

chronological, mortuary, and iconographic data to delineate a model of the evolution of ritual leadership in elite Moche society (chapters 6–8).

A large part of the excavation results have already been published, but Bourget provides more information on procedures and contexts, especially the stratigraphy at Plaza 3A. Photographs are plentiful and the stellar drawings by Jorge Sachún are particularly helpful. In brief, more than 75 adult male warriors were ritually killed inside Plaza 3A during Phase IV (A.D. 400–700). Older men—hypothesized to be ritual executioners—were buried with adolescent retainers in the contiguous Platform II alongside liturgical tools, including a wooden club soaked in human blood. The sacred precinct was built over an ancient cemetery and children were buried as dedicatory offerings beneath it. Data from stratigraphic deposits are interpreted as indicative of alternate events of killing during rainy and dry episodes related to waxing and waning ENSO events.

Bourget's fertile mind and expert grasp of Moche iconography are on full display in his analysis of the plants and animals disturbed, attracted, or helped by ENSO events. Beyond the identification of different faunal taxa depicted in Moche art, Bourget remarks that ENSO creates deleterious conditions triggering infectious disease, especially leishmaniasis. Illustrations vividly bridge the physical effects of the parasitic infections and their depictions. Although Bourget's demonstration is convincing, it is unclear why Moche artisans and ritualists were apparently so obsessed with ENSO. Perhaps by Moche times coastal populations had become so entangled in irrigation farming and maritime activities that political and spiritual leaders found it useful to build legitimacy around growing concerns about the effects of ENSO.

The last two chapters will perhaps be the most provocative and stimulating for Moche scholars. Bourget, in an attempt to connect his iconographic analysis with a model of political history, reviews elite mortuary contexts. He suggests that if Moche rulers were associated with the killing of human captives, changes in political structures must have triggered concomitant shifts in ritual practices and their representations. Through the dating and (re)assignment of decorated objects and elite burial contexts to different stylistic phases, Bourget proposes three “stages” corresponding to (A) Phase III (Early Moche, A.D. 250–450); (B) Phase IV (Middle Moche, A.D. 400–700); and (C) Phase V (Late Moche). During Stage A, images related to Wrinkle Face, Mountain Sacrifice, and the Coca Ceremony were dominant, while the Sacrifice Ceremony, including the Warrior Narrative and the Battle of Animated Objects, appeared during Stage B. For Bourget the widespread depiction of

images related to the Sacrifice Ceremony attests to the unity of “Moche state ideology” during Stage B. The iconography of Stage C, meanwhile, appears limited to the Burial Theme.

While Bourget's book will undoubtedly become a staple of Moche literature, it ultimately leaves the questions of why ritual violence and why ritual combat somewhat unanswered. For instance, changes in Moche iconography are interpreted as indicative of transformations in political structures and a concomitant need to refine ideological discourses. Bourget points out the changing popularity and inferred authority of coca takers, warriors, ritual killers, temple attendants, and other actors in increasingly complex ritual narratives and violent practices. Still, one wonders why warriors and their ritual killing were at all of political importance in Moche times. Indeed, it remains unclear how Moche structures of governance developed or how an ideology of violence and human sacrifice became so deeply entangled with rulership. Was warriorhood institutionalized during periods of real armed conflict? Could the ritual combats be ways to commemorate these ancient times? Was the spread of Moche religious ideology related to the capacity of elites to nurture emotional responses to the perceived omnipresence of violent acts and ritual combats akin to real armed conflicts? How were governance and legitimacy linked to shifts in political economies on the north coast? Bourget valiantly leads the way and positions himself in the debates about the nature of Moche warfare and the origins of prisoners, but Andeanists might have to look beyond elite burials and visual arts to reach more definitive answers. In any case, Bourget has to be praised for a very insightful and most welcome addition to Moche art and archaeology.

Manufactured Light: Mirrors in the Mesoamerican Realm. EMILIANO GALLAGA M. and MARC G. BLAINEY, editors. 2016. University Press of Colorado, Boulder. xii + 324 pp, index, 89 illustrations. \$65.00 (cloth), ISBN 978-1-60732-407-2.

Reviewed by John E. Clark, Brigham Young University

The multiple ironies and paradoxes in this useful book start with its title, *Manufactured Light*, and continue through its 13 chapters to the back flap. Mirrors capture light and can even bounce it into dark recesses but, of course, do not manufacture light in any literal or metaphorical sense. Chapters touch on technical and spiritual aspects of the ancient fabrication and use of mirrors of obsidian, hematite, and pyrite, and even the

use of quartz crystals as natural mirrors. The pervading theme throughout the book is the metaphysical function of mirrors as reflective surfaces deployed in rituals to “see” other realities. Mineral mirrors were seer stones rather than lamps. They may have served some cosmetic functions, but ethnographic and historical information privileges the esoteric over the mundane, and the 15 scholars in this book largely follow suit. Most chapters contribute data on the distribution of stone mirrors in time and space in the Americas, but Classic period pyrite mirrors qua shamanic devices dominate discussion. Space precludes a full listing of insights and deficiencies in this book, but mention of a few will give a flavor of the book and its utility.

Topical coverage ranges from modern experiments in mirror making to the use of mirrors by modern Huichol Indians. The opening chapter by Emiliano Gallaga and the summary chapter by Karl Taube deal with the cultural significance of mirrors in aggregate and to a lesser extent with technicalities of individual mirrors as hard objects. Remarkably, there is not a single adequate photograph, drawing, or description of a complete mirror in the book. Exacerbating this incongruity between wondrous objects and images, University Press of Colorado downgraded all the color photographs into murky shades of gray. This nadir in publishing quality, however, may be metaphorically appropriate for a book on this topic. Mesoamerican mirrors blurred reality, and this made scrying with them possible. In Mesoamerican lore, mortals should not see too clearly.

Metal mirrors roughed out by percussion and polished by abrasion appeared in Middle America by 1600 B.C., making them slightly older than the inception of Mesoamerican society itself. The use of mirrors may have been integral to the cultural practices that gave rise to Mesoamerican culture and sustained it over three millennia, but the early evolution of mirror use is not considered in *Manufactured Light*. Rather, individual contributions deal with synchronic topics rather than the long view. The focus is on pyrite, mosaic mirrors. These Classic-period mirrors of golden cast were composed of small, flat pieces of polished pyrite glued onto flat pieces of slate or fine sandstone. Such mirrors were generally larger than the one-piece mirrors made by Olmecs in the Formative era and also more regular in shape. Circular mirrors were the most popular form of pyrite mirrors. The polygon pyrite tesserae of these mirrors were custom fit with the skill of Inca masons, leaving no gaps between conjoining pieces. Because each tessera was unique, those of individual mirrors fit together in only one way on their back plates. The composite surface of each assembled mirror was ground and

polished to the same optical plane, probably as the final manufacturing step (this has not been verified). Complete mirrors are wonders to behold, but few are found whole because pyrite decomposes into a yellowish powder in most archaeological contexts.

This is the only book I know of that moves beyond conjectural treatments of mirror making to descriptions based on replication experiments and analyses of microscopic traces of manufacturing marks. The first three chapters outline nascent studies designed to discover the techniques, time, and skill required to make pyrite mosaic mirrors. I am not swayed by the specific answers but am heartened that experiments with lapidary technologies have begun at long last. Extrapolating from one trial in making a sandstone mirror back and one pyrite mosaic piece, Gallaga ventures that it might have taken 110 to 160 working days to make a pyrite mirror with 20 to 30 pyrite plaques. Once the best ways of working pyrite have been discovered, I expect future experiments to demonstrate that the labor needed is less than a fifth this estimate.

Five chapters report on sites with evidence for the production and use of mirrors. Of particular interest are data from Cancuén, Guatemala, that indicate pyrite mirror pieces were produced in workshops devoted to jade jewelry. Brigitte Kovacevich argues that these workshops were not associated with elite residences. This leads to the interesting surmise that nonelite craftspeople made items that circulated among elites. The connections between the manufacture and consumption of stone mirrors remain to be worked out. Carrie Dennett and Marc Blainey address this issue for the southern frontier of Mesoamerica; they look at the distribution of Maya-like pyrite mirrors and mirror backs in Central America. After evaluating various explanations they conclude that mirrors were items of gift exchange among elites—but gifts that presupposed the use of these mirrors in front of audiences. This conclusion reminds one of Kent Flannery’s famous article on Early Formative exchange of small, iron-ore mirrors (in Benson, ed., *Dumbarton Oaks Conference on the Olmec*, 1968). His groundbreaking study is nowhere mentioned. The sole treatment of Formative mirrors is Joseph Mountjoy’s study of artifacts from the Mascota region near Acapulco, Mexico. He describes exquisite pyrite and polished quartz mirrors and jewels found in cemeteries dating to 900–700 B.C. These items circulated in societies that were not obviously complex or hierarchical.

Given the book’s focus on pyrite mosaic mirrors, one surprise is that the earliest example escaped notice. Its absence points to a gap in scholarly imagination.

Authors in *Manufactured Light* deal with the composite, assembled surfaces of mosaic mirrors as singular, shiny surfaces and ignore other salient properties, namely, geometry and number. In his study of the large mirror from Las Bocas, Puebla (thought to date to about 1000 B.C.), Alexander Marshack (in Aveni, ed., *Archaeoastronomy in Pre-Columbian America*, 1975) analyzed the number, shapes, and arrangement of pyrite pieces of the mirror. He argued persuasively that the 354 tesserae that once comprised this rectangular-shaped mirror represented a calendar count of 12 lunar months. It would be well to analyze Classic-period mirrors in as much detail. The possibility that mosaic mirrors had calendrical, geometric, or numerological significance is not considered in this book. Rather, mirrors provided luminous surfaces for looking into other realms. Some mirrors even spoke, and the senses of touch and smell were involved with others.

In his summation, Taube discusses Postclassic mosaic mirrors that were clearly laid out as cosmograms. Olivia Kindl documents that Huichol mirrors continue to be framed as cosmograms. Her study calls attention to framing devices, most of which do not preserve archaeologically. Some Maya flint eccentrics appear to be copies of wooden mirror frames, so I would not be surprised if some mirrors had been attached to wooden handles rather than worn as pectorals. I suspect that the earliest mirrors were viewed in cosmological terms. As depicted in Olmec art, mirrors were centering devices that surely marked their wearers as central persons. These observations only scratch the surface of *Manufactured Light*. The book merits careful perusal by those interested in Mesoamerican cultures, and some chapters deserve to be read twice.

Peruvian Archaeology: A Critical History. HENRY TANTALEÁN. Translated by Charles Stanish. 2014. Left Coast Press, Walnut Creek, California. x + 205 pp. 35 figures, notes, bibliography, and index. \$70.00 (cloth), ISBN 978-1-61132-991-9.

Reviewed by Richard E. Daggett, University of Massachusetts, Amherst

There remains much to be written about the history of Peruvian archaeology, despite the existence of accounts focused on prominent individuals such as Max Uhle and Julio C. Tello. Notably lacking to date has been an overview placing research in the context of the social, political, and economic changes that were occurring concurrently both inside and outside

Peru. Tantaleán has provided the first such analytical review.

The book is divided into 10 chapters. Chapter 1 briefly traces the gradual emergence of archaeology from early postconquest times up until the very end of the nineteenth century. Chapter 2 introduces Uhle who, in 1896, conducted the first stratigraphic excavations in Peru. He continued his work with American sponsorship, was appointed by an enlightened government to head the archaeological section at a new National Museum in 1906, and developed a chronological scheme based on horizon styles. Also introduced is Tello, who explored the ruins of Chavín de Huantar and established a museum of archaeology at the University of San Marcos in 1919. In chapter 3 the reader learns that during the 1920s Peru forged a strong relationship with the United States while dealing with the rise of an indigenous movement in the southern highlands centered at Cuzco. Tello began teaching anthropology at San Marcos in 1923 and was named director of the National Museum of Archaeology in 1924. Based on his work at Chavín he theorized an Andean mother culture with highland and tropical forest origins that diffused to the coast. At the start of the 1930s the effects of the Great Depression resulted in a military coup. Tello was removed as director of the National Museum and was replaced by the historian Luis E. Valcárcel. The latter created a new National Museum, was proactive in forging a national identity, and focused his attention on the cleaning and reconstruction of Inca sites in and around Cuzco. Because of Valcárcel's emphasis on tourism his work was fully funded by the government, to the detriment of Tello's scientific endeavors; this caused Tello to travel to the United States in 1936, resulting in the creation of the Institute of Andean Research. Chapter 4 focuses on Valcárcel and the indigenous movement that had intellectual roots in Cuzco. Valcárcel drew inspiration from the discovery of the ruins of Machu Picchu and subsequently became enamored with Marxist ideas. In 1927 he was briefly imprisoned for publishing a work in which he called for a revolution to create an idealized Inca state.

Chapter 5 focuses on the amateur archaeologist Rafael Larco Hoyle, who proposed the idea that rather than an early highland Chavín culture diffusing westward, an early coastal Cupisnique culture had spread eastward. The focus of chapter 6 is the 1950s, when the military government approved research by American Fulbright students. John Rowe and his students at Berkeley also conducted research at this time. He established a temporal scheme of alternating periods and horizons based on stylistic changes identified for the Ica Valley. The focus of chapter 7 is the