

SAN BARTOLO, PETÉN: LATE PRECLASSIC TECHNIQUES OF MURAL PAINTING

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Like the artist in charge of drawings for the San Bartolo Archaeological Project, the murals of San Bartolo have been documented as faithfully as possible through scale drawings and watercolor paintings. The illustration process presented me with the opportunity to conduct a very detailed observation of both the pictorial technique and the style of the San Bartolo artists. Just like modern artists copy the works of Rembrandt and Michelangelo to get acquainted with their techniques, in the San Bartolo murals every line, color, figure and even paint drops were copied, providing an opportunity to study the Maya masters of the Late Preclassic period. Now, all observations will be presented in regard to the preparation of walls, the design, the composition, the pictorial technique and the style of the San Bartolo murals.

PREPARATION OF WALLS

Structure Sub-1 in Las Pinturas was conceived and built as a unitary addition to the east side of the mound (Figure 1). The structure was specifically designed to be painted with murals and intended to be easily seen. Las Pinturas Sub-1 is a single, open room with three main doorways in the façade and two secondary ones at the sides. The walls climb until they form a curvature similar to the springing of a vault, but it is known that this room was not vaulted. Instead, the walls continue climbing vertically until they form a frieze that protrudes slightly from the walls and surrounds the four sides of the room, and on which the murals were painted. Several large beams crossed the 4 m of width of the room and interrupted the East and West murals. These beams, as well as other transversal beams and the slabs that were placed between them made internal supports, which could have represented a physical and visual obstacle, unnecessary.

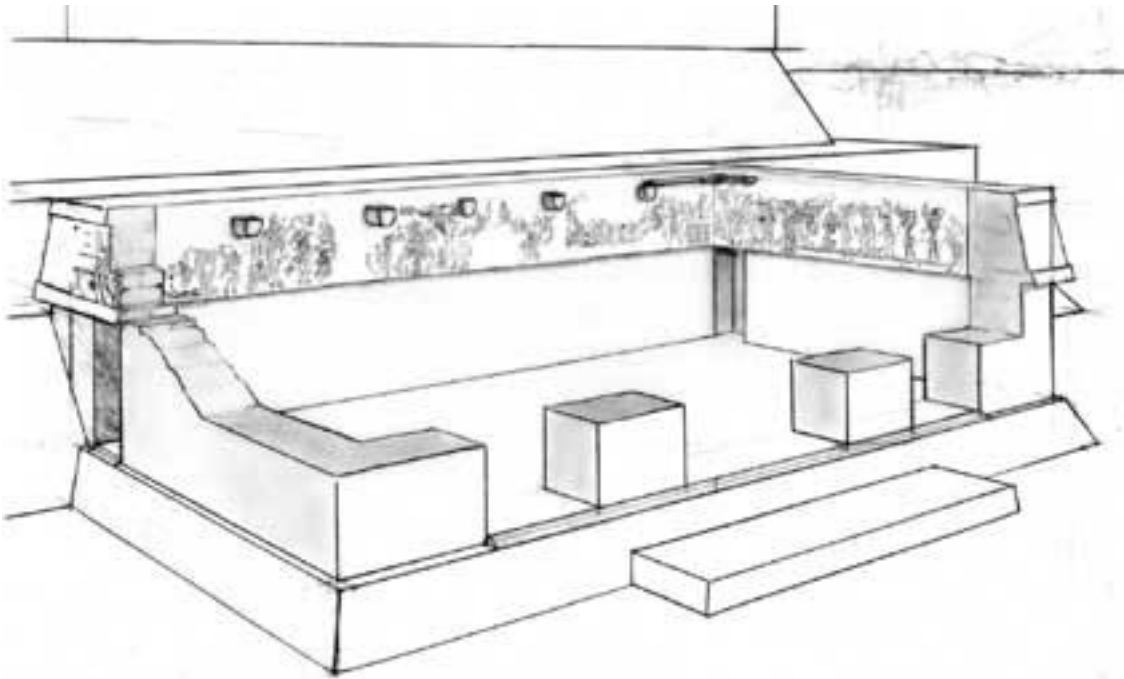


Figure 1. Reconstruction of Las Pinturas Sub-1 (drawing by Heather Hurst).

The structure is located on a small platform, with only one step needed to enter the room of the mural from the wide open plaza of the east side. The wide doorways of the façade featured a broad access that allowed the proper entrance of light and visitors. They probably passed under a large sculpted cornice, through red jambs, and into a room illuminated by the morning light reflected on the white walls, which probably shined under the painted frieze. The frieze is at a distance of only 1.40 m from the floor, placing the murals at a comfortable level for the sight. This peculiar architectural design widened the internal visibility, and its unrestricted planning facilitated and controlled the circulation of those who accessed the interior of the room.

In addition to the design of space, the construction materials used on the wall surfaces took into account the planned artistic program. Diana Magaloni, from the Universidad Nacional Autónoma de México, analyzed in 2003 the lime mortar of the internal upper frieze. Magaloni found that the internal frieze of the north wall presented a first coat of a stucco mix made with lime and coarse aggregates, and a secondary very thin lime stucco coat. Baryta (BaSO_4) was the aggregate used in Las Pinturas Sub-1; Magaloni, in previous works, had never found the use of baryta in stucco preparations. Baryta has properties very similar to those of another more common aggregate, the *sascab*; this suggests that the craftsmen of San Bartolo were aware of the properties they wanted to obtain with the mortar, and that they had experienced with local materials until an excellent mineral substitute was found.

In the upper portion of the North Wall, the secondary stucco coat presents a polished white-cream surface with no defects. The 2004 excavations revealed that the stucco coating in the West Wall seems to be different, much thinner than that of the North Wall, and has several charcoal intrusions distributed on the surface. The reason for

this different treatment is not clear; however, these irregularities in the surface did not jeopardize the execution of the paintings.

Both stucco levels contain organic glue. Magaloni identified this vegetal additive with a larger concentration in the first stucco layer. During her investigations on the different materials used in murals from different parts of México and in her minute analysis of the Late Classic murals in Bonampak, Magaloni found that a vegetal resin derived from tree barks –called *holol*- was mixed with lime and *sascab* whenever the stucco mortars were prepared.

This organic glue reduced the time for the drying and hardening of the walls, while the base painting was made and colors were gathered for the background (Magaloni 1996, 1999, 2004). This way, the Maya developed a technique that was somewhere between a *fresco* and a *secco*. The aggregate of organic glue used in Bonampak increased the strength of the adherence glues to the prepared wall (usually characteristic in *frescos*), and expanded the time available for work (usually associated with the *secco* technique); in this way, and through a slow drying process, a well hardened surface was prepared which allowed for the elaboration of very fine details in the paintings (Magaloni 2004).

While Magaloni's works document the techniques used from the Late Classic to the Postclassic period, there is evidence of experimentation with the adhesives used in the application of pigments since the Early Classic period in the paintings of the Zoque caves located in western Chiapas, México (Stone 1995). Hopefully, further analysis of the organic glue used in San Bartolo will help to identify its function in these Preclassic murals. What we now know is that the San Bartolo Murals are extremely long-lasting, a fact corroborated by their state of preservation after 2000 years, probably additionally favored by the organic glue. The surface of the San Bartolo mural has a very polished, compact and hard aspect, and the paint itself is strongly bound to the stucco layer. The Late Preclassic mural paintings of San Bartolo reveal very advanced abilities in the preparation of lime mortars by specialists who were familiar with them and had the capability to alter their chemical properties in order to obtain specific results.

PICTORIAL TECHNIQUE

Once the surface was prepared and ready, the painting process could be initiated (Figures 2 to 5). The San Bartolo mural was created in five basic stages:

- Art was schematized and the figures were minutely worked on paper (probably).
- The drawing was presented on the wall by means of a sketch, some times using a red paint, some times a black paint.
- The black edges were painted (with a few exceptions that we shall later detail)
- The colored areas were filled

- The finer details were united

The first stage for arranging the artistic design is the less known. There is plenty of evidence suggesting that the San Bartolo murals were pre-planned before the works on the wall were initiated; first, the composition is intense and unfolds a sequential narrative progression; second, very little changes were made on the figures, their positions and the thematic contents, from the initial drawings to the final painting; third, very well established conventions were used for the human body, the costumes and the characteristics of the deities, showing they were a part of the common practice of an artistic, regionally used vocabulary of the Late Preclassic period.

Paper was available as a cheap, portable and efficient method, probably used for the composition and the details of the art programs. Even though it is not possible to establish which, how or by whom the preliminary drawings and the sketches were accomplished, it is possible to discuss on the resulting compositions and the pictorial techniques used to create the art of the Late Preclassic Maya world.

The base drawings were painted red and black. Red was used for the North Wall, while black was used for most of the West Wall. The artist probably transferred the design to the wall with a raised hand, though many of the features are so much standardized –like the low tripods under the sacrificial offerings, the Principal Bird deity and the small birds- that they suggest that a pre-established format was used in the design composition. This way of “pre-painting” the murals is very common, and may be observed in Bonampak, in the tombs of Río Azul, and in Tikal’s Burial 48, among others.

The San Bartolo artist pre-painted the edges with a light wash for almost all the forms, in addition to the smaller details. The final painting displays only minor changes that include the initial drawings and the composition; these changes seem to be the result of trying to maintain the fluidity of the line, and not of modifications that had to do with spatial organization, content, or posture of the figures. The base coating also works as a guideline for applying the colors that were painted under the outline, such as the skirts and the tints in the figures of *Hunahpu* present on the West Wall.

There are only two examples with different changes made to the base coat in the final reproduction; they are both in the North Wall. Originally, the mouth of the zoomorphic cave of Flower Mountain had a large fang (as described by Saturno, Taube and Stuart, n.d.; Saturno and Taube 2004; Taube, Saturno and Stuart 2004). When the fang is straightened up to achieve the shape of a stalactite and is marked like a stone with the final painting, the identity of the cave is stressed as such, and not as a zoomorphic identity. The second composition that underwent change is the one in the curvature of the central gourd, in the final version of the painting.



Figure 2. North Wall (drawing by Heather Hurst).



Figure 3. West Wall, part 1 of 3 (drawing by Heather Hurst).



Figure 4. West Wall, part 2 of 3 (drawing by Heather Hurst).

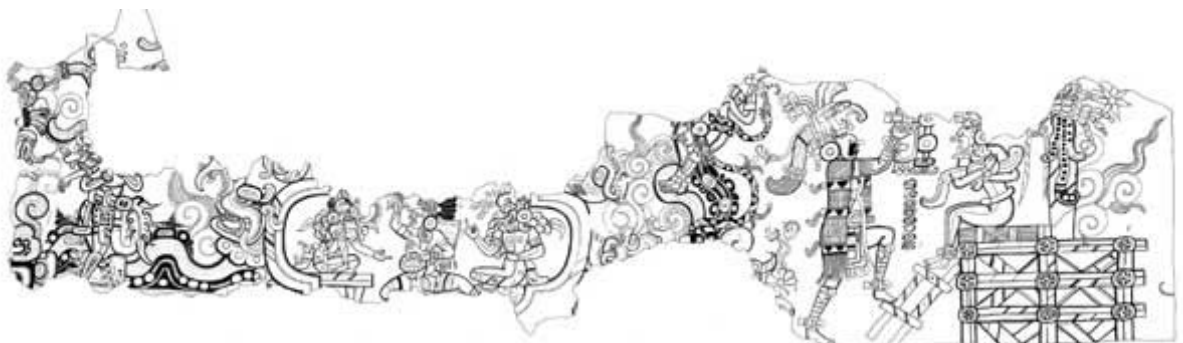


Figure 5. West Wall, part 3 of 3 (drawing by Heather Hurst).

In the lower coat, the thickness of the line is constant, but the final paint shows a variation in the calligraphic lines. Pigments used are black, red, yellow, white, orange, pink, peach and blue. For the time being, only samples of the red, yellow,

and black pigments and of the white background of the North Wall have been analyzed. These pigments are very common iron minerals used across the Maya area throughout the Classic (Magaloni 2004). The great variety of tints used in the West Wall appears to be the result of a complex blend of pigments. The background consisted of lime stucco with no pigment, which naturally had a composition of a gray creamy tone; however, a pure white was also used as a color.

The West Wall is different, due to the visible presence of blue, as well as to the frequency of a gray that refills and achieves a bluish tone; these areas need to be specifically analyzed to define its composition. In Preclassic painting there is a constant use of a simple palette of colors that include red, yellow, black and white, easily obtained from mineral sources. This possible use of blue and the variation in the mix of the pigments identified in the murals of San Bartolo, are an extraordinary artistic expression of a technical breakthrough.

THE HAND OF THE ARTIST

At this early stage of the investigation, it is possible to visualize in the painting the presence of the hand of two, or possibly three artists. The evidence of hands, according to Morelli's analysis (1892-1900), can be perceived at the time of comparing hands, feet, facial traits and other perceptible features that can be evaluated to see their similarities and differences, all this based on the individuality of the artists' strokes in these special characteristics which usually are the most difficult features to reproduce. This proposal of analysis suggests that somehow, it is subjective and difficult to make a distinction between the different pictorial schools of empiric or individual artists. Such weaknesses are to be acknowledged, but San Bartolo offers a good opportunity to evaluate the style of the artists' hands, as the technique is homogeneous throughout the room, and many of the features are repeated from one wall to the other.

Using Morelli's theories regarding the artists' identities, the best example about the hand of multiple artists is established in the stylistic change from the base coat to the final paint in Figure P20, the God of the Quiet Waters. The paint stroke of the close-up shows his raised hand in an identical position to that of the females depicted in the North Wall. The remarkably stylized hand shows the curvature of the index finger, while the rest features the shape of a fist; this posture is easily identifiable as the style of the artists who painted the North Wall. However, when the last final work was executed, the artist straightened up more the index finger and relaxed the curvature that forms the fist of the hand. This more natural posture is apparent in the style of *Hunahpu's* hands, depicted on the West Wall.

When comparing the profiles of faces and hands, it is clear that the work of the artists is consistent in the different scenes; in the *Hunahpu* scene and the scene of the mythic departure from Flower Mountain. The differences in general correspond to the first stroke of color. The use of red or black in the first stroke may be indicative in the differentiation of the artists, as well as their personal hallmark, or they may either represent a symbolic aspect of the creation of the first trait. In the scene at the corner, where the Maize God is dancing on the turtle, even the scaffold of the West

Wall and the babies of the North Wall appear to be a blend of both artists, depending on the figure. This may be confirmed by the blend of red and black in the first stroke corresponding to this area.

SPATIAL COMPOSITION

In the San Bartolo mural, it may be easily appreciated that the artists who painted in this minor polity were highly specialized in the technical of narrative painting, and were as well familiar with the subject (Figures 2 to 5). As to spatial organization, it is much similar to the design of codices. The artists used principles of rhythm and constant repetition, contrasted with a strong diagonal direction that led the sight of the observer. The composition maintained energy and dynamism through the sequence that framed the scene. Some of these examples are small, like the change in the way blood is dispersed; others involve the entire composition, like the scene of the females kneeling down and surrounding the Maize God in the North Wall. Here, the jaguar is subtly placed on the cave and shares some compositional characteristics in the form, with respect to the females.

Spatial composition has a symbolic use; the scene of the gourd and the scene of the babies that form the *quincunx* represent the cosmos, the direction of the four cardinal points and the *axis mundi*. The scene of the four *Hunahpu* erecting the world tree is a story that represents the physical creation in the spiritual environment of the schematized *quincunx*, depicted on the North Wall. The flexibility between naturalism and the schematized symbology in a singular composition is an additional characteristic shared with the codices and remarkably expressed in the San Bartolo mural. Although the mural is closely related to the styles and contents of the codices, the composition is very well adjusted to its own space, the rigid partition lines are not kept constant, and the painting makes a very good use of the architectural space.

STYLE OF THE PAINTING

The style of the painting characterized by the calligraphic trait, as well as the refill of color and the white margins, typify the mural painting of the Late Preclassic period in Petén. The painting technique of double scrolls, celestial bands and positioning of the figures in the outer corners of Structure 5D-Sub 10 in Tikal (Coggins 1975), are the ones that resemble the most the paintings of San Bartolo Sub-1, both in their execution and composition. Recent excavations at Cival revealed fragments of a Late Preclassic mural painting featuring the same style that the mural painting of San Bartolo (see Estrada-Belli and Bauer, this volume). While the fragments of the Cival mural are characterized by similar traits and scales, the pigments used seem to be different. Future analysis of these pigments, stuccos, mortar and their sources will be conducted next year to continue with the investigation of the regional development of mural painting during the Late Preclassic period.

CONCLUSION

As a conclusion, the discovery of the Late Preclassic mural in San Bartolo provides a wealth of new information on the creation of art, the exploration and use of materials such as stucco and painting, as well as on the use of mural art in prehispanic architectural programs. Compared to sculpture and pottery, it is very clear that mural painting during Preclassic Petén was the most expressive and advance form among the artistic expressions. As a significant form of art, the study of mural painting within its architectural context, which embraces an experimental period for those interested in the study of prehispanic art, is important.

Las Pinturas Sub-1 lacks a clear orientation in regard to other temples or plaza groups; however, it is oriented east, the cardinal direction associated to the cycle of birth and rebirth. It is built right on the bedrock, placed against the base of another major temple. Possibly, this building symbolically associated with the earth is definitely a stone house carved at a mountain base (see Stone 1995 for the symbolism of sculpture). The significance of the cave in the content of the mural is clear in the North Wall, where the Flower Mountain cave has its access towards east, and in the West and East Walls, where they are represented with the deities that are sitting inside quadripartite caves. Las Pinturas Sub-1 were specifically designed for the exhibition of the mural, which represents the ancestral regional myth, special subject of the birth, rebirth, and the mythic departure (Saturno, Taube and Stuart, n.d.; Taube, Saturno and Stuart 2004; Taube 2004), within a space that reflects the sacred theme of a cave made by man, highly accessible to a wider audience.

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Figure 1 Reconstruction of Las Pinturas Sub-1 (drawing by Heather Hurst)

Figure 2 North Wall (drawing by Heather Hurst)

Figure 3 West Wall, part 1 of 3 (drawing by Heather Hurst)

Figure 4 West Wall, part 2 of 3 (drawing by Heather Hurst)

Figure 5 West Wall, part 3 of 3 (drawing by Heather Hurst)