This chapter takes a regional and comparative approach to explore variations in religious constructions and their visual perception in the Nepeña Valley, coastal Ancash, Peru. Like other contributors to this volume, we are interested in the perception of religiously significant places, landscapes, and monuments (Nielsen, Angiorama, and Ávila, this volume; Van Gijseghem and Whalen, this volume). More specifically, we evaluate the level of sociopolitical variability between local communities as viewed through the design of public monuments, their visual impact, and placement within the Nepeña landscape. Recent field research in the region suggests the development of polities and communities with different levels of sociopolitical integration based on settlement patterns and the distribution of ceramic styles (Ikehara and Chicoine 2011). These developments coincide with the abandonment of Chavín- and Cupisnique-related religious centers on the north and central coastal regions of Peru at the end of the middle Formative period (Kaulicke 1998, 2010; Onuki 1994; Rick et al. 2011; Shibata 2010). Indeed, the following late Formative period (ca. 800 BC) marked the emergence of a multitude of settlements varying in scale, size, and integration, which were occupied for several generations.

We investigate architectural monumentality and focus on the visual properties of religious buildings throughout the Nepeña Valley. Visibility corresponds to variables of display, exclusivity, and secrecy. We seek to answer the following questions: are ritual practices
broadcasted to large numbers of people with the idea of propagating canonic messages? Or, in contrast, are ritual practices rather exclusive events mainly aimed directly at participants? Can we detect sociopolitical interaction, integration, or competition through the design and placement of public monuments within the region? Addressing these questions using a valley-wide case study will allow a better understanding of power, religion, and politics during the Formative period.

RELIGIOUS AUTHORITY, MONUMENTALITY, AND SOCIOPOLITICAL INTEGRATION

Our objective in this chapter is to reconstruct and contrast patterns of ritual practices through their materialization in built settings. We are particularly interested in considering the relationships among the scales of ritual practice, integration, and spectacle, including modes of religious authority, social control, and elite strategies. By studying the design of religious monuments, our research has the potential to shed light on the diverse nature of authority during the Formative period. We suggest no clear division between religious ceremonies and public events. Hence, we interpret the design, use, abandonment, and renovation of ritual settings as potent political actions. Not only do public rituals have the capacity to transcend daily experiences, they represent ideal moments to affirm, negotiate, resist, or reaffirm relations of power (Swenson 2011; Tambiah 1985). Hence, the study of ritual practices, and their variability across time and space, allows for comparisons of varying modes of political authority, from centralized state-sponsored festivals to small household shrine offerings and communal ancestor worship (see Fernandini and Ruales, this volume). While the study of the internal spatial syntax of ceremonial structures can bring insights into sociopolitical organizations (see Vega-Centeno Sara-Lafosse, this volume), here we focus on the visibility and perception of religious monuments at the regional level. Using Geographic Information Systems (GIS), we reconstruct landscapes of ritual practices within a small valley of coastal Ancash and monitor their changes during the transition from the middle through the late and final Formative, a time of major sociopolitical reorganization.

THE FORMATIVE PERIOD IN NEPEÑA

Andean archaeologists have traditionally conceptualized the late and final Formative (i.e., Early Horizon) to be contemporaneous with the spread of Chavin religious imagery (Patterson 1971; Willey 1951). Although recent research
has questioned the chronological placement of Chavín and its associated ceremonial centers (Burger 1981, 2008; Burger and Salazar-Burger 2008; Rick 2008; Rick et al. 2011), most scholars still agree that there was a brief period during which many distant communities exchanged objects, ideas, and possibly people (Burger 1992, 2008; Druc 1998; Lumbreras 1993; Onuki 1994; Shibata 2010). In Nepeña, relationships between Chavín de Huantar and local populations remain unclear (Shibata 2010:306). However, excavations have revealed a style of monumental architecture and public visual art that shows symbolic and stylistic similarities with Chavín- and Cupisnique-related religious ideologies. Rather than a period of uncontested integration, it appears that the late and final Formative were times of great ritual diversity. Chavín was only part of a very complex series of related developments that included regional and interregional changes that intertwined different styles of architectural design, religious ideology, and public art. Furthermore, recent work at Chavín itself emphasizes the diversity of ceremonial buildings and ritual practices at the highland center (see Contreras, this volume; Rick, this volume). Our chapter sheds light on Nepeña’s geopolitics and cultural diversity in light of new research done since 2002.

Between 2002 and 2005, excavations were carried out at the archaeological sites of Cerro Blanco and Huaca Partida. The data acquired from these excavations helped construct a chronological sequence specific to Formative Nepeña (Shibata 2010, 2011) (table 6.1). The sequence is divided into four phases based on changes in ceramic styles, architecture, visual arts, and radiocarbon dates: (1) Huambocayán (1500–1100 cal BC), corresponding to the earliest ceramic assemblage so far confirmed in the valley; (2) Cerro Blanco (1100–800 cal BC), named after and related to the eponymous site where Tello (1939, 1943) excavated famous feline murals and corresponding to recently discovered colossal friezes at Huaca Partida; (3) Nepeña (800–450 cal BC), when Cerro Blanco and Huaca Partida witnessed large-scale megalithic renovations that covered earlier architecture and friezes; and (4) Samanco (450–150 cal BC), a time when monumental constructions were abandoned at both sites.

In the lower valley, perhaps one of the most salient cultural transformations during the Formative was the abandonment of Cerro Blanco and Huaca Partida and the subsequent relocation of public activities at Caylán and other associated complexes. While more information is needed on the religious significance and ritual behaviors associated with the abandonment of the middle Formative temples (see Capriata Estrada and López-Hurtado, this volume; Edwards, this volume), this shift was linked to economic innovations, including the increasing use of maize. At the same time, changes in religious iconographies and visual arts hint at a major reorganization of ritual life. For
<table>
<thead>
<tr>
<th>Phase</th>
<th>Dates</th>
<th>Lower Valley Sites</th>
<th>Middle Valley Sites</th>
<th>Approximate Correspondence with the Chronological Frame of:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Samanco phase</td>
<td>500–250 BC</td>
<td>450–150 BC</td>
<td></td>
<td>Early Horizon, Final Formative, Late Formative</td>
</tr>
<tr>
<td>Nepeña phase</td>
<td>700–500 BC</td>
<td>800–450 BC</td>
<td></td>
<td>Late Formative</td>
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<tr>
<td>Cerro Blanco</td>
<td>1000–700 BC</td>
<td>1100–800 BC</td>
<td></td>
<td>Initial period, Middle Formative, Middle Formative</td>
</tr>
<tr>
<td>Huambocayán phase</td>
<td>1300–1000 BC</td>
<td>1500–1100 BC</td>
<td></td>
<td>Early Formative, Early Formative</td>
</tr>
</tbody>
</table>

Credit: Koichiro Shibata

a. Monumental architecture—benched plazas and colonnaded patios with geometric clay friezes.
b. Reutilization of the former megalithic platform.
c. Monumental architecture—terraced solid platform with megalithic retaining wall.
d. Monumental architecture—terraced solid platform with polychrome Cupisnique/Chavin-related clay friezes.
e. Occupation without architectural evidence.
f. Monumental architecture—multiple connected plazas enclosed by outer wall.
g. Virahuanca Bajo, Paredones, and Huancarpón have not been excavated, so their chronological position is speculative.
h. Monumental architecture—multiple connected plazas enclosed by megalithic outer wall.
example, imagery and architecture often associated with highland Chavín and coastal Cupisnique were apparently rejected or avoided by late and final Formative groups at Caylán, Huambacho, and Samanco. Transformations in public visual arts likely paralleled profound shifts in religious ideologies (see Onuki, this volume). In Nepeña, the religious messages broadcasted from the late Formative onward appear to focus less on supernatural beings and more on generic metaphysical ideas portrayed through geometric designs (Chicoine 2006; Chicoine and Ikehara 2010). At the same time, patterns of foodways and ritual feasting lend weight to the importance of commensal politics in the competition for supporters (Chicoine 2011; Ikehara and Shibata 2008). Yet we know little about the use of religious monuments in the negotiation of political authority during that critical transition.

Since Tello’s work, systematic surface survey and excavation projects have brought renewed interest in Nepeña. Based on results from his surface surveys, Proulx (1968, 1973, 1982) suggested a territorial divide between the upper and lower sections of the valley during the Early Intermediate Period (ca. cal AD 1–800). Here, the exclusive distribution of Moche and Recuay styles of ceramics in the lower and upper valleys, respectively, is interpreted as the existence of two independent yet contiguous polities. Our combined research suggests that the division between the Moro Pocket in the upper reaches of the valley and the lower portions west of Moro existed perhaps as early as the late Formative (Ikehara and Chicoine 2011; see also Daggett 1983). The division was created based on settlement patterns, ceramic styles, and monumental architecture. In this chapter we also investigate cultural diversity in Formative Nepeña by focusing on forms of public monuments and religious practices.

Our exploration of public monuments employs two methods to look at complementary scales of analysis. First, we analyze the visibility of Formative period public buildings in the Nepeña Valley. Second, we evaluate the visibility and organization of religious structures in the settlements with the objective of defining how they structured ritual experiences through their use during ritualized gatherings, as suggested by Moore (1996b). Our goal is to weigh the extent to which religious structures acted as binding social agents at the regional level through their permanence and centrality. Moreover, this information is used to infer the degree of political integration of different communities.

**FORMATIVE PERIOD MONUMENTS IN NEPEÑA**

Our sample includes nine sites located in the upper and lower valley whose occupations span the middle to final Formative, or from the Cerro Blanco to
the Samanco phase (figure 6.1). Here we provide a brief description of each site and its major public monument(s). The ceremonial center of Cerro Blanco (1100–450 cal BC) is located on the north bank of the Nepeña River, 20 km inland from the coastline (145 meters above sea level [masl]). The architecture of the site comprises three artificial mounds that form a U-shaped configuration that encloses a possible central plaza (figure 6.2). The central mound, or “Main Platform,” measures 115 m by 85 m at its base and 15 m in height.

Though excavations revealed part of the Cerro Blanco phase architecture in all mounds including the polychrome feline iconography discovered by Tello (1943; see MAAUNMSM 2005), only the Main Platform of the Nepeña phase can be analyzed here. Constructed of large cut stones, the megalithic retaining walls are quite distinct from the earlier phase in which only small stones and adobes were employed. So far, no ritual imagery has been registered from this architectural context.

The ceremonial center of Huaca Partida (1100–450 cal BC) is located on the southern margin of the river (130 masl), approximately 2 km southwest of Cerro Blanco. In contrast to the U-shape of Cerro Blanco, Huaca Partida consists of a large rectangular platform, 10 m high (see figure 6.2). The Cerro
Blanco phase component at Huaca Partida has the earliest monumental architecture analyzed in this chapter. Huaca Partida consists of two rectangular rooms with a colonnaded atrium between the rooms. This ritual complex is located on top of a large terraced platform. The exterior side of the rooms, frontal columns, and the platform’s retaining walls are ornamented with incised polychrome paintings, polychrome paintings, and bichrome high-relief clay carvings, respectively. The Nepeña phase at Huaca Partida witnessed a substantial change in many facets of the material culture. Similar to Cerro Blanco, the site was converted into a large megalithic construction, with only a few simple religious images carved in stone.

Caylán (800–1 cal BC), with its dense nucleus of stonewall enclosures of more than 50 ha, is the largest settlement in the Nepeña Valley (Chicoine and Ikehara 2010, 2014). The complex lies on a pampa (130 masl), tucked between the V-shaped hills of Cerro Caylán 15 km from the coast. The urban core of
the site is composed of more than forty compounds, each of which is organized around a monumental benched plaza, a series of colonnaded patios, and smaller roofed areas. A number of low mounds dot the site core and complement some of the benched plazas. The plazas display ornate clay friezes and decorated rectangular pillars. These spaces appear to have played a critical role in public gatherings and ritual performance (Helmer, Chicoine, and Ikehara 2012). Excavations of associated refuse indicate that music performance and food consumption were likely activities during ritual gatherings. Access to plaza spaces was tightly controlled through sophisticated systems of corridors, baffled entryways, and door locks. The wall and column friezes display intricate geometric designs that emphasized the interplay of light, shadow, and movement of geometric forms.

While a significant portion of Caylán ritual life was located inside architectural walls provided by the enclosed plaza architecture, architects and builders also invested in the construction of a mound, which today stands more than 10 m above ground level (figure 6.3). This Main Mound (Mound-A) measures 50 m wide at its base, and the summit contains a series of colonnaded patios.
accessed through an elaborate system of zigzagging corridors and staircases. The clearing of the southern facade in 2010 indicates that terrace levels were decorated with wall friezes analogous in design and iconography to the art in the plaza. In contrast, the mound architecture and its friezes are clearly designed to be seen by a larger number of people spread over a much broader geographic distance. Mound-A at Caylán is included in our analysis.

The site of Huambacho (800–200 cal BC) is located on the southern margin of the river, 8 km from the coast (65 masl). We estimate that the original extension of the site spanned 12 ha. Based on the architectural features and material culture found during excavations, Huambacho appears to be a small elite center associated with the larger settlement of Caylán (Chicoine 2006). Huambacho originally had two enclosures on the valley floor; however, only one stands today (Main Compound). As at Caylán, entrances are constructed in a zigzagging fashion, and their access is indirect. The Main Compound is subdivided into two distinct spaces, each dominated by a benched plaza. Plazas are associated with the use of complexes of raised colonnaded patio rooms. The raised areas had facades decorated with geometric clay friezes. In our analysis we consider the Huaca-A Complex located in the northeast portion of the Main Compound.

Samanco (ca. 800–1 cal BC) is similar to Huambacho and Caylán in architectural design and material assemblage. It is located 3 km from the coast (40 masl) and is the closest major Formative settlement to the Pacific Ocean. The site contains six separate enclosure compound areas totaling hundreds of agglutinated rectangular rooms, including plazas, colonnaded patios, corrals, and smaller domestic structures (Helmer and Chicoine 2015). Samanco is nestled within ravines and hillsides along the northern margin of the Nepeña River, near the Bahía de Samanco. The center is approximately 30 ha in extent, with a 17 ha dense architectural core. Samanco contrasts with Huambacho and Caylán through its extensive use of terracing above the pampa and into the hillsides, with a general separation of 25 m in elevation between lower and upper structures. Although fieldwork in 2012 and 2013 failed to document representational art, the presence of a monumental plaza hints at the existence of ceremonial settings.

Samanco has one major plaza (Plaza Mayor) measuring approximately 50 m by 30 m, with wide terraced platform benches on three sides and two terraced open courtyards. The Plaza Mayor is located at the uppermost extent of the site (70 masl), abutting the hillsides on top of a series of terraces. In contrast to plazas at Huambacho and Caylán, which are embedded in walled compounds, Samanco’s Plaza Mayor is larger and located in a more open
space. The Plaza Mayor was chosen for our comparative analysis because of its centrality and the absence of mounds at Samanco. Based on architectural features and ceramic styles, Samanco’s Plaza Mayor likely corresponds to the Nepeña and Samanco phases.

The upper section of the valley is characterized by a widening of the arable plain. This area is enclosed within ridges and hills where river tributaries intersect. It is commonly known as the “Moro Pocket.” Based on survey data (Daggett 1984, 1987; Proulx 1968, 1973, 1985), this area witnessed a particularly dense occupation during the final Formative, or Samanco phase. We interpret upper valley centers as competing political entities (Ikehara and Chicoine 2011). Their rivalry may have included vectors of violence, exchange, and possibly an eventual sociopolitical integration (ibid.).

A sample of four centers was chosen from the Moro area. Surface ceramics suggest a main occupation during the final Formative (450–150 cal BC). Two sites, Kushipampa and Paredones, share a similar architectural style known as “megalithic architecture” (Daggett 1983; Ikehara 2010) (figure 6.4). They differ in their location, however. While Kushipampa (25 ha) was built over an alluvial terrace at 600 masl in a narrow section of the valley, Paredones (21 ha) was placed at a lower elevation (430 masl) in the middle of the valley floor, at a more central location compared to other upper valley sites. Both sites have an orthogonal arrangement. It is clear that the layout was the result of subsequent divisions of the space defined by the outer walls. Perimeter walls are as high as 4 m. In this sense the design is similar to the way lower valley sites, such as Caylán, were built. Here, the difference resides in the absence of large, replicated compounds.

At both Kushipampa and Paredones, multiple contiguous plazas indicate the potential flow of people during ceremonies. The most private areas were dominated by low-lying platforms (4 to 5 m) supported by megalithic walls filled with cobbles. Their exact function and use cannot be determined at this time. During excavations in 2009 the platforms yielded no activity remains, and their walls bear no evidence of elaborate decoration. The sophisticated finish of the megalithic rocks, especially in the doorways and corners, points toward their use without any further surface treatment. Finally, at Kushipampa, a medium-size village has been identified next to the monumental core (Ikehara 2010).

Some features, including megalithic corners and shared ceramic styles, suggest a strong connection among Kushipampa, Paredones, and the site of Huancarpón (20 ha). The linear arrangement of mounds and plazas distinguishes Huancarpón, as it resembles earlier traditions from the Casma Valley.
The mounds at Huancarpón are at least 10 m higher than the plazas, and they are composed of several superimposed platforms. Excavations have yet to be carried out at the site, and our surface observations noted that the walls did not have any murals.

Another distinctive feature of Huancarpón is the existence of defensive features, including walls that encircle the monumental core and moats that interrupt the connection between plazas and mounds (Daggett 1984; Proulx 1985). While neighboring Kushipampa is located on an alluvial terrace overlooking the valley floor, Huancarpón is placed on an adjacent terrace at 660 masl, separated by a dry ravine but one that oversees most of the intersection of the Salitre and Jimbe Rivers and their respective valley floors.

Finally, the fourth example from the upper valley, Virahuanca Bajo, is located in an alluvial fan (400 masl) at the edge of the valley floor. The site shows a contrasting architectural layout in comparison to typical ridge-top
complexes. Virahuanca Bajo comprises three aligned low-lying mounds (up to 2 m high) located within a massive open space retained by a perimeter wall approximately 1.5 m in height. This structure is surrounded by other, smaller enclosures and some terraces in the adjacent hills. The area where this architecture is present covers approximately 45 ha, but Daggett (1983, 1984) considers that the Virahuanca Bajo monument forms part of the same complex with the habitation areas and mounds located north of it, covering more than 100 ha. No mural decoration or megalithic architecture features have been recorded from surface survey.

Together, these sites represent most of the Formative building traditions in Nepeña. These traditions include early pyramid temples with familiar feline murals in the case of Huaca Partida and Cerro Blanco; megalithic complexes such as Paredones, Huancarpón, and Kushipampa, the last two with attached villages; dense enclosure compounds reminiscent of later coastal groups, seen at Caylán, Huambacho, and Samanco; and finally, minimalist monumental architecture with low-density occupations such as Virahuanca Bajo. In the following section we evaluate Nepeña’s Formative landscape through the modeling of visual experiences.

METHODS AND ANALYSES

Our method is inspired by Moore’s work on the archaeology of monuments in the Andes (Moore 1996a, 1996b). As pointed out by Moore (1996b:98), there is a “direct relationship between a monument’s design and its communicative potential, and thus its ability to serve as a marker of social cohesion.” Borrowing from Higuchi’s (1983) study of Japanese landscapes, Moore’s methodology considers the design and visual impact of mound construction in the Andes. More specifically, Moore uses “angles of incidence,” which refer to the inclination of the slope of a particular structure where surfaces perpendicular to the viewer (more than 30°) tend to be more easily perceived and have a stronger visual impact than those with more gentle (less than 15°) or frontal (15°–30°) views (ibid.). Through the analysis of seventeen monuments from eleven sites, Moore (1996b) evaluates a series of variables including the angles of incidence of a monument, its associated landscaping, and visual impact from different locations.

As pointed out by Higuchi (1983:32–35) and Moore (1996b:106), the visual impact of a monument is related to the different points of view adopted by visitors: as a visitor approaches a structure, the person experiences different perceptions as the monument fills visual thresholds. More significant, the
progressive visual perception of a monument at 18°, 27°, and 45° of vision above the horizontal eye line informs on how a particular building was meant to impact viewers. Were monuments designed to be experienced visually from far away, or was their visibility limited to select groups of nearby viewers? Was a religious building arranged to provide similar views (i.e., isovistas) to people living in different sectors of a settlement or accessing a structure from specific points (e.g., ramps, staircases)?

Moore’s analysis is enlightening as it reveals the existence of distinct traditions of mound building in coastal Peru. For example, Manchay mounds from the Formative period in the Central Coast are more visually impressive when experienced directly in front of the monument, while much larger Sechín mounds in the Casma Valley have more visual impact from afar (ibid.:118; see Burger and Salazar-Burger 2008). Clearly, some buildings’ monumentality was meant to be shared between viewers across different locations, while others were less visible and designed to impress select individuals with privileged access to ritual spaces. Our study uses this methodology to explore variability in religious architecture in the Nepeña Valley during the Formative period and considers the locations of the various public monuments regionally. We consider the design of religious monuments as a tool of religious proselytizing by evaluating for whom and from where the monuments were visible. Was a building mainly designed and located to be visible from far away and to act as a form of external communicative agent, or was it laid out to be experienced by local settlement dwellers, or both? Were structures strategically placed in the landscape to maintain a visual connection with supporters but to also be seen by potentially competing factions? These data have the potential to inform on the scale of religio-political integration through time and space.

We compare the placement of the different Formative monuments to evaluate the geographic areas from which they are visible. For that purpose we employ the ArcMAP viewshed tool over a Digital Elevation Model (DEM) obtained from ASTER satellite with a 30 m resolution. A viewshed analysis of a site provides a raster image in which each cell has a value of 0 or 1, not visible or visible, of the location’s visibility from a vantage point (Conolly and Lake 2006). A combined viewshed provides a value that corresponds to the number of selected points from which the location is visible. Simplifying the analysis, we are basically assuming that the other way is equivalent, so the combined viewshed analysis corresponds to how many monuments under study can be visible from a specific location. Such information is recorded as a value for each of the raster cells. In this analysis we use as an offset value the approximate height of the monument but not a specific height for the observer.
We assume that if a monument were conceived to be visually prominent for a population living in a specific area, its location will benefit such visibility. Were monuments designed to be watched only by people living nearby or also by people living farther away? We assess this question by exploring the relationship between the visibility of the surrounding area and the space beyond it. These circular areas were defined by two arbitrary radiuses: 7 km and 10 km starting from each monument. Our field observations noted the monuments were difficult to see beyond a 10 km radius because of cloudiness, topography, and the limited width of the valley. Consequently, a 7 km radius defines a circle that is roughly half the area of a 10 km radius. Then we use the ratio of the total visibility under 7 km and 10 km, respectively. If visibility between the two areas is equally distributed, the ratio is expected to be 0.5. Otherwise, if a preference for the adjacent land was preferred, the ratio will be closer to 1. Finally, if the monument was intended only for the more distant population, the ratio must be closer to 0.

Religious Buildings, Visual Arts, and Isovistas

The analysis of angles of incidence reveals significant patterns and allows for a tripartite classification of the Formative period monuments in Nepeña (figures 6.5, 6.6). The angle of incidence for each building was obtained measuring, in profile sketches, the angle between the ground and the line connecting the top of the highest structure and the lowest point of the base. A first category (Class 1) includes Samanco, Cerro Blanco (Nepeña phase), and the west section of Huancarpón. Class 1 buildings display gentle angles of incidence between 11° and 12°. A second group (Class 2) includes Huaca Partida’s mound during both phases as well as Huambacho, where monuments have frontal angles of incidence between 24° and 26°. Finally, as part of Class 3, Caylán’s Mound-A, Huancarpón’s west view, Paredones, Virahuanca Bajo, and Kushipampa show perpendicular angles of incidence of more than 30°. It is significant that these last three have indeed nearly 90° slopes. The structures are solid mounds with almost perpendicular retaining walls.

Class 1 buildings, with gentle angles of incidence between 11° and 12°, are interpreted as having little visual impact. Here, the main architectural feature, an enclosed public space, is similar to many of the benched plazas at Huambacho and Caylán. It was not designed for outsiders but for internal audience members and ritual participants. The emphasis on internal decorations and platform benches facing the inner patio at these three sites reinforces this interpretation. During the Nepeña phase, the front-facing view of
Cerro Blanco’s inner patio can be characterized similarly. Viewed from the sides or the back, the building had a greater visual impact than from the base of the mound (18° isovista). This condition may be related to ritual processes coming from a central plaza (surrounded by two low mounds), going up to the wide lower platform, and then confronting the upper mound built with megaliths and an impressive stone lintel. The spaces are distributed in a linear axis and become gradually smaller, thus creating a spatial mechanism for segregating people during rituals. While large portions of the public were aware of the structures, only a few could access the base of the upper building where details can be appreciated (45° isovista) or the top of it by a narrow corridor in an L or S shape. Our last example of a low angle of incidence pertains to the west-to-east view of Huancarpón. In this monument the westernmost mound blocks the view of the buildings to the east, creating a clear view of only one mound from the residential sector. An observer from the adjacent village would not be aware of the complexity of the monumental sector until the person stood on top of the mound. Indeed, the mound summit is the...
only area from which the entire monumental sector can be appreciated, and vice-versa (18° and 27° isovistas). This contrasts with the east-to-west view of the site explained below.

Class 2, with angles of incidence between 24° and 26°, includes monuments with slightly stronger higher visual effects. In the case of Huambacho, visual impact is hampered by the presence of enclosed compounds and roofed areas. In this way the raised mound and its decorated walls were only visible to select individuals who had privileged access to the ritual precinct. The Huambacho case is hence similar to what we observe at Samanco. In contrast, Huaca Partida, during both the Cerro Blanco and Nepeña phases, clearly had more visibility. Furthermore, at least during the Cerro Blanco phase, the monumentality of the structure was complemented by vivid mural imagery on the sides and frontal facade. The isovistas indicate that both buildings were designed to be visible from afar. Meanwhile, architectural details and visual arts were meant to be recognized and fully appreciated by people walking at the foot

**Figure 6.6.** Results of visual impact (angles of incidence) and isovistas with schematic representation of structures for Kushipampa, Virahuanc a Bajo, Paredones, and Huancarpón. For Kushipampa, Virahuanc a Bajo, and Huancarpón, there are large areas of architectural remains not represented in this image. Courtesy, Hugo Ikehara.
of the monuments. The Cerro Blanco phase’s wall carvings of felines, as well as the lateral polychrome friezes, may have been appreciated in this way. The analysis of the symbolic content of the visual arts associated with each ceremonial structure is beyond the scope of this chapter, but major differences existed in the religious messages broadcasted between the Middle and late/ final Formative.

The results may indicate that Class 3 constructions were designed to have the highest visibility and therefore visual impact when confronted by an audience. However, all the cases are mounds built inside or surrounded by a walled enclosure. The lowest angle of vision (isovista 18°) falls inside an enclosed space in all cases. This is a significant contrast, since monuments cannot be clearly noticed from a distance. Viewers have to enter and go through different spaces until they are confronted by such buildings. With one exception, Virahuanca Bajo, monuments of the third category display hierarchical spaces connected by different plazas, patios, and corridors. Similar to those described by Moore (1996b:118) for the Late Intermediate Period (cal AD 1000–1470), these monuments consist of spaces that may have served to segregate people during rituals. By contrast, the view of the easternmost mound at Huancarpón has a high visual impact because of both the shape of the building and the adjacent natural slope. Consequently, the mound is highly visible from far away. It stands out as the most visually prominent example in our sample. At Huancarpón, the processional character of ritual activities is emphasized by the linear aspect of the site layout.

In summary, the analysis of the angles of incidence, isovistas, and surrounding architecture indicates that ritual performance and monument prominence varied from community to community in Nepeña during the first millennium BC. Some monuments were built to emphasize visibility and appreciation for their construction (e.g., Huaca Partida, Huancarpón east view). Others were designed to limit visual impact to surrounding populations (e.g., Cerro Blanco [Nepeña phase] and Samanco). And some monuments were built in such a way that a strong visual impact was partially obscured by adjacent rooms, walls, and corridors (e.g., Huambacho, Caylán, Paredones, Kushipampa, Virahuanca Bajo). Some ritual spaces were built to guide processional ceremonies (e.g., Huancarpón and Cerro Blanco [Nepeña phase]), while others had a spatial arrangement that segregated groups into hierarchically distributed spaces (e.g., Caylán, Kushipampa). Finally, while some buildings were designed to aggregate people in wide-open spaces (e.g., Paredones, Kushipampa, Huaca Partida, Cerro Blanco [Nepeña phase]), others emphasized spatial seclusion and fragmentation (e.g., Huambacho, Caylán, Samanco).
Monument Visibility, Territoriality, and Religio-Political Organization

A total of eleven structures from nine sites are considered in this analysis. Results (see table 6.2, figures 6.7, 6.8) indicate clear variability in the patterns of visibility of Formative period centers. At one end of the spectrum, Caylán’s Mound-A and Huaca Partida, especially in the Nepeña phase, are located in areas of high visibility, even from afar. Indeed, the ratios of 0.60 and 0.62, respectively, mean that between 38 percent and 40 percent of the surrounding areas from where the sites and their main monuments are visible are farther than 7 km.

At the other end of the spectrum, the site of Samanco (0.98) was mainly visible to local people while at the same time almost invisible to viewers located beyond the 7 km threshold. Here, we must caution that the location of the settlement near the littoral zone limits the amount of space from where people can stand to look at monuments. Also, Samanco is the only site in our sample bounded on three sides by hills. This is potentially related to defensive concerns by settlement planners.

Overall, the majority of sites included in our analysis have between 60 percent and 79 percent of their visibility areas within 7 km. This is significant for several reasons. First, it suggests that most sites and their associated monuments were designed and built to enhance social cohesion at the local level. This is particularly significant for the upper valley communities, where no site appears more visible than the others beyond the threshold of 7 km. Second, it reinforces the relationship between Caylán and Huaca Partida as centers with monuments designed to broadcast messages beyond their respective immediate vicinity during the Nepeña phase. Caylán and Huaca Partida were competing for supporters through the manipulation of public monuments. This is evidenced by the sharp contrast between the ideological messages and their likely opposing religious views of the world (Shibata 2014). A look at visibility maps for the upper and lower sections of the valley strengthens these two points.

It appears that the Caylán, Huambacho, and Samanco communities, who shared similar forms of ritual structures and religious imageries, maintained strong ties through mutually complementary visibility of the entire lower valley (overlapping of 7%) (see table 6.3, figure 6.7). At the same time, a comparison of the combined visibility of the monuments at Caylán and Huaca Partida with that at Cerro Blanco indicates a significant overlap (51%). Considering the marked contrast in the forms of religious structures and ritual paraphernalia between Caylán and Huaca Partida, these two centers can be interpreted as indicating the existence of competing communities. Finally, in the upper
Table 6.2. Total area from which the monuments are visible under the two proposed thresholds for analysis (7.07 km and 10 km)

<table>
<thead>
<tr>
<th>Site/Monument</th>
<th>Land Area (km$^2$) with Visibility of the Monument</th>
<th>Ratio A/B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A: $r = 7.07$ km</td>
<td>B: $r = 10$ km</td>
</tr>
<tr>
<td>Samanco</td>
<td>16.07</td>
<td>16.43</td>
</tr>
<tr>
<td>Huambacho</td>
<td>32.48</td>
<td>42.15</td>
</tr>
<tr>
<td>Caylán Mound-A</td>
<td>34.02</td>
<td>56.35</td>
</tr>
<tr>
<td>Huaca Partida</td>
<td>32.02</td>
<td>51.53</td>
</tr>
<tr>
<td>Cerro Blanco</td>
<td>56.77</td>
<td>78.84</td>
</tr>
<tr>
<td>Virahuanca Bajo</td>
<td>17.72</td>
<td>27.49</td>
</tr>
<tr>
<td>Paredones</td>
<td>36.27</td>
<td>49.88</td>
</tr>
<tr>
<td>Kushipampa</td>
<td>27.94</td>
<td>41.65</td>
</tr>
<tr>
<td>Huancarpón</td>
<td>22.30</td>
<td>28.12</td>
</tr>
</tbody>
</table>

Credit: Hugo Ikehara

valley, the sample of four centers shows moderate overlapping viewsheds (34%), depicting a similar competitive political landscape as that in the lower valley (see figure 6.8). For the upper valley, the cases under study represent a limited sample of a larger site population. Considering the remaining potential ceremonial centers located close to each other, the relatively small Moro Pocket probably displays a higher degree of visual overlap than our data suggest.

CONCLUSION

In this chapter we have developed a comparative approach to investigate the design, perception, and visibility of public religious monuments in the Nepeña Valley during the Formative period. By building on Moore’s study of isovistas and the use of monumentality as a religio-political strategy of authority, we have demonstrated that leaders, architects, and builders in Nepeña were using ceremonial monuments as tools for multiple purposes, including social control, political integration, and inter-communal competition. In addition, we have used GIS to quantify the visibility of ceremonial buildings on the Nepeña landscape. Overall, our contribution highlights the complexity of the geopolitical strategy in Nepeña, especially through the demise of the Chavin- and Cupisnique-related imageries during the Cerro Blanco phase and into the Nepeña and Samanco phases. The study echoes other contributions in this volume and emphasizes the value of ritual settings and religious monuments.
Figure 6.7. Maps showing the combined visibility from/of the monuments at (top) Samanco, Huambacho, and Caylán’s Mound-A (1, 2, and 3, respectively) and (bottom) Caylán’s Mound-A, Cerro Blanco, and Huaca Partida (3, 4, and 5, respectively). Topography is represented in gray tones, surface area from where only one monument is visible is indicated in white, and area from where more than one monument is visible is indicated in black. Courtesy, Hugo Ikebara.
Figure 6.8. Maps showing the combined visibility from/of the monuments at (top) Virahuanca Bajo, Paredones, and Kushipampa (6, 7, and 8, respectively) and (bottom) Huancarpón (9). Topography is represented in gray tones, land from where only one monument is visible is indicated in white, and land from where more than one monument is visible is indicated in black. Courtesy, Hugo Ikebana.
as active social and political agents (Abraham; Contreras; Rick; Vega-Centeno Sara-Lafosse, this volume).

In the lower Nepeña Valley, the integration of most of the plain’s communities is evidenced during the Cerro Blanco phase and potentially the Huambocayán phase as seen through the construction of Punkurí. During that time groups coalesced at elaborate mound centers (e.g., Cerro Blanco, Huaca Partida) where platform structures were decorated with colorful friezes depicting supernatural beings. The analysis of isovistas indicates that the buildings of this architectural style were designed to impress large audiences and viewers located beyond the immediate architectural precinct. Evidently, religio-political leaders went to great lengths to reach believers and ritual participants beyond the immediate vicinity of the ceremonial complex.

During the ninth and eighth centuries BC, Nepeña communities underwent major transformations, including settlement and shifts in farming practices, building traditions, and religious messages. While the cause for these changes remains unclear, it is apparent that some groups, possibly dissidents from the large religio-political agglomerations, resettled on the valley margins and used strikingly different ideas of community planning, space, and ritual life. Innovations are particularly salient at the level of ceremonial architecture and public monuments. Isovistas indicate a marked concern toward increased control and exclusivity over ritual spaces and performances. Clearly, the design of the public monuments (e.g., Caylán’s Mound-A, Kushipampa, Samanco’s Plaza Mayor) was tailored toward smaller groups of ritual participants who had access to the buildings’ most sacred spaces.

Our GIS analysis of combined viewsheds from which a group of monuments can be seen further adds to these observations by informing on the regional

### Table 6.3. Results of GIS analysis of multiple visibilities of monuments in different cases.

<table>
<thead>
<tr>
<th># of Visible Monuments</th>
<th>Case 1</th>
<th>Case 2</th>
<th>Case 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.92</td>
<td>0.49</td>
<td>0.66</td>
</tr>
<tr>
<td>2</td>
<td>0.08</td>
<td>0.35</td>
<td>0.24</td>
</tr>
<tr>
<td>3</td>
<td>0.00</td>
<td>0.16</td>
<td>0.09</td>
</tr>
<tr>
<td>Total</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>% overlapping</td>
<td>7</td>
<td>51</td>
<td>34</td>
</tr>
</tbody>
</table>

Credit: Hugo Ikehara
context in which each building was placed and designed to be seen by ritual participants and competitors. Three striking observations can be made based on the GIS analysis. First, the overlap in Cerro Blanco’s, Huaca Partida’s, and Caylán’s visibilities suggests that the sites were competing for supporters, most likely at the end of the Cerro Blanco phase and the beginning of the Nepeña phase. This interpretation is supported by the markedly contrasting religious iconographies and ritual practices documented at Cerro Blanco/Huaca Partida and Caylán. Further, Caylán is currently interpreted as the primary center of complex regional polity that developed during the Nepeña phase until the end of the Samanco phase and beyond. Second, our GIS analysis indicates that the Caylán, Huambacho, and Samanco visual areas complement each other, with minimum overlapping and covering a maximum of territory, reinforcing their integration into a single political entity. Third, the upper valley (or Moro Pocket) represents a completely independent system that contrasts in terms of both settlement pattern and monumental architecture. Here, sites were exclusively located on mountain ridge tops, with monuments meant to be visible to neighboring viewers. At the same time, our viewshed analysis indicates that Huancarpón stood as a center independent from the Kushipampa, Paredones, and Virahuanca Bajo geopolitical system. Huancarpón appears to have been tailored to the needs of communities closer to the Jimbe drainage, beyond the Moro Pocket and the Loco and Salitre tributaries.

Our combined research on the Formative period in Nepeña brings new and significant insights into the diversity and complexity of ritual practice and its materialization during that crucial time frame (see also Contreras, this volume). In this chapter we have adopted a perceptual and geographic approach to understand the design and impact of religious buildings in the life of human communities in ancient Peru. Religious practices and their associated monuments, because of their power over collective actions and memories, are especially attractive tools for social control and political integration. Here, we have demonstrated that multiple strategies were at play in Nepeña. Through the close examination of architectural designs and patterns of monumental visibility, this chapter exemplifies the need to study ritual practices and their associated sociopolitical meanings in the development of complex societies in the ancient Andes.

REFERENCES CITED


