Magdalena de Cao

An Early Colonial Town on the North Coast of Peru

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Dedicated to the people
of Magdalena de Cao,
past, present, and future

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Beads

Alexander Menaker

Introduction

With their diverse uses, values, and meanings, beads have played many important roles through time and space. They have been used for everything from simple adornments to delight an individual to money that affected the course of empires. The desire for beads was a cultural impulse that did not have to be translated when the Old World met the New—it was a common heritage extending to the most remote times of human antiquity. Yet bead use in Europe and the Americas had diverged enough that when Europeans encountered people of other traditions, new responses and innovations in cultural and social roles occurred. This was as true in the New World as in any other place.

Excavations at Magdalena de Cao Viejo yielded a rich collection of beads, including notable varieties of native and European forms. These were found throughout the town as well as within and around the church. In this chapter I will discuss the Magdalena beads within larger contexts and at the site itself, as well as some of the general characteristics of beads occurring throughout the Americas and Europe, their varied manufacturing techniques, and analytical methods for studying them. Following this, I will review the collection of beads recovered from Magdalena de Cao, particularly their archaeological contexts and interpretations of them.[1]

Beads Across the Andes and Beyond

Likely due to their portability, beads are among the first examples of human adornment for highly mobile early hunter-gatherers and foragers, and the tendency for them to be made in relatively durable materials means that they have been found at early archaeological sites. Such is the case for Peru, where a necklace of coarse greenstone beads interspersed with nine tubular gold beads was found in a grave at Jiskairumoko (ca. 2100–1900 B.C.), an intermittently occupied pithouse community in the Titicaca Basin. The find is not only one of the earliest complete necklaces in the Andes but also the earliest discovered example of metalworking (Aldenderfer et al. 2008).

The most notable bead type for early Peru is a biconvex, double-holed bead commonly made of red diatomite stone during the Late Preceramic Period (ca. 3000–2000/1500 B.C.) (Greider et al. 1988; Quilter 2014:104). Examples also are known made of the red *Spondylus princeps* shell. They appear to have been elements of high-status regalia, and reported findings tend to be at large Central Coast ceremonial centers such as Aspero and La Galgada. Other bead types are known for the era from findings at Caral, one of the most intensively studied Late Preceramic complexes, and include examples made of bone, wood, shell, quartz, and semiprecious stones (Shady 2006:52).

Beads of many different sorts were being made by the time of the Chavín culture (Burger 1992), circa 1000–200 B.C., including spectacular large gold ornaments such as found at Kuntur Wasi in the northern highlands (Kato 1979, 1993). No systematic study of the varieties of beads and their significance has been carried out for any of these early prehistoric eras, but it seems certain that there were various sumptuary laws at many times and places regarding who had rights to wear beads of particular materials or forms (Deagan 2002).

The greatest scholarly attention to ancient Central Andean beads is closely associated with the role of *Spondylus princeps* and *Spondylus calcifer* with their red, orange, and purple exterior and interior rims. Interest is particularly strong because the nearest sources to Peru of the mollusk are the warm waters of Ecuador, with other sources continuing northward (Carter 2011). The shell appears to have increasingly become more widely used in Peru, Bolivia, and Chile through time, suggesting intensified long-distance trade between these regions. There appears to have been a distinct increase in the importation of *Spondylus* late in the Early Intermediate Period (see Carter 2011; Paulsen 1974; Pillsbury 1996).

By the Late Intermediate Period the Lambayeque Culture (ca. A.D. 800–1350) (Shimada 1990), based in the northern valley of the same name, appears to have engaged in a vigorous importation of *Spondylus* to Peru, a practice continued by the succeeding Chimu culture, which expanded from its capital of Chan Chan in the Moche Valley to take over the former territory of Lambayeque. The Inca, who reportedly conquered the Chimu in 1470, also highly valued *Spondylus*. They may have attempted to monopolize or at least control its acquisition, distribution, and use, although how successful they were at doing so is not clear (see Besom 2010; Carter 2011). The large trading raft that encountered one of Pizarro's scouting expeditions may have been on its way north to obtain *Spondylus*.

We know that by late prehistory the Inca name for *Spondylus* was *mullu* and that, traditionally and to the present, the term *chaquira* is used to refer to *Spondylus* beads or, sometimes, beads in general.

During Pizarro's fateful journey to Cajamarca in 1532 Atahualpa sent a messenger bearing gifts to him. In return, Pizarro presented the Inca envoy and his men with presents that included glass beads (Estete [1535] and Trujillo [1571] quoted in Donnan 2011:368, 136). Additionally, throughout the northern Andes *Spondylus* shells and possibly beads made from them may have been used as a form of currency (D'Altroy 2002:255).[2]

European glass beads along with *Spondylus* shell beads have been recovered from indigenous burials dating to the time of the earliest Spanish intruders (1530–1560), including from significant prehispanic huacas at the site of Chotuna (Donnan 2011). One of our workers reported that a local huaquero told him that a burial was found on the eastern side of the Magdalena church complex that had been entirely wrapped in strings of *Spondylus* beads; if

this is true, the numbers of chaquira would have been in the thousands. The church locale rests on top of a Moche or Lambayeque adobe structure, but descriptions of the find suggest that the burial was colonial or even later, inserted into the talus slope of the mound of soil of the crumbled church complex walls.

European Beads

We know much more about the history of beads in Europe and nearby regions than in the ancient Andes, due to the availability of documents and the link between glass beads and industrial and economic history. Even so, there are various aspects of the history of European beads, especially regarding their entry into the New World, that still are quite unclear.

Moravia and Bohemia supported glass workshops as early as the tenth century, but it was Venice and nearby Murano that played key roles in the production of the type of glass beads found in the New World (Durbin 2009:111–112). Venice's proximity to the Iberian Peninsula and the intertwined political and economic relations between Italian principalities and Spain were key to the island nation's commercial success. The complex political economies of Early Modern Europe complicate tracing the origins of glass beads found at early historical sites in the New World, however.

Venetian-style beads were so admired and in such high demand that competitors quickly established themselves in many other places. By the middle of the sixteenth century Venetian glassmakers weary of low wages had set up workshops in the Iberian Peninsula, and in 1549 the Venetian government enacted statutes to penalize those who refused to return from abroad (Frothingham 1963:34). Such attempts at control were likely not entirely successful given that during the same period workers from Murano, Altare, and Brescia set up successful industries in France and the Netherlands as well as in Iberia.

Deagan believes that the earliest beads in the Spanish colonies were made in Spain but that by the mid-sixteenth century these had been largely replaced by Venetian beads (1987:159). But the popularity of glass was great enough that local production began relatively early in the New World. Glass workshops were founded in Puebla, New Spain, as early as 1542 and exported their products throughout the Spanish colonies in the Americas, including Peru. Not much is known, however, about the specific items that were made or the frequency of trade that occurred (Smith and Good 1982; Soldi 2005).

One of the earliest accounts of glass production in Peru comes from the Spanish chronicler Antonio Vásquez de Espinosa. In 1617 he passed by the town of Ica, south of Lima, and noted "two furnaces for making fine glass" (Soldi 2005:335).[3] Glass production continued in Ica throughout the seventeenth and eighteenth centuries, including a workshop at a Jesuit hacienda, but was periodically disrupted by earthquake damage, debt, and other challenges (Soldi 2005).

Many aspects of bead making within the larger glass industry in Spanish colonial America are uncertain. It seems likely that a glass workshop would not ignore an apparently lucrative industry (Goggin 1960, quoted in Deagan 1987:159), but specific patterns of where and when glass beads were made and how they were distributed remain largely unknown. Detailed studies, including chemical and physical analyses, can discern different bead sources, but the amount of research still needed far exceeds current resources.

Glass Bead Fundamentals

At the time of early Spanish colonialism, which covers the main occupation of Magdalena de Cao, there were two predominant methods for manufacturing glass beads: the drawn cane method and the wire-wound method. Each leaves traces—wound beads have stress lines and bubbles encircling the string hole, while drawn cane beads have elongated bubbles and stress lines that parallel the perforation (Deagan 1987:160)—so identification is relatively easy for larger beads. For small beads, however, it can be difficult to discern the manufacturing method (Kidd and Kidd 1970:50).

Modifications of these primary manufacturing methods created a vast array of bead varieties. Twisting a glass rod with multiple stripes while it was being drawn produced spiraling stripes (Kidd and Kidd 1970:49; Smith and Good 1982:16). A mold with a square cross section produced a form similar to that seen in Nueva Cádiz beads, which were highly popular in early colonial times; another type of mold produced beads with a distinctive star-shaped cross section. The use of many rods of glass arranged around a core was another technique in both drawn and wound beads. After the initial formation, faceting, inlays, and other treatments produced a diversity of finished products.

The Magdalena de Cao European glass beads generally are similar to those found at other Spanish colonial sites in the Americas (Deagan 1987; Donnan 2011; Smith et al. 1994; Smith and Good 1982). Beads recovered at Magdalena de Cao include the diagnostic Nueva Cádiz style, named for the site in Venezuela where it was first found archaeologically. While the term "Nueva Cádiz" has been used to refer to a variety of tubular beads made by the drawn cane method and the use of molds with a square cross section, the most distinctive type is composed of three layers of glass, usually with interiors and exteriors of varying shades of blue and turquoise, with a white middle layer (Deagan 1987; Smith and Good 1982). Like other types of beads, Nueva Cádiz could be modified in several ways, including by twisting and faceting; both kinds of modification are present in the Magdalena de Cao collection (Smith and Good 1982). Moreover, historical archaeologists have usually identified Nueva Cádiz beads with sites dating to the sixteenth century, assigning them to before 1550 (Deagan 1987:163; Smith et al. 1994:36). The Magdalena de Cao Nueva Cádiz beads demonstrate that this type of bead was still in circulation beyond that time.

Chevron beads found at Magdalena de Cao have their origins around Venice and Murano and have been found throughout Spanish colonial sites beginning with those from the early sixteenth century (Smith and Good 1982). Deagan suggests that chevron beads might have been produced and used as paternoster rosary beads as early as the fourteenth century in France, where the glass industry has its origins in the medieval era (Deagan 1987:158). Because chevron beads were historically used for rosaries, it is no great surprise that such beads were found in the church at Magdalena de Cao. With their colorful multiple layers of blue, red, and green formed in star-shaped molds, these beads also offer temporal resolution, since the number of layers of glass used decreased over time (Smith and Good 1982). Chevron beads recovered from Spanish colonial sites from the sixteenth century consist of seven layers of glass and are faceted, while those of the later seventeenth century most often have five layers and are tumbled, and eighteenth-century beads have four layers of glass (Deagan 1987:164–165; Smith et al. 1994:36).

Another common type of colonial glass bead that occurs at Magdalena de Cao is the gooseberry bead, found in association with faceted chevron beads but rarely associated with Nueva Cádiz beads. Gooseberry beads are a composite construction, made up of multiple layers of glass, with a colorless interior core, applied stripes that are actually linear air bubbles, and then a final exterior layer of glass. These beads have been recovered among sites throughout North America associated with Spanish and Dutch occupations from the sixteenth, seventeenth, and eighteenth centuries (Deagan 1987). Deagan suggests that gooseberry beads were most commonly used by the Spaniards for "trade or gifts rather than as rosary beads or adornments" (Deagan 1987:168). The presence of a gooseberry bead at Magdalena de Cao also provides evidence extending previous dates marking the occurrence of this bead back to the first half of the sixteenth century (Smith and Good 1982; Deagan 1987).

Small wire-wound and drawn cane beads (commonly referred to as seed beads) are ubiquitous at European colonial sites, and also occur at Magdalena de Cao. These beads were often used in embroidery, and given their small sizes, they were probably most easily kept together by thread, which is further evident at Magdalena de Cao. In a few cases these small beads were further modified with faceting, making them subspherical in shape (Smith et al. 1994). Both wire-wound and drawn cane beads are found among the Peruvian bead collection analyzed by Smith and Good, though Deagan asserts that wire-wound beads are less common at sixteenth-century sites and appear more frequently later (Deagan 1987; Smith and Good 1982).[4]

There are also a couple of bead types that are rare among assemblages and so far documented only among Spanish colonial sites in Peru dating to the sixteenth and seventeenth centuries: crumb beads and red melon beads. Most often occurring in a dark blue or purple color, the crumb bead is made from a manufacturing process, still poorly understood, in which a spherical piece of glass is heated and rolled in a container of small pellets that adhere to the hot glass, making the bead look like a blackberry or as though it is covered in crumbs. The red melon bead is a wire-wound bead, distinct for its pressed flute molding (Menaker 2011; Smith and Good 1982).

Given the paucity of studies of Spanish colonial bead collections in South America, and given the large number of bead varieties manufactured at the time of Spanish colonialism, it is no surprise that the assemblage from Magdalena de Cao includes numerous beads that do not fit into existing known types. Because there are so many combinations of techniques, colors, and modifications, it is useful to mention the criteria by which I categorized and analyzed the bead collection.

Study of the Magdalena Bead Assemblage

My analysis encompassed the entire collection of beads recovered from Magdalena de Cao. I began by visually inspecting the beads now housed at the Museo de Cao and identifying their general characteristics. I quickly separated shell (mostly *Spondylus*) beads from glass beads, which generally distinguished indigenous from introduced materials. I recorded basic dimensions of all beads, including diameter, length, perforation diameter, weight, and color.[5]

My analysis of the European glass beads draws primarily from the foundational classification systems of Smith and Good (1982) and Deagan (1987). In addition, other classic studies and systematic analyses were used to identify select materials (Karklins 1982, 1985; Kidd and

Kidd 1970). The classificatory system employed for studying the glass beads recovered from Magdalena de Cao identifies central characteristics of European glass beads, including the specific manufacturing method, construction type (number of layers of glass), shape, and any modifications.

The classification system used follows the one elaborated by Smith and Good, which uses letters and numerals. Classification begins with the manufacturing method of the beads: drawn cane, wire-wound, blown, or crumb (Smith and Good 1982:19). Drawn cane beads are divided into five classes based upon their cross section: round, molded, twisted cross section, chevron with round cross section, and chevron with molded cross section (Smith and Good 1982:19). Subsequently, beads are categorized into series based upon their finishing—untumbled, tumbled, or faceted. They are further classified by type of construction, based on the number of layers of glass and then appliqués or inlays: (1) simple—a single layer of glass; (2) compound—two or more layers of glass; (3) complex—simple beads with an appliqué or inlaid design; and (4) composite—compound beads with an appliqué or inlaid design (Deagan 1987:161; Smith and Good 1982). Wire-wound beads are categorized depending on whether they were modified in any way; this includes mold-pressing (e.g., melon bead with pressed flutes) or any sort of finishing.

All of the beads are subdivided based upon shape: spherical, subspherical, donut, olive, and tubular forms. Diaphaneity was documented by holding the glass bead in the air and noting transparence, translucence, or opacity (Deagan 1987; Smith and Good 1982).

Results of Analysis

Approximately 347 beads were recovered from Magdalena de Cao Viejo throughout the various field seasons of excavations.[6] Beads were found both in the colonial town and within and around the church itself, with more than two-thirds (242 beads; 70 percent) recovered from the town and the remainder (105 beads) found associated with the church. The beads were made from a wide variety of materials, with the majority consisting of *Spondylus* shells and European glass beads, along with a small number of beads made from other shell varieties (such as mother of pearl), wood, and stone. Of the 120 European glass beads from the site, 37 were recovered from the church, while 83 glass beads (69 percent) were found in the town; of the 179 *Spondylus* beads, 49 were found in the church and 130 (73 percent) in the town.

Beads and the Church at Magdalena de Cao

This section will primarily review the beads recovered from the church, providing necessary contextual descriptions and details; additional contextual information and significant interpretations will be left until the later discussion.

Many of the beads found in the church were recovered through initial surface collections or while cleaning looter holes. A majority of the remaining beads were recovered in the first levels of excavations, though there were some recovered at lower levels more closely associated with the earliest phase of occupation.

The beads recovered from the colonial church provide important evidence of the convergence of enduring indigenous materials and more recent European imports. Of the

105 beads recovered from the church, there were 37 European glass beads and 52 shell beads (49 *Spondylus* beads and 3 mother-of-pearl shell varieties), with the remaining collection consisting of 11 stone beads, 1 metal bead, 2 beads made from treated wood, and 2 beads of unidentifiable organic material. These material remains were scattered throughout the church.

The *Spondylus* shell beads were mostly small and medium-sized circular beads ranging in color from red to orange to purple, most likely indicative of *Spondylus princeps* and *S. calcifer* (Figure 7.3: FF) (Donnan 2011). There were 44 *Spondylus* beads with diameters that ranged from 2.71 mm to 5 mm, including two tubular *Spondylus* beads (Figure 7.3: EE), while 5 substantially larger beads had diameters greater than 5 mm; the largest diameter was 9.35 mm. One of the mother-of-pearl beads was distinct in that it was a long, pendant-style bead (Figure 7.3: AA).

Although it is known that beads were used in dress and strung together with thread for various purposes, at many archaeological sites any associated textiles, thread, and other organic materials that might have provided further contextual insight have been lost to decay. Fortunately, the great environmental conservation at Magdalena de Cao meant that many beads were recovered with threads still intact, providing critical contextual evidence. For example, 7 *Spondylus* beads with an intact thread remained strung together; these were recovered from a looter hole (Figure 7.1). Also found in the same pit were 12 other small circular *Spondylus* beads (one of which, as mentioned earlier, was tubular), 2 glass beads (a chevron bead and an interesting wire-wound bead of simple construction, consisting only of black glass, but which is composed of multiple wound coils still connected and fused, thus resulting more in a tubular shape [Figure 7.3: X]), and a possible metal bead. The only beads recovered from Unit 17 in the church were two similar chevron beads, one of which had a thread preserved inside its perforation (Figure 7.3: A, B).

Six *Spondylus* beads held together by string were the only beads found in Unit 18. Recovered from another area of excavation (Trench 1) was an intact thread strung with 10 beads: 6 tubular shell beads (diameter range 3.72 mm to 4.63 mm, length range 4.38 mm to 7.63 mm) and 4 black stone beads (possibly shale) of circular disc shape (diameter range 2.03 mm to 3.09 mm, length range 1.17 mm to 1.85 mm) (Donnan and Silton 2011). Three similar black stones were

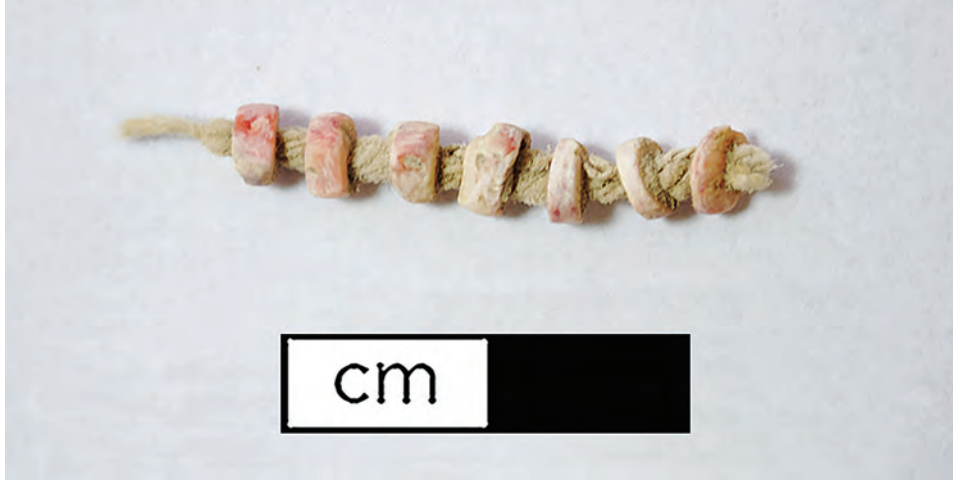

Figure 7.1
Spondylus shell beads with thread intact.

recovered in the same archaeological context, while 2 other similar *Spondylus* beads were found in contexts resting a little closer to the surface than the other beads.

Unique and interesting beads and fragments were recovered from Unit 12, at the northwest edge of the church. This excavation unit revealed a wealth of European-influenced materials, including paper with writing, colonial ceramics, and more. There were 16 beads collected there (minimum bead count, fragments of large wire-wound). This included 12 glass beads, 1 mother-of-pearl bead, and 2 *Spondylus* shell beads, along with a bead made from wood. All of the glass beads were simple construction, with one layer of glass, except for a broken teardrop-shaped glass bead with an appliqué indicative of complex construction. Remains of three wire-wound beads with large diameters were found within this area; as far as I am aware, wire-wound beads of this size have never been documented before in Peru (Figure 7.3: Y). There were also three identical small wire-wound, olive-shaped (with round cross sections) cobalt-blue beads, with diameters of 3.57 mm to 3.66 mm and lengths of 3.95 mm to 4.94 mm. Another notable bead was a quite weathered and worn clear glass spherical bead, with traces of metal remaining in its perforation (Figure 7.3: Z). The other glass beads included olive- and donut-shaped beads of dark blue and sky blue, as well as a similar bead of cream or tan, along with a tubular cobalt-blue bead molded with long protruding lines parallel to the perforation, similar to other beads found at the site (Figure 7.3: E).

There were seven beads recovered from Unit 5, including three glass beads, three *Spondylus* shell beads, and one stone bead. The glass beads included a flake of Nueva Cádiz bead along with two small glass beads, one a green drawn cane donut-shaped and tumbled bead with a diameter of 3.39 mm and length of 2.49 mm, the other a purple wire-wound olive-shaped bead with a diameter of 3.45 mm and length of 2.93 mm. Another assemblage of 15 beads (5 *Spondylus* shell beads and 10 glass beads) was excavated from Unit 7. This included a chevron bead, a Nueva Cádiz bead, a weathered compound bead composed of three layers of glass (an interior cobalt blue, a very thin layer of white, and an exterior layer of cobalt blue), and seven small, simple wire-wound beads, olive and donut-shaped, in green ($N = 1$) and various shades of blue and purple ($N = 6$) (diameter range 2.79 mm to 3.52 mm, length range 2.19 mm to 4.9 mm).

There were 15 beads recovered from Unit 32 (not including flake), which included a variety of glass ($N = 5$) and shell beads (five *Spondylus*, two mother-of-pearl). During excavations, a twisted Nueva Cádiz bead and a small simple drawn cane sky blue bead were recovered in contexts associated with a burial, the only remaining and preserved mortuary context containing beads at the site. The three other glass beads, found in adjacent stratigraphy levels, included two small drawn cane and wire-wound beads, one teal and one cobalt blue, along with a cream-colored drawn cane tumbled bead. The two mother-of-pearl beads were primarily spherical in shape and ranged in diameter from 7.96 mm to 8.88 mm, though the larger bead is broken neatly in half along the perforation. A distinctively crafted oblong black stone bead with a diameter of 11.57 mm and length of 13.4 mm has one perforation running its length, with another hole perpendicular that intersects it at midpoint. There are also five small *Spondylus* beads that are red, orange, and purple. Also present in the collection were a black stone circular bead, an amber-brown spherical stone, and a well-crafted spherical organic bead (possibly wood).

Beads Throughout the Town

There were 242 beads recovered from the colonial town, including 83 glass beads and 130 *Spondylus* shell beads. Most of the beads were found in excavations of structures; and in one intriguing case, beads were recovered at the fringes of the residential area.

Just northeast of the plaza, Unit 28 provided plentiful evidence, with 65 beads recovered, including 26 *Spondylus* shell beads and 29 European glass beads (not including glass flake). For instance, there was a molded red melon bead with pressed flutes, which was broken in half, as well as a crumb bead—neither of which is commonly found in other Spanish colonial sites in the Americas (Figure 7.3: M, N) (Smith and Good 1982). Another bead that has not been presented in previous studies is a small wire-wound faceted red bead (one of two found at the site; Figure 7.3: P). There was also a glass bead of complex construction, which consisted of alternating red and white stripes parallel to the perforation and inlaid on a dark navy blue base layer (Figure 7.3: J). Four Nueva Cádiz beads with molded cross sections were found throughout the structure, with diameters of 3.31 mm to 5.88 mm and available lengths of 5.07 mm to 8.14 mm, along with a fragment of a twisted Nueva Cádiz bead (diameter 5.88 mm, length 4.39 mm). One of these Nueva Cádiz beads had a faceted finishing, which Fairbanks termed Peru Corner Faceted, but this finish has been found outside of Peru in recent years (Figure 7.3: D) (Deagan 1987:164; Smith et al. 1994:35). Three chevron beads, with varying quality of faceting finishes leading to unevenly crafted subspherical forms, were further found scattered in the structure. There were also two rare small donut-shaped compound beads composed of a colorless interior layer of glass and a green exterior (Figure 7.3: R). There were nine other drawn cane and wire-wound beads recovered from the structure, included a variety of small glass beads (such as the purple wire-wound beads in Figure 7.3: R, S). Worth mentioning is the presence of four tubular drawn cane beads of simple construction, cobalt blue, which exhibit very narrow linear protrusions running parallel to the perforation; these are most likely indicative of a mold (Figure 7.3: E). Other beads present in the collection included five small circular disk black stone beads (similar to those already discussed, Figure 7.3: CC), three unidentifiable organic beads, and one treated wood bead.

Moving from Unit 28 to the western edge of the plaza, we arrive at Units 1 and 2. Unit 2 seems to be a structure composed of multiple rooms, or at least composed of certain interior spatial divisions and entryways. Material culture of distinct Andean importance and artifacts with European influences were recovered from Unit 2, including a decorated gourd and a metal knife with a handle made of algarrobo. A substantial collection of beads was recovered from these two units, accounting for a significant proportion of the total number of beads found at Magdalena de Cao.

Specifically, there were 58 beads recovered from Unit 2, consisting of 48 *Spondylus* shell beads, 2 mother-of-pearl beads, 2 stone beads, and 6 glass beads (5 drawn cane, 1 wire-wound). One of the drawn cane beads was of complex construction, consisting of a base layer of black glass with inlaid white stripes parallel to the perforation (Figure 7.3: H). There were also fragments of a twisted Nueva Cádiz (Figure 7.3: C). A rare colorless spherical glass bead with white stripes and a third layer of colorless glass (Figure 7.3: L) is indicative of gooseberry beads recovered not just in a variety of Spanish colonial areas but throughout North America. As

noted previously, the presence of this gooseberry bead at Magdalena de Cao provides compelling evidence extending previous dates marking the occurrence of this bead back to the first half of the sixteenth century (Deagan 1987:167–168; Smith and Good 1982). Another drawn cane composite bead was composed of three layers; navy blue, white, and blue with alternating white and red stripes (Figure 7.3: G). Two remaining beads were of simple construction, one a small green wire-wound bead and another a drawn cane turquoise bead. Thanks to meticulous excavations, a significant quantity of *Spondylus* beads were found *in situ* in Unit 2, and were indicative of having been formerly strung together. Once exposed to the current environment, the delicate remains that held these small beads together disintegrated, and the oranges, reds, and purples of the shells faded. The *Spondylus* shell beads ranged in diameter from 3.64 mm to 5.30 mm and in length from 1.36 mm to 2.9 mm.

Excavations of Unit 1, located in an adjacent structure north of Unit 2, yielded an assemblage of 76 beads, making it the largest of the groups recovered at Magdalena de Cao, and included 55 *Spondylus* shell beads and 13 glass beads. The *Spondylus* shells were all similar small circular beads of varying purple, orange, and red combinations, and with a diameter range of 3.23 mm to 4.93 mm and lengths of 0.80 mm to 2.11 mm. Additionally, there were five white shells with three remaining together on a thread and the other two also still connected by thread. There was one stone bead, one treated wood (or seed) bead (Figure 7.3: DD), and another shell bead. The collection included nine glass beads of simple construction and varying colors, and some with interesting and unique modifications, such as a faceted blue bead (Figure 7.3: Q), a red faceted drawn cane bead with a diameter of 3.84 mm and length of 7.11 mm (somewhat similar to another red faceted bead, Figure 7.3: P), and an intriguing green molded bead with an unidentifiable geometric design (Figure 7.3: O). Other simple-type beads were small olive- and donut-shaped beads, three purple, one white, and one gray-blue. There were two compound drawn cane beads—a Nueva Cádiz bead and a spherical bead composed of an interior layer of dark navy blue glass, a middle layer of white, and a cobalt-blue exterior (Figure 7.3: K). There was a bead of composite construction with multiple layers of blue and white glass and alternating red and white stripes running parallel to the perforation (Figure 7.3: F). There was an interesting complex bead, most likely twisted, with a white base layer, spiraling green bands, and white stripes (Figure 7.3: I).

Small wire-wound and drawn cane glass beads were the only beads recovered from Unit 24 (Figure 7.2). They were amazingly well preserved, with 22 small glass beads still connected by thread, and an additional fragment of thread with 8 beads together.[7] The colors of the beads include white, varying shades of blue (sky blue, blue, navy blue), red/maroon, and green. The range in diameter of these beads was 2.09 mm to 3.4 mm, with length ranges of 1.24 mm to 2.44 mm, along with a larger misshapen bead with a diameter of 3.6 mm and length of 4.32 mm.

The last context of beads discussed here, Unit 19, very much exists in the space of the reducción, yet also was possibly at its fringes. Nine beads were recovered from this area: two small *Spondylus* circular disk beads; three glass beads; two small stone circular disk beads, one dark green and one black; two wood beads (one spherical, similar to Figure 7.3: DD, and another in the form of a circular disk), and additional material including a *Spondylus* shell along with considerable faunal and vegetable remains that are most likely representative of food preparation or its resulting waste. The archaeological evidence was suggestive of multiple

Figure 7.2 European glass beads strung together with original threads. Drawn cane and wire-wound glass beads, all simple construction, some tumbled and some untumbled.

possibilities for the area—perhaps once the site of a residence and subsequently a trash pile. In this ambiguous context of refuse and remains a revealing find was uncovered—the presence of a chevron glass bead nestled in a gourd filled with burned materials (discussed below). The other two glass beads found were a fragment of a Nueva Cádiz bead and a dark sky blue olive-shaped wire-wound bead (diameter 3.5 mm, length 4.38 mm). Interestingly, all of the glass beads were broken.

Although, beads did not figure critically in dating the occupations of Magdalena de Cao, because of the variety of other chronological sources, it is worth quickly presenting a summary of the beads used as chronological indices, such as Nueva Cádiz and chevron varieties. For instance, the chevron beads recovered from Magdalena de Cao all had seven layers and faceted finishings (Figure 7.3: A, B). Smith identifies these chevron beads as indicative of sixteenth-century varieties, and notes that the ones with green layers were unique to Peru (Smith et al. 1994). However, given the known occupations of Magdalena de Cao, it is most likely that we can date the use of chevron and Nueva Cádiz beads, along with the other glass bead varieties, to the late sixteenth century and at least throughout the early part of the seventeenth century. Nueva Cádiz beads are also present at Spanish colonial sites in the Americas, such as Malata, throughout the sixteenth century, and their presence at Magdalena de Cao indicates their continued usage and circulation among the Andes at least throughout the early seventeenth century (Figure 7.3: C, D) (Menaker 2011; Wernke 2011). These dates extend previous studies, which usually only attribute the usage of these glass beads to the sixteenth century (Deagan 1987; Smith et al. 1994; Smith and Good 1982). Ultimately, the evidence from Magdalena de Cao suggests that Nueva Cádiz and certain chevron bead varieties, among others, continued to be used among local communities longer than previously thought.

Figure 7.3 Beads from Magdalena de Cao (see guide).

GUIDE TO BEADS IN FIGURE 7.3

Classification criteria: quantity, manufacturing method, cross section, type, shape, modifying decoration, color (number of glass layers, from inside out), diaphaneity, diameter (range), length (range), number, corresponding classification types from Smith and Good 1982 where applicable, additional notes.

First row (from left to right):

A, B: Chevron beads; drawn cane; round cross section; compound; sub-spherical; faceted; opaque; 7 layers: green, white, green, white, red, white, blue; diameter range: 4.77–9.55 mm; length range: 4.68–10.07 mm; $N = 8$. Smith and Good classification: Class IV (chevron), Series C (faceted), Type 2 (compound construction).

C: Nueva Cádiz twisted; drawn cane; molded cross section; compound; tubular; untumbled (at least observable); opaque; 3 layers: blue, white, turquoise; diameter: 6.33 mm; length: 15.47 mm; perforation diameter: 2.39 mm; $N = 3$. Smith and Good classification: Class III (Nueva Cádiz twisted), Series A (untumbled), Type 2 (compound construction), Variety A.

D: Nueva Cádiz; drawn cane; molded cross section (square); compound; tubular; faceted corners; opaque; 3 layers: navy blue, white, cobalt blue; diameter: 4.28 × 4.53 mm; length: 5.08 mm; $N = 1$. Smith and Good classification: Class II (Nueva Cádiz plain), Series C (faceted), Type 2 (compound construction), Variety A.

E: Drawn cane; molded cross section (with linear protrusions running parallel to perforation); simple; tubular; cobalt blue; translucent; diameter range: 1.85–2.58 mm; length range: 7.92–10.42 mm; $N = 5$.

Second row (from left to right):

F: Drawn cane; round cross section; composite; tumbled; spherical; 3 layers: navy blue, white, navy blue; 2 inlaid white stripes running in a slight twisted orientation to perforation, with a thick red stripe/band running parallel in between the two white stripes in a similar orientation parallel to the perforation; opaque; diameter: 6.61 mm; length: 6.14 mm; $N = 1$.

G: Drawn cane; round cross section; composite; tumbled; spherical; 3 layers: navy blue, white, blue with alternating white and red inlaid stripes running parallel to the perforation; opaque; diameter: 7.23 mm; length: 5.67 mm; $N = 1$.

H: Drawn cane; round cross section; complex; tumbled; spherical; black with 3 white stripes parallel with perforation; opaque; diameter: 7.62 mm; length: 7.5 mm; $N = 1$.

I: Drawn cane; round cross section; composite; tumbled; olive-shaped; 2 layers: white base layer with green bands and white stripes running parallel to the perforation; diameter: 5.2 mm; length: 5.72 mm; $N = 1$.

J: drawn cane/wire-wound; round cross section; complex; dark blue with 3 alternating white and red stripes running parallel to the perforation; spherical/olive-shaped; translucent; diameter: 3.98 mm; length: 3.73 mm; $N = 1$.

K: Drawn cane; round cross section; compound; 3 layers: dark navy blue, white, cobalt blue; tumbled; spherical; opaque; diameter: 5.10 mm; length: 4.50 mm; $N = 1$.

Third row (from left to right):

L: Drawn cane; round cross section; composite; 3 layers: colorless, white stripes running parallel to perforation, additional exterior layer of colorless glass; tumbled; spherical; diameter: 7.81 mm; length: 7.47 mm; $N = 1$. Indicative of gooseberry beads (Deagan 1987:168).

M: Wire-wound; simple; modified (pressed flutes); red; opaque; diameter range: 8.16–10.15 mm; length range: 6.57–7.53 mm; $N = 2$.

N: Crumb bead; exterior is poorly preserved, most likely originally blue or purple; diameter: 6.21 mm; length: 3.77 mm; $N = 1$.

O: Drawn cane; simple; molded, unidentifiable geometric design; green; translucent; diameter: 5.42 mm; length: 5.95 mm; $N = 1$.

P: Wire-wound; round cross section; simple; faceted; sub-spherical; red; diameter: 6.17 mm; length: 4.26 mm; $N = 1$

(*continued*)

Q: Drawn cane; round cross section; simple; faceted; subspherical; sky blue; diameter: 3.79 mm; length: 2.73 mm; $N = 1$.

Fourth row (from left to right):

R: Drawn cane; round cross section; compound; 2 layers: clear interior core, green; tumbled; donut-shaped; diameter: 1.91 mm–2.54 mm; length: 1.27–1.73 mm; $N = 2$.

S: Wire-wound; round cross section; simple; purple; donut-shaped; diameter: 2.94 mm; length: 1.91 mm; $N = 6$.

T: Wire-wound; round cross section; simple; purple; donut-shaped; diameter: 3.97 mm; length: 2.52 mm; $N = 6$.

U: Wire-wound; round cross section; simple; green; olive-shaped; diameter: 3.16 mm; length: 4.9 mm; $N = 4$.

V: Drawn cane; round cross section; simple; turquoise/sky blue; slightly translucent; circular disk; diameter: 5.55 mm; length: 2.57 mm; $N = 1$

W: Drawn cane; round cross section; simple; dark blue; tumbled; spherical; translucent; diameter: 7.05 mm; length: 5.22 mm; $N = 1$

X: Wire-wound coil; round cross section; simple; composed of 5 circular coils, thus making it tubular in form; unmodified; black; opaque; diameter: 3.55 mm at wider end, 2.91 mm at narrower end; length: 6.04 mm; $N = 1$.

Fifth row (from left to right):

Y: Wire-wound; simple; unmodified; dark navy blue/black; opaque; large circular diameter: 18.34 mm; diameter of the tubular glass: 1.92 mm; $N = 3$.

Z: Drawn cane; round cross section; simple; cloudy clear; tumbled; spherical; transparent; diameter: 10.8 mm; length: 10.27; perforation diameter: 2.31 mm; $N = 1$.

AA: Mother-of-pearl pendant; diameters/lengths: 8.09 mm × 20.28 mm; thickness 3.33 mm; $N = 1$. Additional notes: A 90-degree perforation with the opening at one part of the large face; the other opening is at the top side of the pendant.

BB: *Spondylus* shell beads; circular; range of colors: orange/red; diameter range: 6.74–9.35 mm; length range: 2.52–4.17 mm; $N = 4$.

Sixth row (from left to right):

CC: Black stone (shale?); circular disk shape; diameter range: 2.03–6.77 mm; thickness range: 1.17–3.79 mm; $N = 17$. (Donnan and Silton 2011:223).

DD: Wood (seed or organic material); spherical; diameter: 5.89 mm; length: 5.20 mm; perforation: 2.12 mm; opaque; tan/red and mottled, with black throughout; $N = 1$.

EE: *Spondylus* shell beads; tubular; colors: orange; diameter range: 3.38–3.54 mm; length range: 3.64–6.47 mm[1]; $N = 3$.

FF: *Spondylus* shell beads; circular[2]; range of colors: red, purple, pink/red, orange/red, all with scattered presence of white throughout; diameter range: 2.71–5.30 mm; length range: 0.80–3.70 mm; $N = 173$.

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1 The lowest measurement is of a tubular *Spondylus* shell bead fragment.

2 Some of the *Spondylus* shell beads are uneven circles and "rounded squares," though this could be due to erosion and wear. It is also a somewhat subjective characterization. Therefore I have grouped such beads within the larger category of "circular."

Interpreting Beads from the Archaeological Record at Magdalena de Cao Viejo

The varied assemblage and rich preservation of beads and associated materials found at Magdalena de Cao provide important evidence of the uses and significances of beads during Spanish colonialism. For example, preserved threads that still hold together several of the beads are highly suggestive of their use in dress and adornment, as necklaces or bracelets, or perhaps woven into textiles. At the same time, beads could have been strung together for a whole host of other purposes; held together by thread, beads could have been more easily traded and kept track of. Moreover, the juxtaposition of *Spondylus* shell beads and European glass beads in contexts and assemblages, along with other materials, is revealing of cultural and colonial encounters. The varied distribution of beads with extensive pasts and usages in prehispanic contexts alongside distinctly European glass beads throughout the site of Magdalena de Cao suggests that the uses and meanings of the numerous different beads did not conform to a uniform pattern, or at least one that would indicate a clear dialectic of domination and resistance (Wernke 2011). Instead, in accordance with recent studies of colonial encounters, Magdalena de Cao exemplifies the complicated nature of colonial situations, which are filled with ambiguity, mutual appropriation, ambivalence, and contestation (see Liebmann and Murphy 2011). As Quilter suggests, the materiality of the social processes of the Conquest and Colonial Period is difficult to identify clearly (Quilter 2011). Additionally, the various disturbances throughout Magdalena de Cao due to ecological and historical factors provide certain challenges and limitations to the interpretive resolution of the archaeological contexts. Nonetheless, we are still afforded certain interpretive lenses as we consider the distinct locations and areas where these beads were recovered. The site of Magdalena de Cao, born from imperial violence and articulated with enduring indigenous relations and traditions, pulsed with meaning.

The Spanish colonial contexts, both social and religious, in which beads were used were quite dynamic. But amid such cultural convergence, beads may have signified in ambiguous and fluid ways. For instance, burned matter found in an overturned gourd at the fringes of the reducción is suggestive of long-standing Andean practices and offerings, but this instance included a European glass bead (see Figure 2.27 in Chapter 2). If this was in fact a ritual, it was carried out in an area away from the symbol and locus of Spanish colonial power, the church. Of course, it is also possible that the entire context might be refuse, deposited at the edges of domestic occupations. Given a colonial situation in which indigenous and European material culture mixed amid eclectic and changing beliefs and practices, it can be difficult to use material remains to ascribe hints of resistance to colonial encounters. What is more certain is that the archaeological contexts of beads further support a dynamic and flexible negotiation of European and indigenous influences.

The remains of *Spondylus* bivalves neatly placed beneath the level of the floor in Unit 2, with the surrounding sand floor revealing traces of burning, appears to be an offering reminiscent of important and ubiquitous prehispanic domestic rituals and practices. Yet in this "world turned upside down," colorful glass beads complemented the oranges, reds, and purples of *Spondylus* beads. One might ask whether the glass beads that circulated alongside shell beads also came to be considered *mullu*, a powerful object able to invoke and satisfy suprahuman powers of the universe (Carter 2011). The negotiation of these European materials and Andean

meanings contributed to the shaping of new cultural identities as local indigenous meanings were matched to colonial objects (van Dommelen 2005:136).

One must also consider whether the impressive assemblages of beads recovered from the domestic units on the plaza (Units 1, 2 and 28) might strongly reflect certain residents' higher status within the community, which offered privileged access to the plaza and possession of rare and coveted objects. Although interpreting the archaeological record is fraught with ambiguity, the presence of materials wrought and acquired through a great investment of human energy does suggest possible hierarchical social positions and relations, along with potentials for exchanges within the community and elsewhere.

Just as shell beads were used in burial practices throughout the prehispanic Andes, shell beads continued to adorn the dead during Spanish colonialism, except this time they were buried in churches. Although the contextual disturbances throughout the church at Magdalena de Cao prevent conclusive interpretations of their specific uses and significances in that setting, the sheer fact of the continued use of shell beads associated with the space of the church—a distinctly Spanish colonial political and religious structure—provides a compelling framework for a range of possible uses, much as at Chotuna, where both shell and glass beads adorned the dead. Recent historical archaeological work conducted nearby on the North Coast at the Spanish colonial church site of Ñoquique, dating to the sixteenth and seventeenth centuries, allows for an important contextual comparison. The European beads recovered from the surface collection of the church nave at the site of Ñoquique are diverse, including jet beads most likely originally composing part of a rosary, and various types of glass beads—many similar to those recovered at Magdalena de Cao (Deagan 1987:183).[8] At the site of Mocupe Viejo (1572–1652), in the nave of the church there are looted burials with scatterings of bones exposed from where they were originally entombed beneath the church. Here *Spondylus* shell beads were also extensively recovered in association with European beads (VanValkenburgh 2012). It is evident that shell beads, in particular *Spondylus*, remained an important material among the living and the dead, along with the more recently circulating European glass bead varieties. Ultimately, at this intersection of the familiar and unfamiliar, glass and shell beads "were more than just simple adornment as they were used to evoke other memories and associations meaningful to constructing early colonial identities" (Loren 2008:104).

At the site of Magdalena de Cao beads were used in an array of activities that crisscrossed the economic, political, social, and religious spheres of colonial Andean life—a fact that in many ways complicates dichotomies of colonizer and colonized. In lived realities, colonial Andean beliefs and practices were constantly being negotiated and reformulated in the reducciones, where European glass beads were used to invoke ancient Andean powers and *Spondylus* shells were interred with the dead in newly constructed Christian churches built in the shadows of earlier temples and shrines. Central to many of these meaningful activities, beads were not merely a backdrop to human action but were intricately involved in shaping cultural identities and negotiating structures of power.

NOTES

1 My analysis of the Magdalena bead assemblage occurred in two separate visits to the collection in 2010 and 2013, respectively. In total, my studies at the Museo de Cao were carried out during four weeks with subsequent library and other research in the preparation of this chapter.

2 Carter (2011:79–80) argues that the presence and use of *Spondylus* shells and beads at the time of the arrival of the Spanish have been overestimated.

3 "Hay en ella dos hornos de vidrio muy buenos," Vásquez de Espinosa, quoted in Soldi (2005:335).

4 It is important to note that the bead collection analyzed by Smith and Good (1982) is considered to correspond to the sixteenth century, though it comes from private collections and consists of materials removed unsystematically, so it cannot be relied upon for archaeological context, further making its chronological accuracy dubious. Therefore, this analysis provides foundational archaeological contexts to the study of European glass and shell beads in Peru and Latin America more broadly.

5 Given the productive insight gained from analyzing certain manufacturing features and modifications, and given the distinct variations of colors, a Munsell color chart was not used.

6 This count is based upon a minimum bead count. In certain cases, beads are extremely fragmented, thus limiting their analytical and typological resolutions.

7 In order to preserve the thread stringing these beads together, I chose not to adequately analyze all of these beads, and thus was not able to identify all of the manufacturing methods.

8 It is also worth noting that no beads made from jet were recovered from Magdalena de Cao.

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Volume Appendix

Correlation of Magdalena Project Artifact Numbers with Proyecto Arqueológico Complejo El Brujo (PACEB) Numbers

Jeffrey Quilter

Research on the artifacts recovered from Magdalena de Cao Viejo began shortly after they were excavated and continued as work proceeded. Magdalena project members created a numbering system for artifacts so that they could be referred to in publications; subsequently, Peruvian archaeologists at El Brujo numbered some of the same artifacts using a different system. In addition, some artifacts were never given specific numbers by one team or the other, although all retain field numbers and other information available in tags and other data sources in the collections stored at the Museo de Cao at the El Brujo Complex. Continuing work will rectify this situation, providing catalogue numbers for all artifacts.

The following list provides the Magdalena project numbers, the El Brujo numbers, or both as available. The list is incomplete, and it is hoped that a full accounting of all artifact numbers will be available in the future on the project website (https://www.peabody.harvard.edu/Magdalena).

The following list is organized by book chapter. The figure number in which the artifact is shown is given, followed by the Magdalena number and the PACEB number.

FIGURE NUMBER (MAGDALENA NUMBER)	PACEB NUMBER
Figure 3.3	PACEB_E1_173
Figure 7.1	PACEB_D1_0028
Figure 7.2 (both strings of beads)	PACEB_F6_00053
Figure 7.3A	PACEB_F6_55
Figure 7.3B	PACEB_F6_56
Figure 7.3 C	PACEB_F6_59
Figure 7.3 D	PACEB_F6_66
Figure 7.3 E	PACEB_F6_70
Figure 7.3 F	PACEB_F6_58
Figure 7.3 G	PACEB_F6_65
Figure 7.3 H	PACEB_F6_72
Figure 7.3 I	PACEB_F6_63
Figure 7.3 J	PACEB_F6_77
Figure 7.3 K	PACEB_F6_61
Figure 7.3 L	PACEB_F6_64
Figure 7.3 M	PACEB_F6_67
Figure 7.3 N	PACEB_F6_76
Figure 7.3 O	PACEB_F6_73
Figure 7.3 P	PACEB_F6_68

(*continued*)

Volume Appendix *continued*

FIGURE NUMBER (MAGDALENA NUMBER)	PACEB NUMBER
Figure 7.3 Q	PACEB_F6_74
Figure 7.3 R	PACEB_F6_69
Figure 7.3 S	PACEB_F6_78
Figure 7.3 T	PACEB_F6_79
Figure 7.3 U	PACEB_F6_75
Figure 7.3 V	PACEB_F6_60
Figure 7.3 W	PACEB_F6_62
Figure 7.3 X	PACEB_F6_71
Figure 7.3 Y	PACEB_F6_54
Figure 7.3 Z	PACEB_F6_57
Figure 7.3 AA	PACEB_D1_31
Figure 7.3 BB	PACEB_D1_32
Figure 7.3 CC	Not catalogued
Figure 7.3 DD	Not catalogued
Figure 7.3 EE, left	PACEB_D1_30
Figure 7.3 FF, center	PACEB_D1_29
Figure 7.3 FF, right	Not catalogued
Figure 8.1 E	PACEB_F1_062
Figure 9.6	PACEB_F1_0261
Figure 9.17	PACEB_F1_0260
Figure 9.22	PACEB_F1_0259
Figure 10.1 (05-M-02)	PACEB_F4_0118
Figure 10.1 (07-M-07)	PACEB_F4_0126
Figure 10.1 (05-M-06)	PACEB_F4_0119
Figure 10.1 (05-M-05)	PACEB_F4_0120
Figure 10.1 (07-M-14)	PACEB_F4_0132
Figure 10.1 (07-M-08)	PACEB_F4_0127
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