existing meaning. At other times we need fresh dialogue, an active challenge for our known preconceptions and memories. In either case, we seek to create a transcendent vision of the past, known only through embodiment. So no matter what preconceptions we might possess regarding Captain Cook, whether as emissary of

Figure 1.12 Death marker dedicated to Captain James Cook Kealakekua Bay, Hawai’i. Source: Author photo.
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Making sense of monuments, all who visit Kealakekua Bay must at the very least face a vision of his last moments of life, the spatial context of his death. Perhaps this encounter reshapes our beliefs, urging us to accept new meanings regarding his life. Or perhaps it will merely reinforce what meanings we have already accepted as relevant and true.

Taking our cue from the Captain Cook memorial, it is logical to ask the question: what meanings do we assign to monuments? How do we use them when we commemorate? Commemoration represents the shared historiographic soul of a society. What we commemorate is who we are—and where we commemorate communicates potent symbolic meanings. For example, our modern Euro-American traditions of commemorative practices are saturated with moments of remembrance; we collect items of nostalgia, celebrate specific days of remembrance or holidays, and visit commemorative locations such as museums and libraries. Even our recreation time is embedded in commemoration—battlefield reenactments, historic tours, zoological gardens, and historical theme parks. Not only do modern Americans and Europeans welcome acts of commemoration, but we have also pioneered new forms within the last century, particularly those associated with tragedy, violence, and shame (e.g., battlefield monuments, Holocaust monuments, and fallen hero memorials). It is with clarity that historian Andreas Huyssen states (1995: 251): “the issue of remembrance and forgetting touches to the core of Western identity, however multifaceted it may be.”

The renowned philosopher Pierre Nora (1989: 19) has described this pervasive increase in remembrance, dubbing it the “era of commemoration,” focusing upon the rise of commemorative places of memory (lieux de mémoire) that serve as buffers between formal history and collective memory, affixing the past to specific physical and tangible locations, “just as if gold were the only memory of money.” The physicality of places of memory freeze time and immortalize the past, manipulating what we remember and what we forget, but are also easily modified, appropriated, or recycled. Mass media, electronic communication, rapid transit, and equal access to information about the past have shifted the process of who inscribes our history, minimizing the role of the state as the official arbitrator of the past and creating a more democratized (but contentious) forum for those who wish to write history or influence collective memory (see Erőss 2017).

Nora’s argument that commemoration changes over time is a very salient point. Neither commemoration nor memory is straightforward or simple; it does not follow a one-way trajectory.

Collective as well as private memories are subject to constant reformulation, and the diversification of the politics of remembrance explains why monuments can represent a multiplicity of meanings. Changing commemorative practices are not strictly a modern phenomenon, and have no doubt occurred in other places and in other periods of history. In fact, a cyclical discourse of centralized and privatized commemorative social practices may be the norm, the first being more prominent during periods of centralized
political authority, the other more prominent during phases of privatization or even societal fracturing. The fact that commemoration in any form is contingent upon a place and a time, and that remembrance inevitably involves dialogue, points to monuments being important indicators for measuring changes in commemorative practice over time. Monuments say more about those who built them than they do about those they were built for, making them an effective tool for examining how architecture metamorphoses space, and how space contours and tracks commemorative change.

The following chapters present a series of case studies organized along the spatial-cognitive metaphors presented in this chapter, the goal being to add nuance to our interpretations of monumental space and place. These case studies are organized into three categories. Chapter 2 goes into more detail regarding the spatial-cognitive metaphors of time, illustrating how six different monuments contour various temporal scales. Chapter 3 addresses movement—encoding, performance, and wayfinding—presenting examples of the direction and flow of activates and monumental practices. Chapter 4 examines six monuments that employ the spatial-cognitive metaphors of scale, each offering a uniquely overpowering scalar and sublime experience. Taken as a whole, these chapters represent a journey into monumental-ity that spans a diverse set of locations and time periods. Despite such an assortment, a close logical connection binds them together. This connection is related to the ways in which they similarly contour space in order to create social meaning. Who exactly undertakes acts of commemoration and how do they employ place and spatial sequencing to achieve their goals? Does collective interaction or unity exist in the use of spatial contours and their associated metaphors, or is there a multitude of competing voices that contest memory amongst one another? By addressing such questions, I seek to demonstrate that, at a certain level and in particular ways, there exists some consistency in the way space is structured and bodily experienced; I attempt to do so without diminishing the emic cultural principles that are similarly at play in structuring commemoration and generating contextual meaning.

Notes

1 Theorists have long applied linguistic or semiotic concepts to culture, which tend to privilege its idealist or symbolic qualities. Anthropologists were the first to realize this; pioneers in the field such as Claude Levi-Strauss and Roland Barthes used what we call a “linguistic homology” to define culture as a series of sign systems made up of symbols that convey ideas and operate within an analyzable structure.

2 Renfrew’s diligence has encouraged other archaeologists to likewise develop innovative approaches for mingling the material world in such a way that they are ontologically linked to the human mind (e.g., Knappett and Malafouris 2008; Malafouris 2010; Malafouris and Renfrew 2010; Olsen 2003, 2010; Van Reybrouck and Jacobs 2006).
3 Henri Lefebvre was a key contributor in the European avant-garde movements of the 20th century, and his most important cross-disciplinary contribution is his investigation of the social construction and conventions of space. Lefebvre’s writings on the geography of social relations are diverse, stemming from his studies of “everyday life,” rural economy, suburbia, and urban geography. His *tour de force* on the subject is his book *The Production of Space*, a systematic discussion of some of his most important concepts regarding space—its social transformation, its historical development, spatial dialectics, the notion of urban centrality, and architectonics.

4 Lefebvre is not the only one to envision a dialectic between absolute and abstract architectural spaces. Amos Rapoport (1982) in his work on built environments also refers to the notion of interplay between what he calls the perceptual and the associational. For Rapoport, the perceptual represent the physical architectural elements recognized by the user, while the associational are the actual social connections made identified by the perceived elements. Social behavior is then dictated by the intersection of the perceived versus the associated, the physical cuing the behavioral. While Rapoport’s model focuses more on the specific behavioral actions dictated by space rather than conceptual spatialities, he does advocate the same relationship between the built environment and the cultural realm outlined by Lefebvre.

5 Mental spaces are not always exact analogs of the physical world (see Muehrcke and Muehrcke 1992: 8; or Gell 1985).

6 Although not as functionally explicit as the cognitive scientists, anthropologists have long recognized that mental cognition has analogical and metaphorical components. Both early and modern ethnographers—Fredrick Barth, Franz Boas, Frank Hamilton Cushing, Lucien Lèvy-Bruhl, Edward Evans-Pritchard, and Claude Lèvy Strauss to name some eminent examples—have explored how metaphor is an important principle for expressing the analogic mental spaces present in many non-Western societies (current treatments include De Boeck 1994; Ortman 2000; Shore 1996; Tilley 1999).

7 Some gestures and “body language” postures are closely related to language and employed only while talking. Other gestural elements appear to function independent from speech, a category that psychologist David McNeill (1985, 1996) calls **emblematic gesture**. Emblematic gestures are arbitrary from one culture to the next, and would include such things as the “thumbs up” sign to indicate everything is all right, or the “hand up” sign to indicate stop, or “pointing” to provide spatial reference. Such gestures may function independently in communicative exchanges, and are frequently employed in ritual. They represent communicative movement; visual signs for the observer that help represent topological meanings, particularly spatial representations, contexts that are more expedient that using words.

8 The distinguished architect Amos Rapoport (1982) specifically acknowledges the importance of physical attributes for architecture. In his book *The Meaning of the Built Environment*, he discusses three physical categories of architectural form that structure social behavior: that of height, color, and redundancy. These visual elements are used alone or in combination to provide visual clues into the meaning of any given spatial arrangement, communicating specific social messages.

9 Connerton emphasized the process of **transference** using repetitive social communicative acts: (1) commemorative ceremonies and (2) bodily practices. But while many scholars have focused upon the process of memory construction, few are able to actualize it. One pioneering effort to integrate collective memory and the inscribed practices of history is the work of social scientist Barry Schwartz
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(2000, 2008), who documents in his research on American presidents in historical memory how inscribed factual histories create “core elements” of memory that permeate into collective thought. He argues that certain commemorative symbols of Abraham Lincoln, for example, shift and change over time as collective memory emphasizes or downplays certain “truths” according to social experience. Another leading effort is the work of historian Martha Norkunas (2002), who traces the changing relationship between public memories using war memorials and community oral traditions.
10 These include other prominent social theorists such as Maurice Merleau-Ponty, Michael Foucault, and Pierre Bourdieu, who have in turn stimulated debate and discussion in a variety of fields. Archaeologists have entered the fray as well (Hamilakis et al. 2002; Joyce 2005; Rautman 2000; Tilley 1999).
11 Stewart (1993: 60) uses the souvenir and the pathos of nostalgia to adroitly link collectible items and narrative: “The transcendence presented by the miniature is spatial transcendence, a transcendence which erases the productive possibilities of understanding through time. Its locus is thereby nostalgic. The miniature here erases not only labor but causality and effect. Understanding is sacrificed to being in context. Hence the miniature is often a material allusion to a text which is no longer available to us, or which, because of its fictiveness, never was available to us except through a second-order fictive world.” Thus the miniature is about an experience of the interior universe and the process by which that universe is constructed.

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Notes

1 Theorists have long applied linguistic or semiotic concepts to culture, which tend to privilege its idealist or symbolic qualities. Anthropologists were the first to realize this; pioneers in the field such as Claude Levi-Strauss and Roland Barthes used what we call a “linguistic homology” to define culture as a series of sign systems made up of symbols that convey ideas and operate within an analyzable structure.

2 Renfrew’s diligence has encouraged other archaeologists to likewise develop innovative approaches for mingling the material world in such a way that they are ontologically linked to the human mind (e.g., Knappett and Malafouris 2008; Malafouris 2010; Malafouris and Renfrew 2010; Olsen 2003, 2010; Van Reybrouck and Jacobs 2006).

3 Henri Lefebvre was a key contributor in the European avant-garde movements of the 20th century, and his most important cross-disciplinary contribution is his investigation of the social construction and conventions of space. Lefebvre’s writings on the geography of social relations are diverse, stemming from his studies of “everyday life,” rural economy, suburbia, and urban geography. His tour de force on the subject is his book The Production of Space, a systematic discussion of some of his most important concepts regarding space—its social transformation, its historical development, spatial dialectics, the notion of urban centrality, and architectonics.

4 Lefebvre is not the only one to envision a dialectic between absolute and abstract architectural spaces. Amos Rapoport (1982) in his work on built environments also refers to the notion of interplay between what he calls the perceptual and the associational. For Rapoport, the perceptual represent the physical architectural elements recognized by the user, while the associational are the actual social connections made identified by the perceived elements. Social behavior is then dictated by the intersection of the perceived versus the associated, the physical cuing the behavioral. While Rapoport’s model focuses more on the specific behavioral actions dictated by space rather than conceptual spatialities, he does advocate the same relationship between the built environment and the cultural realm outlined by Lefebvre.

5 Mental spaces are not always exact analogs of the physical world (see Muehrcke and Muehrcke 1992: 8; or Gell 1985).

6 Although not as functionally explicit as the cognitive scientists, anthropologists have long recognized that mental cognition has analogical and metaphorical components. Both early and modern ethnographers—Fredrick Barth, Franz Boas, Frank Hamilton Cushing, Lucien Lévy-Bruhl, Edward Evans-Pritchard, and Claude Lévy Strauss to name some eminent examples—have explored how metaphor is an important principle for expressing the analogic mental spaces present in many non-Western societies (current treatments include De Boeck 1994; Ortmann 2000; Shore 1996; Tilley 1999).

7 Some gestures and “body language” postures are closely related to language and employed only while talking. Other gestural elements appear to function independent from speech, a category that psychologist David McNeill (1985, 1996) calls emblematic gesture. Emblematic gestures are arbitrary from one culture to the next, and would include such things as the “thumbs up” sign to indicate everything is all right, or the “hand up” sign to indicate stop, or “pointing” to provide spatial reference. Such gestures may function independently in communicative exchanges, and are frequently employed in ritual. They represent communicative movement; visual signs for the observer that help represent topological
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1 From a late 7th century B.C. stele from Corecyra, Greece. Literally: σᾶµα τόδε Ἀρνιάδα· χαροπὸς τόνδ’ ὀλεσεν Ἀρες βαρνάµενων παρὰ ναυσιν ἐπ’ Ἁραθθοιο ρυµαισα, πολλὸν ἀριστεύοντα κατὰ στονόϝεσαν ἀρυτάν.

2 Literally: “Aliquoties mortuus sum sed sic nunquam.”

3 Literally: “Her sputedlad seo gecpydraednes de.”

4 Utterance 600 para 1653. Literally: “tem de en ek o ek ha Meren’ra, ha kat ten ha mer pen em o ka, unen ka en Meren’ra im ef rudj en djet djet.”

5 Interestingly, statues of mounted soldiers, also called *Valor* and *Sacrifice*, frame the entrance to the Arlington Memorial Bridge in Arlington Country, Virginia. These statues were commissioned and sculpted by Leo Friedlander in 1929. Due to budget issues they were not cast or erected until 1951.

1 Literally: “ad augmentandum et amplificandum nobile manuque divina consecratum monasterium, virorum sapientium consilio, religiosorum multorum precibus, ne Deo sanctisque Martyribus disipserat adjutus, hoc ipsum incipere aggrediebar; tam in capitulo nostro quam in ecclesia divinae supplicans pietati, ut qui initium est et finis, id est alpha et omega, bono initio bonum finem salvo medio concopularet, ne virum sanguinum ab aedificio templi refutarei, qui hoc ipsum toto animo magis quam Contantinopolitanas gazas obtinere praeoptaret.”
2 Gothic architecture is broken down into the Early (1120–1250), High (1250–1400), and Late (1400–1500) periods. Different sub-styles are also present in different regions. The change from late Gothic to Renaissance style is somewhat difficult to discern, but with the Renaissance came a general admiration for the simplicity of classical antiquity again that ultimately led to the abandonment of Gothic design features, which were deemed both overly complex and barbarous.

3 *Rhetorica ad Herennium* III.xvi.29: “Constat igitur artificiosa memoria ex locis et imaginibus.” Moreover Cicero (*Oratore* II.LXXXVI.354) writes thirty years later that places are used “like wax tablets and symbols in lieu of letters [atque ut locis pro cera, simulacris pro literis].” Quintilian notes 150 years later [*Institutio Oratoria* XI.2.20]: “as soon as the memory of the facts requires to be revived, all these places are visited in turn and the various deposits are demanded from their custodians, as the sight of each recalls the respective details [“cum est repetenda memoria, incipient ab initio loca haec recensere, et quod cuique crediderunt reposcunt, ut eorum imagine admonentur.”]. Medieval scholars such as Albertus Magnus of the thirteenth century perpetuated this ancient formula of conjoining place and memory as a standard design practice for cathedral architects.

4 The Latin term *simulacrum* means “likeness” or “similarity.” *Simulacra* designs included misshapen animals and humans, gargoyles, baboons and monkeys, pagan green men, and lewd figures. They adorned carved pillars, vaulted arches, corbelled ceilings, massive capitals, choir stalls, small alcoves, and wall façades. Architectural detailing was important because the large size of a cathedral often obscured smaller architectural details or contextual features. Detailing drew attention to specific minutiae of the architectural design, features that held specific meanings or memories. Each *simulacrum* was placed in a unique location, dormant until a viewer or religious pilgrim happened upon it, at which time the icon drew attention to or “revealed” a specific memory associated with it.

5 Cathedral funding relied on a local income derived from taxes, tithes, donations, and loans, all ultimately deriving from agricultural production, which could itself be highly unpredictable from year to year. The lack of a formal banking system made it difficult for a cathedral chapter to obtain any stable or sustainable cash flow. Money lending was usually undertaken with Jewish moneylenders because usury was a Christian sin. If debts became unmanageable, indulgences were exchanged for debt release.

6 Stones were hewn by stonemasons using the saw, hammer, and chisel; and much of Europe’s limestone was harder than that used by the ancient Egyptians for the Great Pyramids. Paris itself sits upon a maze of old quarry tunnels used to provide the raw material for the construction of most of its large buildings, including Notre-Dame. They of course had to be transported to the construction site, either by cart or by raft, after which masons carved specified designs using two-dimensional wooden templates. Often hundreds of templates were required for a single cathedral. To set stones in place, mortar was prepared from crushed chalk (calcium carbonate) baked into quicklime (calcium oxide). Quicklime was then mixed with water and sand to create mortar putty that was so caustic it required the stone-layers to wear gloves. Although drying slowly, quicklime, unlike today’s cement, was less rigid and readily accommodated block strain or movement without cracking.

7 Two-thirds of any given construction crew were made up of local unskilled peasant labor who sought some sort of supplemental family income. Most commuted from their homes, while some were migrant laborers who had to be boarded, particularly the skilled artisans. The average work day was demanding; requiring over twelve hours of labor a day during the summer, and about eight hours during the winter. Local landowners, who controlled the tenant laborers that
commonly made up the cathedral work force, thus played a significant role in the political organization of cathedral-building projects of the era.

8 The principles and methods of the ancients were mostly forgotten, except for some sparse hints found in the works of Vitruvius’ *De Architectura*. Perhaps because of this very vacuum, they were able to initiate an entirely new school of design upon which to pin their economic and spiritual hopes upon.

9 *Dionysii De Divinis Nominitibus* c. 4, l. 5, n. 339: Literally: “Deus tradit pulchritudinem in quantum est causa conscientiae et caritatis in omnibus; sic enim hominem pulchrum dicimus, propter decentem proportion in quantitate et in situ et propter hoc quod habet clarum et nitidum colorem.”

10 From the *Curculio* 475–476, written by Plautus. Literally: *In foro infumo boni homines atque dites ambulant, in medio propter canlem, ibi ostentatores meri.*

11 Literally: “Senatus Populusque Romanus incendio consumptum restituit.” This inscription is still visible today for those who visit the ruins.

12 Literally: *Κρήτη τις γαί’ ἐστι, μέσῳ ἐνὶ οἴνοπι πόντῳ, καλὴ καὶ πίερα, περίρρυτος: ἐν δὲ άνθρωποι πολλοὶ, ἄφαρα ἐνὶ ἐννήκοντα πόλισσας. άλλῃ δ’ ἄλλων γλώσσα με μημένη: ἐν μὲν Ἀχαιοὶ, ἐν δ’ Ἐτεόκριτης μεγαλύτεροι, ἐν δ’ Κύδωνες, Δωριείς τε τριγάκες διοί τε Πελασγοί. τίτσι δ’ ἐνί Κνωσός, μεγάλη πόλες, ἄνθιση τε Μίνως.

13 Major time periods include: (1) Pre-palatial Period—EM I-MM IA (ca. 3100–1900 B.C.); (2) Protopalatial (or Old Palace) Period—MM IB-MM IIB (ca. 1900–1720 B.C.); (3) Neopalatial (or New Palace) Period—MM IIIA-LM IB (circa 1720–1470 B.C.); and the (4) Post-palatial Period – LM II – IIIIC (circa 1470–1050 B.C.).

14 For example, the central court at Knossos was large enough to have held up to 5,435 people, assuming 2 and 0.2 square meters per person, equivalent to about one quarter of the total estimated population of Neopalatial Knossos (14,000–18,000 individuals).

15 Graeme Davis disputes the association of The Ruin with the Roman city of Bath, first made by Heinrich Leo in 1865 and continued by subsequent translators who adjusted their translation accordingly (e.g. Hamer 1970: 25–27).

16 Popular belief has long held that Stonehenge’s primary viewing axis was from inside the circles’ center at the Altar Stone, and that when facing northeast towards the Avenue on summer solstice morning the sun appears to rise directly over the Heel Stone. See Atkinson (1979: 93–97). This observation, according to the recent work (Pitts 2000: 135; North 1996; Ruggles 1999; Sims 2006), is coincidental to Stonehenge’s primary viewing axis outside the henge at the Heel Stone and looking southwest towards the Altar Stone on winter solstice evening to mark the setting sun. When looking at the tapered sarsen stones into the inner horseshoe from the Heel Stone, Stonehenge appears to be almost a solid block of stone that frames the setting sun between the grand trilithon uprights as it sets upon the Altar stone (Pitts 2000: 135). Moreover, when walking the last 78 meters to the circles from the Heel Stone at winter solstice sunset a “standstill” illusion is created that freezes the setting sun in place (thus delaying the sunset for the observer) as slowing rising eye of the observer counteracts the sinking motion of the setting sun. A second important observation that may be made from the Heel Stone is that of the setting moon at minor southern standstill within the Grand Trilithon window, when the moon’s setting is stopped short of its full range. The importance of lunar observations is further strengthened by the fact that the Aubrey Holes, a ring of 56 pits that predates the bluestones may be symbolically and/or astronomically linked to the 28-day lunar cycle. The symbolism of 56 is explicitly documented by the Greek historian Plutarch, who associated the number to the ancient god of Typhon/Seth, identified as the
shadow of the Earth that covers the Moon during lunar eclipses (Johnson 2008: 259–260). The exact function of the Aubrey Holes is still under debate.

Thomas argues that the concentric division of henge monuments and evidence of circular processions within henges suggests a more nuanced dichotomy of simple inside-outside division of space (and therefore movement) than we are currently able to discern.

The gulf that exists between humans and the cosmos today was not so pronounced in the ancient world. The effects of Copernicus’ discovery that the universe does not revolve around the earth have left the modern world struggling to find a place of significance in the cosmic order. For a uniquely modern terra-centric view see the work of the Cold Dark Matter theorist Joel Primack (Primack and Abrams 2006).

A 0.1107 troy ounce gold ducat was worth 5 shillings in 1512. Therefore 3,000 ducats equaled £760, or about £308,000/£3.74 million today.

This is equal to £12,742 in 1586, or about £2.14 million/£28.7 million today. In contrast, the 2005 cost of returning the Axum Obelisk seized by Italian dictator Benito Mussolini from Ethiopia in 1937 was $450 million.

It has been suggested the Pythiac trance-state was invoked through the use of volcanic vapors containing ethylene that would have a similar effect as glue or paint thinner.

Literally: Sonez que du haut de ces monuments quarante siècles vous contemplent.

Literally: Hij zich naar de Barabudur om de duizend beelden te zien, hoewel’t reeds eene voorspelling van de voorvaderen was, dat als een prins die beelden zag, deze plotseling ongelukkig zou worden want daar was een beeltenis bij, voorstellende een satrija in een kooi opgesloten.
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