



Digital Archetypes: Adaptations of Early Temple Architecture in South and Southeast Asia, by Sambit Datta and David Beynon

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histories such as his end up replicating the problem that they bemoan in their sources: an absence of the indigenous people. All in all, however, May has provided us with a richly-detailed and highly-persuasive history, and a thoughtful interrogation of that history, of one phase in the expansion of British religion and empire. For this we are deeply in his debt.

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Sambit Datta and David Beynon, *Digital Archetypes: Adaptations of Early Temple Architecture in South and Southeast Asia* (Farnham, UK: Ashgate, 2014), ISBN 9781409470649, 224 pp., £58.50, hdbk.

Research areas in the Arts and Humanities are increasingly benefitting from the emergence of technologies that bring fresh ways of studying, documenting, and presenting objects of interest. Digital imaging, three-dimensional (3D) modelling and virtual reconstruction technologies have revolutionised how we study art objects such as paintings, murals, pottery, sculptures, architecture and cultural landscapes. *Digital Archetypes* uses close-range photogrammetry to create architectural 3D models (both virtual and physical). These models are used to examine early (400 to 900 CE) Brahmanic, Hindu and Buddhist temple architecture to understand the spread and evolution of architectural ideas (such as structural shape, form, size, etc.) from their origins in north-western India towards Southeast Asia.

This book begins with a brief history of scholarship on temple architecture in South and Southeast Asia, and across the region. It discusses challenges in working with architectural evidence which is usually fragmented and incomplete, and often found in the form of archaeological ruins and inscriptions. The authors point to the lack of a comprehensive, contemporary textual treatise on the architecture of temples in this region as an additional challenge. In order to gain deeper insight into the relationship between architectural theory and practice in the context of these temples, they contend that the geometry and material composition of surviving monuments provide important clues. The central theme of this book, therefore, is to glean as much information as possible from such material evidence by transforming it into a comprehensive visual representation. The authors claim that such digital reconstructions help researchers better understand the spread of architectural ideas.

The book concentrates on the basic structure of the Brahmanic/Hindu temple cella (sanctum or *garbhagrha*), with a distinct emphasis on early examples that are small and relatively less well studied. Examples from India include Temple 17 in Sanchi, the Parvati temple at Nacchna, Dasavatara at Deogarh, Teli-ka-Mandir in Gwalior, the Arjuna Ratha and Mukundanayar temples in Mahabalipuram, Lad Khan Temple in Aihole and Jambulinga in Pattadakul. Javanese examples include the Arjuna, Sembadra, Gatotkaca and Bima temples of the Dieng Plateau, and Gedong Songo II and Gedong Songo V on Mount Ungaran. Examples of temples from Cambodia include Hanchey B and Kuk Preah Thiet at Hanchey, temples N7, N17 and N23 at Sambor Prei Kuk/Isanapura, and O'Paong and Damrei Krap at Phnom Kulen. The book also considers some additional examples scattered across Southeast Asia.

For the selected case studies, the authors attempt to establish architectural connections between temple structures in five ways: (1) by examining the geometry of the floor plan of the *garbhagrha* of each temple, whether square, rectangular, cruciform, octagonal, etc.; (2) by analysing temples as part of a larger context, whether the temple is an individual structure or

part of a group; (3) by comparing arrangements of various parts of a structure, such as the relationship between the interior cella and the platform, the interior and exterior levels, the doorway and stairway, etc.; (4) by examining the superstructure, whether flat-roofed, double-storeyed, etc.; and (5) by examining the construction material, whether rock-cut, stone, masonry, brick, etc. From the strength of such connections, the authors infer spread, influence and sharing of architectural ideas across the region.

In order to convince readers of the potential benefits of using this technology, the authors could have explained in greater detail how dynamic 3D modelling helps establish the strength of such connections. In particular, the advantages of these techniques over traditional ones could have been demonstrated using drawings/figures, or with supplementary digital material on a companion CD/DVD/website. In addition, it would have been interesting to point out peer-reviewed studies where interpretations based on these digital analysis techniques have filled gaps in our understanding, or allowed us to ask new questions. The technical description of methods used in measuring features on images, together with technological specifications of photo analysis techniques, stereo imaging, camera calibration and photo-based reconstruction are briefly but clearly explained. However, there is little detail on factors to consider while actually photographing a structure, such as the height, distance, space, lighting, etc. required. It would have been particularly helpful to identify the pitfalls and challenges one could face in photographing structures that are larger or more complex than the examples covered in this book. Would, for instance, a structure's size impose limitations on taking photogrammetric pictures in order to produce digital archetypes?

There are inconsistencies in the use of diacritics (for instance, in the seventh vowel in the Devanagari alphabet, 'ṛ', where *Bṛhatsamhitā* has an underdot beneath the 'r', whereas it is missing in the case of *grha* in *garbhagrha*) and in transliteration (for instance, the sixth consonant is transliterated as 'C' in *Caturaṅga*, *Caturguna*, etc. and as 'Ch' in *Chaitya*, *Chakravartin*, etc.).

The book is likely to be of interest to historians of art and architecture in general, and to scholars of South and Southeast Asia in particular. Researchers and students interested in exploring digital techniques for studying architecture would also find this book helpful as an example of a systematic methodology of analysis.

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