THE UNFINISHED

Frontispiece: Great Penance Relief, Mamallapuram, detail of upper right quadrant

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STONE CARVERS AT WORK ON THE INDIAN SUBCONTINENT

Vidya Dehejia and Peter Rockwell

Photographs by Prasad Pawar

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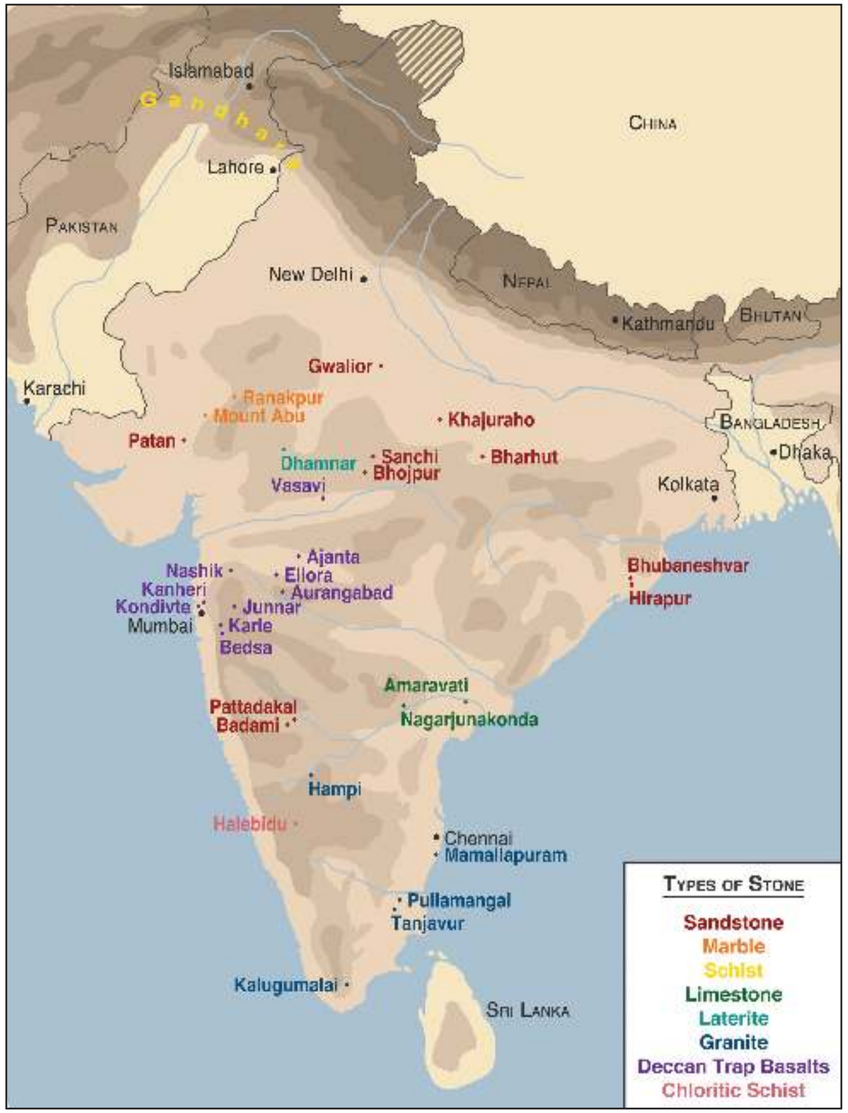

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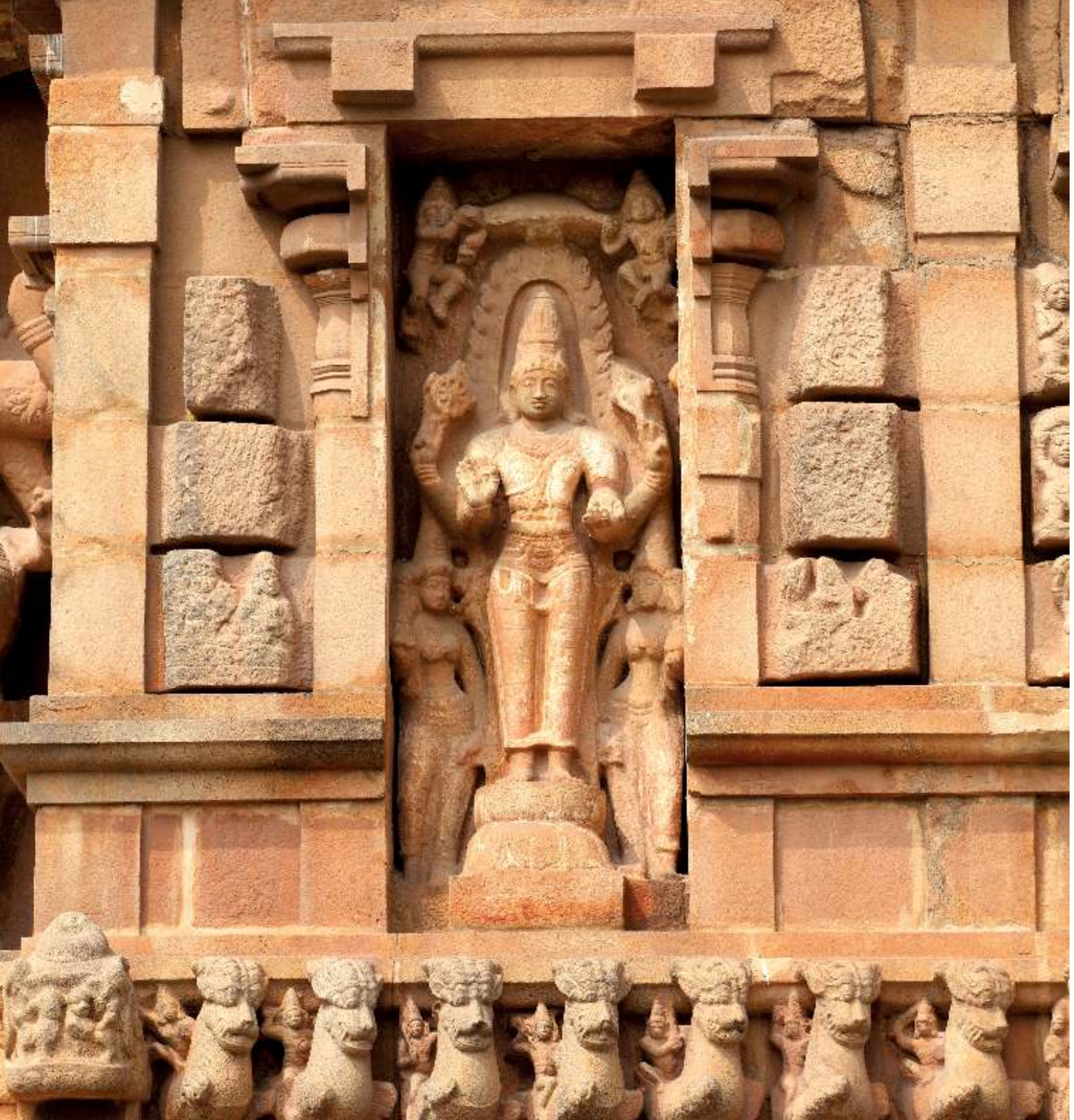
This exploration of unfinished stonework in India has its genesis in the fortuitous introduction of two scholars working in seemingly different fields. Having taken classes with both, Elisbeth Tiso decided that Peter Rockwell and Vidya Dehejia had a deep common interest in stone, its carving qualities, and in the tales that unfinished monuments surely had to tell. Prior to the initial exploratory field trip to India, each scholar assigned to the other what they considered essential preparatory work: Dehejia gave Rockwell a reading list intended to familiarize him with the socio-economic history of pre-modern India; Rockwell presented Dehejia with a block of sandstone in his studio near Florence and got her to spend ten days with hammer and chisel so that she would recognize tool marks at sites in India. A collaborative grant from the National Endowment for the Humanities enabled this project to take shape and form; for their enthusiastic support, we are immensely grateful.

We would like to express our gratitude to numerous other institutions and individuals. The Archaeological Survey of India, as well as various State Archaeology departments, facilitated our visit to numerous sites and allowed us to photograph monuments in detail. The *chowkidars* (guards) and site attendants allowed their innate curiosity to overcome their suspicion of two individuals who were interested in what appeared to them to be uninteresting unfinished details. Among those who went out of their way to help us I will mention only V.N. Prabhakar of the ASI, posted at that time as Head of the Aurangabad Circle; his cooperation was immensely helpful in getting us started on our project. Geo-archaeologist Randall Law travelled to several sites discussed in our book to examine the stone at the site and to seek out quarries for constructed sites; his contribution to our project has been exceedingly important. Photographer Prasad Pawar of Nashik, whose photographs enrich this book, was remarkable in his enthusiasm for our project; he traveled to remote sites and at the site of Junnar dared assault from teeming beehives in order to photograph the neglected caves. Dr Arvind Singh of Gwalior University, an expert epigraphist, was kind enough to travel with Dehejia to Khajuraho and Bhojpur where they jointly examined sculptors names and masons' marks; we are deeply indebted to him for his generous cooperation, as also to Adam Hardy who shared his study of Bhojpur while it was still in typescript. Abhisekh Kumar, Geslin George, Chandni Naidu and Samim Sekh, young architects from a premier institution, the National Institute of Technology in Trichy, accompanied us to several sites and produced the line drawings that accompany the text; to them we are deeply grateful.

In Italy, Rockwell extends his thanks to ICCROM, UNESCO, and the Istituto Centrale di Restauro, and in particular to W. Brown Morton III who first invited him to lecture on stone carving techniques. His thanks go to the restorers at Cooperativa Beni Culturale who assisted him in his study of technique on several monuments including the Orvieto cathedral. His special gratitude goes to Domenico Faccenna who invited him to join the excavations in the Swat valley of Pakistan, and to the many stone carvers in Carrara and Rome who shared their expertise with him.

Back in the United States, we are indebted to those who read preliminary drafts of our material, gave us feedback, and urged us not to worry about the fact that our material might fall in the cracks between art history, carvers' techniques, quarries and archaeology. I would especially like to mention Milo Beach, Rick Asher, and Bob Brown for their continued encouragement. George Wheeler, scientist in the field of conservation with a joint appointment at the Metropolitan Museum of Art and Columbia University, and conservation specialist John Twilley, gave of their time to meet with us to discuss several issues. We are deeply grateful to students at Columbia University, both those who accompanied us on an initial visit to Mamallapuram, and to those who more recently enrolled in a course on The Unfinished. Their comments and questions, both on-site and in the classroom, helped open up the subject in unexpected ways. The authors are indebted to the Visual Resource Center at Columbia University and especially to Gabriel Rodriguez and Emily Shaw who helped to prepare the visual material for publication. We are deeply indebted to Lydia Tugendrajch, a rare individual who seems to switch seamlessly between law and art history and whose invaluable advice has made this a tighter and more focused book. The authors would like to express their gratitude to Priya Kapoor of Roli books who undertook this publication, and specifically to our editor Neelam Narula and art director Sneha Pamneja who made this book come alive. A final word of thanks to the Renard Family Foundation for a subvention that helped defray the costs of publication; without their support, this book would not have been as richly illustrated.



Facing page: *Vishnu niche with unfinished vignettes, South wall, Great Temple, Thanjavur.*

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Prologue

ART HISTORY AND THE LANGUAGE OF STONE

Any object worked in stone is a document that, correctly understood, describes its own manufacture; it is at least partially legible without specific knowledge of the tradition that created it. This is especially true of unfinished works though, to a lesser degree, it is also true of finished works. A piece of worked stone has a language inscribed on its surface that can be read by those who have learned the signs. For a stone carver this is a truism; for most of us, it is a fact that needs constant reiteration. It is hoped that the various chapters of this book, devoted in one way or another to stones, stone monuments, stone carving techniques, and to interpreting the marks left by stone carving tools, especially on works where the final 'finish' has not obliterated such marks, will facilitate the reading of this language of stone.

In pre-modern South Asia, historians and men of letters, priests, monks and nuns were not particularly interested in the process by which an architectural or sculptural work was created. We do not have the equivalent of the twelfth-century friar Vincent of Beauvais who provided detailed information on the building of the Beauvais cathedral, nor of a sixteenth-century Vasari or Cellini whose writings on the stones and tools used by individual Renaissance artists is such a valuable resource for the study of their works. The British in nineteenth-century India were the first to study the ancient monuments of the subcontinent. Regardless of their motive, which may have been based on the adage 'to know is to control,' their process of documentation gave Indian monuments a status as objects worthy of investigation. In issues of the journals they started, such as *Art and Industry*, they frequently also documented existing processes of working in a range of material including metals, textiles, and wood. In more recent years, important work on the creation of works of art have come from both religious historians and anthropologists; their focus is, however, quite naturally singular and distinct from the concerns of art historians.

Though the discipline of art history has a relatively recent history in India, today it draws upon a range of sister disciplines. Historical archives yield information on the economics of art and patronage, and the exchange of gifts. Religious trends expressed in sacred and secular literature that is contemporaneous with an artistic monument, aid in an understanding of sacred monuments, which comprise the bulk of surviving pre-fifteenth century structures. An appreciation of the social and political milieu within which a structure was commissioned is part of all art historical study and, whenever possible, an anthropological perspective is also employed. Present day practices also help towards an understanding of ancient monuments. The *silpasastras*, ancient texts on architecture, sculpture, and iconography, probably compiled after structures were built rather than serving as formulae for their construction have, on occasion, been consulted. A handful of scholars have focused on tracing the status and position of the artists constructing monuments in pre-modern India, largely through an analysis of inscriptions that occasionally provide the names of artists. Scholars dealing with the art of manuscript painting have been the first to focus on process and technique, issues of deep interest to us by examining the paper, brushes and colours used by the artists. The most recent trend in painting studies has been to rescue manuscript painters from anonymity and provide them with names, even if that name is only 'Master of such-and-such a manuscript'. This book aims to add one more perspective that art historians might find useful for studying any artistic complex cut from stone – the impact on style and duration of work of the variety of stone used for the monument, the nature of the carving tools employed and their manner of usage and the makeup of the teams of craftsmen involved in the construction or excavation of a monument. We hope that our exploration of these and related issues will provide an additional perspective that will prove relevant to art historians.

In order to appreciate the language of stone, it is useful to commence this work with a consideration of four basic laws of stone methodology that form the foundation for the processes of stone-carving.[1] First, the nature of stone-carving always involves taking material away from the original mass; while this is obvious, its consequences are not necessarily evident. It means that most method and process in stone-working is *subtractive*. Subtractive thinking requires the worker or planner always to bear in mind that once any part of the original mass is taken off, it cannot be put back. This in turn means that careful planning is necessary. Additions of small pieces of stone to the built mass or block have sometimes been made in order to cover mistakes, as for instance when a small piece of stone was added to a column capital at the temple of Vespasian in Rome to make the finished column of the same height as others in the row;[2] but little evidence of this exists in south Asia. The second law of stone-working is that the nature of the stone always has an influence on the finished project. The differences in the hardness of various stones are so important that they are often expressed in terms of pricing. In the United States, for instance, a piece of work that might cost $1000 in limestone will double to $2000 in marble, and increase to $3000 in granite; this pricing strategy is based on the hardness of the stone, which directly influences the time taken to carve it, and not on the actual cost of the material. This is a factor of import to be borne in mind when studying the many granite monuments of south India. The third law of stone methodology is that the material available for tools, and the variety of such tools, is a major factor in the methods and processes of stone-carving. However, stonework on the Indian subcontinent, where the barest minimum of differentiated tools was developed, cautions us against exaggerating the importance of this feature. The fourth law, the law of simple sequence, is an observation that applies almost universally to the processes of stone-working: *stone is worked by a series of simple small steps.* Each step in working stone is a small change from its predecessor. Making a big change by a sequence of small changes is in fact one of the most reliable ways of controlling that change. Certain unfinished sculptures in our study present us with the entire range of steps towards the creation of a finished product.

Rock-cutting, or the process of creating monuments from living rock, which was popular on the subcontinent for over a millennium, requires us to bear in mind several major technical constraints. The first is one of site-ing, or of deciding upon the section of a hillside, preferably with an area of level rock in front, where the monument should be excavated or carved. Related to this is the quality of the stone since it is difficult to be sure of the extent

of a bed of good stone before the preliminary cutting commences. A third limitation relates to time. A structure that is made entirely by carving from a mountainside cannot be organized so that the work is carried out by teams working at the same time in the way that can be done with a constructed building. If the shrine must be entered from the hall in front, the shrine simply cannot be commenced until the hall has been carved because there is no access to it. A fourth issuein rock-cuttingis the sheer amount of stone that must be taken away. While the transport of quarried blocks to the site of constructed monuments is generally factored into the time and cost of a structure, the problem of the removal from rock-cut monuments of vast quantities of rock waste in the form of blocks and chips is largely overlooked. Two further technical problems exist. Firstly, spaces must be seen from the inside out. Since most methods of controlling a construction process are based on being able to measure from the ground up, carving out a space into a mass of rock creates the problem of where you measure from, and how you measure. Finally, a more immediate problem for the carvers in rock-cut work is the necessity of working in cramped spaces, often in uncomfortable positions. A ceiling, for instance, can only be carved by working over one's head with hammer and chisel.[3] The extraordinarily accomplished rock-cut carving, found in such abundance in India, leaves one with deep respect for the stone carvers' technical abilities.

The sheer number of unfinished stone monuments in India is staggering and examples appear at some of India's most famous and well-studied sites that include rock-cut Ellora, Ajanta, and Mamallapuram. Unfinished work also appears on built temples celebrated for the intricacy of their sculpted decoration, such as those in Hoysala kingdom or in Orissa. In other words, most of the sites we examine in these chapters are featured in standard surveys of India's art. The very fact that readers of such surveys have not been alerted to the extent of the unfinished reveals how easy it is for our eyes to gloss over the incomplete and focus on the magnificence of the finished portions. Our intention here is by no means to provide an overall coverage of India's unfinished work. Rather, we have elected to address a range of issues related to stone-carving by examining a select number of monuments at specific sites. If temples and caves reappear from one chapter to the next, it is because we made the calculated choice not to go the standard and valid route of examining each site in its entirety. Rather we chose to focus on specific issues of consequence in the context of unfinished work, because we believe such issues gain added weight and significance through discovery of their repetitive occurrence at site after site. We trust that readers interested primarily in individual sites will find the Index a useful tool to pursue their objectives.

We found it a useful tool to commence our study with a classification of unfinished work into two basic categories, that of unusable unfinished monuments versus usable unfinished monuments. To clarify what might seem a vague distinction we would cite the difference between a cave with an incomplete shrine and an uncut floor, and a cave with a completed shrine but only partially carved decorative details; the former is unusable, while the latter is usable for worship even though not fully finished. Each of these two groups has a sub-category: 'barely begun' within the unusable variety, and 'almost finished' within the usable category. Once readers are attuned to these divisions, which we elaborate upon in chapter 2, we trust they will find it an exciting challenge to look closely at what is actually present and what is absent, at what is complete as against that which is incomplete.

Photographing unfinished work at Mamallapuram.

The 'why' of unfinished work is an intriguing question to which there is no one single answer; the explanation varies from one site to the next and, in fact, from one section of a monument to another. Thus far, the focus has been on uncovering the specific historical circumstances that led to incomplete work at one site or another (Ajanta and Mamallapuram are prime examples); this involved probing into the decline in the fortunes of individual patrons, which led to a withdrawal of funding and, in turn, to abandoning a monument. Our study of a range of unfinished work, both rock-cut and structural, has led us to come up with two major interpretations that emerge from two distinctly different methodological positions. Our first explanation is the existence of a 'flexible concept of finished work,' in which completion meant the readiness of a shrine for consecration and use, rather than the perfection of every structural or sculptural detail. Such flexibility was perhaps embedded in sacred notions of impermanence and imperfection, and was hence readily acceptable to patrons, architects/foremen, sculptors, clergy and lay-people alike. It is intriguing to note that none of these various stakeholders came forward to complete pillars or images, to remove chisel marks, or provide clear framing devices for sculpted panels, even though such monuments remained in use as places of worship for several hundred years thereafter. While the original intention was undoubtedly to complete the shrine in every way, the final decision on unfinished work may be viewed as an intentional, perhaps collaborative choice, rather than an accident or a failure to successfully complete a commission. It also urges us to reconsider what exactly was considered to constitute an adequate sacred space.[4] Our second explanation for the widespread occurrence of unfinished work emerges from the exigencies of the process of a certain mode of construction. When decorative sculpture, whether architectural or figural, is carved along the building blocks of a monument prior to construction, as against being applied to the surface of blocks already in position, the issue of 'the rhythm of construction' comes into play. This rhythm demands that the supervising architect, constrained to meet a deadline for the consecration and hence completion of the shrine, must of necessity put such building blocks in place at the appropriate time, whether or not their decorative carving is complete. Only thus could a monument rise upwards to receive its crowning stone whose placement signaled its readiness for use. The rhythm of construction thus helps explain unfinished work on an entire category of built monuments.

At the heart of this book are the many varieties of unfinished stone carving that merit close observation to see what is there and what is not, and to appreciate that all the finished work we so admire has been through these various stages of being unfinishedbefore reaching completion. Without unfinished work, we would be making assumptions on process and technique in carving; with unfinished work, we are presented with the various stages in the process. It is helpful to think of the structure of this book as petals of a full-blown lotus that emerge from the central pool of the unfinished. One group of petals labeled Part One considers issues pertaining to the art historical interpretation of unfinished work and consists of five chapters; the second group of petals labeled Part Two focuses on process and technique and contains eight chapters. One might profitably visualize the chapters of these two parts as petals radiating from the central core of unfinished carvings, each asking different questions of that material; while the petals are related one to the other, the issues they contemplate do not necessarily arise from adjoining petals but are motivated by the central core. Chapter 1 of the interpretive semi-circle addresses the question 'Why study the Unfinished?' while chapter 2 examines the various categories of unfinished stonework and analyses the site of Mamallapuram based on this perspective. Chapter 3 details our argument regarding the existence of a flexible approach to finish that we highlighted above. The last two chapters of Part One focus largely on inscriptional material. Chapter 4 discusses dedicatory inscriptions in incomplete caves and monoliths that indicate that patrons inscribed their gifts soon after work started rather than on completion of the monument. Chapter 5 focuses on sculptors' names, often inscribed upside down or sideways, and questions whether these were added as a matter of account-keeping; it concludes with a brief look at the partly-carved blocks of stone in the Bhojpur quarry, several of which carry inscribed names.

The petals of Part Two on Process and Technique commence with chapter 6 that is pivotal to all that follows, and is devoted to the varieties of stone used by Indian carvers, to tool usage and to teams of carvers. It then divides into two groups, of which the first consists of three chapters that deal with rock-cut monuments, and the second comprises four chapters that deal with constructed monuments. Chapter 7 focuses on the cutting of Buddhist *chaitya* halls, demonstrating that unfinished examples point to at least three different ways to cut into a hillside to execute a structure with the same basic plan and elevation. Chapter 8 examines the carving of granite monolithic shrines in south India, while chapter 9 explores the manner in which rock-cut figural imagery was sculpted. The second group shifts the focus to 'built' monuments, commencing with chapter 10's examination of process in carving deities from separate slabs of stone for insertion into the walls of the Sangameshvara temple in the Deccan, where every one of the twelve deity slabs is left incomplete. Chapter 11 addresses the crucial but hitherto ignored issue of 'the rhythm of construction'. It examines incomplete work along the richly sculpted friezes of the Hoysala temples, calling attention to the fact that these are carved against the building blocks that constitute the temple walls so that, finished or not, they had to be put in place to enable construction to proceed. It points out that similar demand for timely placement resulted in the blocks flanking the niche sculptures on the Great Temple at Thanjavur remaining incomplete. Chapter 12 focuses on two temples in Bhubaneshvar, one carved entirely in situ while the other, like many monuments in India, uses a mixed mode of construction. Chapter 13 considers the unusual varieties of schist construction that coexisted in the Swat valley of Pakistan. The Epilogue, inspired by close looking at unfinished and finished monuments, by examining preliminary grids and chisel marks, and considering teams and technique, returns to the site of Mamallapuram to identify the hand of a talented sculptor whom we designate 'The Animal Master of Mamallapuram'. An appendix by archaeogeologist Randall Law, who visited many of the sites discussed in this book, aids in a further understanding of the nature of stone and the variations that exist within any one single type of stone.

This collaborative project between an art historian immersed in the study of the artistic heritage of India and a specialist in stone carving and stone conservation has been an exciting adventure in partnership and cooperation. It has been instructive and enlightening for both scholars who learned a great deal from each other, and even more from the monuments they examined. Dehejia, for instance, learned to carve stone and understand tool marks, while Rockwell found himself immersed in the cultural history of the subcontinent. Both were passionately interested in the unfinished material at an entire range of sites, but approached it from slightly different directions that reflected their personal expertise; it is our hope that our joint perspective will be of interest to the readers of this volume. More than anything else, our field research demonstrated the amazing skill of the stone carvers of pre-modern India whose ability to work with a limited set of tools, adapting the manner of their use to suit varying stones and diverse objectives, is truly remarkable.