



## Research Article

# Blood, obsidian, and the Teotihuacan cult of the mirror

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### Abstract

Drawing upon iconological theory, this article argues that mirrors and blood were regarded as a conceptually linked pair within the imperial ideology of Teotihuacan, Mexico from the second century onward. The relationship between blood and mirrors is shown to have codified with the construction of the Pyramid of the Feathered Serpent, Teotihuacan's third largest edifice. This monument's facade was adorned with hundreds of monumental sculptures of oracular mirrors, some number of which incorporated actual mirrors formed of obsidian. I demonstrate that the Teotihuacan mirror sign took obsidian, a form of black volcanic glass that was intensively worked in the city, as a key referent. This monument was also the site of a historically large human sacrifice of more than 200 individuals, an event argued here to have involved bloodletting with obsidian knives and blades. I note that Teotihuacan interest in the mirror icon increased in concert with the city's residents' application of the reflective material of obsidian to warring and other blood-spilling behaviors. The mirror icon evoked both obsidian as a radiant material, as well as obsidian's potential for application to forceful martial actions. The article concludes that this icon in part signified imperial force, which was made real through the weaponization of the smoking glass.

### Resumen

Basándose en la teoría iconológica, este artículo argumenta que los espejos y la sangre fueron considerados como un par, vinculado conceptualmente dentro de la ideología imperial de Teotihuacan, México, desde el siglo dos en adelante. Se muestra que la relación entre la sangre y los espejos se codificó con la construcción de la Pirámide de la Serpiente Emplumada, el tercer edificio más grande de Teotihuacan. La fachada de este monumento estaba adornada con cientos de esculturas monumentales de espejos oraculares, algunos de los cuales incorporaron espejos reales hechos de obsidiana. Demuestro que el signo del espejo de Teotihuacan tomó como referente clave la obsidiana, una forma de vidrio volcánico negro que fue intensamente trabajado en la ciudad. Este monumento también fue el sitio de un sacrificio humano históricamente grande de más de 200 personas, un evento que se argumenta aquí que involucró derramamiento de sangre con cuchillos y hojas de obsidiana. Observo que el interés de Teotihuacán en el ícono del espejo aumentó en concierto con la aplicación del material reflectante de obsidiana por parte de los residentes de la ciudad a los comportamientos de guerra y otros derramamientos de sangre. El ícono del espejo evocaba tanto la obsidiana como un material radiante como el potencial de este material para su aplicación en acciones marciales contundentes.

El artículo introduce primero la metodología de la iconología. Tal como lo define Panofsky, la iconología se diferencia de la iconografía porque no intenta interpretar el significado de los signos sino comprender cómo ciertos signos reflejan el carácter de una sociedad determinada. La iconología tiene como objetivo identificar los factores culturales que ayudan a explicar por qué un ícono creció en importancia junto con los cambios históricos contemporáneos en una sociedad determinada. El artículo utiliza corpus icónicos y arqueológicos como conjuntos de datos paralelos para interpretar el lugar del ícono del espejo dentro de la ideología imperial teotihuacana. Se sugiere que el giro hacia la minería intensiva del material reflectante de obsidiana y la militarización de este material ayudan a comprender la centralidad del ícono del espejo en Teotihuacan.

El estudio comparativo de los programas escultóricos de la Pirámide de la Serpiente Emplumada y el Palacio de Quetzalpapalotl sugiere que los espejos de obsidiana se utilizaron ampliamente en el diseño de la pirámide. El uso de la obsidiana en estos contextos de élite indica que las élites teotihuacanas valoraban este material por encima de otros materiales reflectantes de uso frecuente. Se examinan otras co-ocurrencias icónicas y arqueológicas de obsidiana y espejos para mostrar la profundidad de su asociación dentro de la cosmovisión teotihuacana.

Pasando a una consideración del programa de sacrificios humanos de la Pirámide de la Serpiente Emplumada, se examinan los restos humanos desarticulados, la presencia de implementos de obsidiana “esparcidos” y la iconografía del agua del

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monumento. Estos aspectos de la pirámide conducen a una interpretación del programa de sacrificio como si se hubiera formado a través de la aplicación de obsidiana como arma. El análisis de obras de arte que muestran movimientos de “dispersión” en asociación con íconos de espejos y cuchillos de obsidiana corrobora aún más esta lectura. El documento concluye que el ícono del espejo de Teotihuacan significaba la fuerza imperial, que se hizo realidad a través de la militarización de la obsidiana.

The residents of Teotihuacan (approximately 100 B.C. to A.D. 800) observed a long-lived cult of mirrors and reflectivity, aspects of which may be observed in surviving reflective disks, high concentrations of mirroring substances, especially obsidian, and in numerous iconographic representations of mirrors (Taube 1983, 1992a, 1992b; Young-Sánchez 1990). Similarly, there are iconographic and archaeological indications that Teotihuacanos, as these people will be called here, practiced religious devotions that involved the spilling of blood in sacrificial and autosacrificial rites (Millon 1988a; Sugiyama 2005; Walton 2021), a behavior that has been more fully theorized by art historians with respect to later Mexica Aztec central Mexico (Klein 1987). While these two cults have previously been considered in isolation, this article draws on iconological theory to argue that mirrors and blood—obsidian preeminent among

substances and properties evoked under the former grouping—from around A.D. 180 were not discrete, but comingling essences in the *cosmovisión* of Teotihuacan, the largest urban center of Mesoamerican antiquity. This pairing synthesized into its most enduring and culturally consequential form with the building of the Pyramid of the Feathered Serpent, Teotihuacan’s third largest monument (Figure 1).

In concert with this monument’s construction between around A.D. 180–230 (Gómez Chávez et al. 2016; Sugiyama 1998:Table 3.1), the leaders of Teotihuacan conducted what was the largest human sacrifice to occur in Mesoamerica until that date (Cabrera Castro 1993; Cabrera Castro et al. 1991; Dosal 1925; Gómez Chávez 2013; Sugiyama 2005). Teotihuacan elites interred this killing, which marked a consequential historical rupture for the region, under hundreds of iconic and actual mirrors, the



**Figure 1.** Western facade of the Pyramid of the Feathered Serpent, Teotihuacan. Photo by the author.

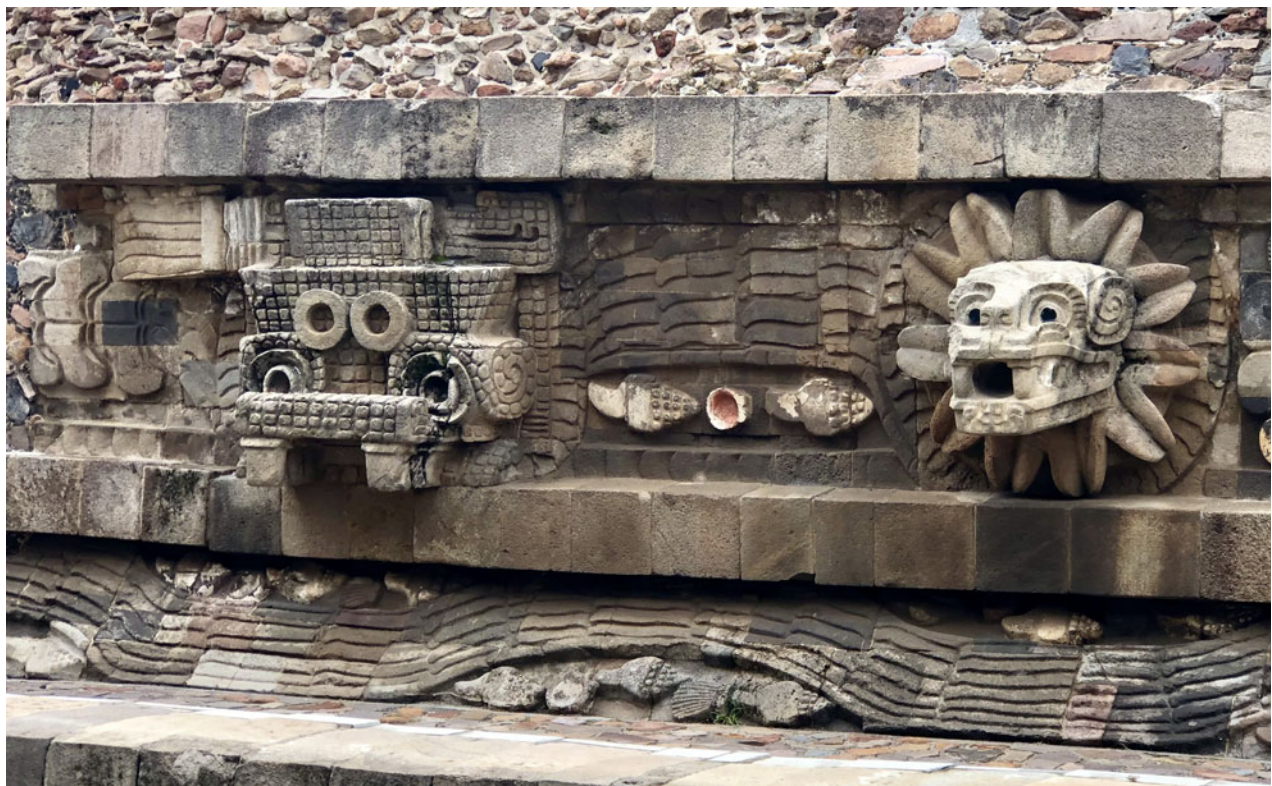
latter likely formed of obsidian and embedded into the eyes of some hundreds of tenoned head sculptures (Figure 2). Obsidian was not the most common medium from which Teotihuacanos manufactured mirrors. Rather, the preponderance of surviving archaeological mirrors from the city combined a circular slate backing with polished pyrite tesserae, an artifact class that was novel in form and quantity that I address below (e.g., Figures 3a and 3b; see also Robb 2017:Catalogue 4, 14, 48, 57). Nonetheless, scholars have yet to consider that the early Teotihuacan polity's new and forceful centering of mirror iconography, which commenced with the building of the Pyramid of the Feathered Serpent, occurred in that same era when the city's residents began to mine far more intensively and to import the reflective, symbolically charged, and martially expedient material of obsidian. Here, I argue that one key dimension of the meaning of the Teotihuacan cult of the mirror alluded to this volcanic glass.

Viewing iconic and archaeological sources as mutually informing comparative datasets that can be applied to an iconological comprehension of the Teotihuacan cult of the mirror, I argue that this event signaled the cooptation by Teotihuacan elites of an already ancient interest in mirror devotions. I suggest that the available contextual evidence from the Pyramid of the Feathered Serpent indicates that the formation of this building's sacrificial program involved the spilling of blood through bloodletting, the act of puncturing the skin to draw blood, or "scattering" rites carried out with obsidian blades. At early Teotihuacan, the widely

distributed mirror icon emerged as a means of alluding to the brilliant reflectivity of obsidian, that material which, in the weaponized forms of blades, knives, and spear points, would prove most essential for the realization of this city's imperial ambitions. More metaphorically, the mirror alluded to the state's capacity to spill blood with obsidian. From the late second century, blood and mirrors constituted a culturally specific conceptual pair that helped to define the Teotihuacan lifeway.

### The iconology of Teotihuacan mirrors

In *The Iconography of the Art of Teotihuacán* Kubler (1967:9) took early note of the Teotihuacan iconography of reflectivity in writing: "Saw-tooth rays and eyes represent brilliance." Teotihuacan artists' conventional use of these signs to connote reflectivity may be deduced from their contexts of occurrence: zigzagging lines appear around circular disks resembling the sun or on spear points of obsidian (e.g., Kubler 1967:Figure 45), while artists often placed disembodied eyes atop currents of undulating blue/green and red stripes thought to show flows of water and blood (e.g., Kubler 1967:Figure 3). Even as he advanced these and other readings, Kubler acknowledged that many iconic meanings intended by Teotihuacan artists are less accessible. Most consequentially, he recognized that the method of "iconography" as conceived by Panofsky (1955) was not, strictly speaking, practicable at Teotihuacan (Kubler 1967:11–12).



**Figure 2.** Detail of tenon heads of the western facade of the Pyramid of the Feathered Serpent, Teotihuacan. One Feathered Serpent head (right) retains its original obsidian inlay in the eyes. Photo by the author.



**Figure 3.** (a) An unadorned Teotihuacan slate mirror back. Perforations on either side permitted its attachment to another object, likely for wear. (b) An ornated mirror back thought to have originated in the Escuintla Department, Guatemala. Photos by the author.

In Panofsky's sense, iconography, or the interpretation of the meaning of images, could be accomplished most securely through the study of parallel literary corpuses produced by or widely read within that same culture. "[Iconographical analysis] presupposes a familiarity with specific themes or concepts as transmitted through literary sources, whether acquired by purposeful reading or by oral tradition" (Panofsky 1955:35). To interpret the meaning of a representational artwork, iconographers needed to familiarize themselves with texts that the artist(s) had read or heard. While many scholars now recognize that Teotihuacanos employed a system of writing, questions of its nature, the language it preserved, and the manner of its reading continue to inspire debate (Cabrera Castro 2017; Domenici 2022; Helmke and Nielsen 2021; Nielsen and Helmke 2011, 2014; Taube 2000a; Whittaker 2021). For Kubler, literary sources such as the sixteenth-century *Historia general de las cosas de Nueva España*, compiled by Sahagún in coordination with indigenous contributors, and Durán's *Historia de las Indias de Nueva España*, written roughly a millennium after the sixth-century diminishment of Teotihuacan hegemony throughout Mesoamerica, were too chronologically distant from Teotihuacan to reliably afford insight into the meaning of that city's icons (Durán 1967; Sahagún 1950–1982). Moreover, seemingly comparable forms found in the artworks of contemporaries, such as the Early Classic Maya, appeared in substantially different contexts. He therefore advanced his own *Iconography* with the awareness that any iconographic comprehension of Teotihuacan artworks would necessarily modify the methodology.

Since Kubler's writing, scholars have recognized a considerable, if dynamic and modified, cultural heritage from Teotihuacan that persisted among later central Mexicans (Carrasco et al. 2000). What is more, shared comprehensions of iconic elements—among other meaningful connections—between Teotihuacanos and other Early Classic Mesoamericans have become well-documented (Braswell 2003; Hirth et al. 2020; Lauriers and Murakami 2022).

Concurrently, scholars such as Taube (1983, 1992a, 1992b, 2000a, 2000b), C. Millon (1973a, 1988b), Headrick (2007), and Paulinyi (2001, 2009), among others, have made fruitful applications of iconographic analysis to the study of Teotihuacan artworks through reference to later ethnohistorical and contemporaneous etic sources.

While iconographic analysis is well established within Teotihuacan studies, scholars have less often explicitly applied Panofsky's method of "iconology," which he defined as seeking to determine the "underlying principles which reveal the basic attitude of a nation, a period, a class, a religious or philosophical persuasion," as consolidated in and qualified by an artwork. Iconologists, "deal with the work of art as a symptom of something else which expresses itself in a countless variety of other symptoms, and we interpret its composition and iconographical features as more particularized evidence of this 'something else'" (Panofsky 1955:31). Whereas iconography concerns itself with the identification of motifs and their corresponding narrative contents, iconology aims to identify the prevailing cultural forces that caused, necessitated, or enabled historical changes in the form assumed by and prominence afforded to signs and symbolic objects within a given culture.

Any reading of the Teotihuacan cult of the mirror would necessarily build upon Taube's foundational identification of several iconographic appearances of mirrors at Teotihuacan and its Early Classic contact sites (Taube 1983, 1992a, 1992b). He demonstrated the prevalence of the sign in Teotihuacan artworks across a variety of settings and forms, including on the facade of the Pyramid of the Feathered Serpent, on the lower backs of priestly and warrior figures in Teotihuacan murals and Teotihuacan-related artworks found abroad, and as wide U-shaped forms that depict ritual mirrors viewed in profile. He further linked these appearances of the mirror sign to archaeological mirrors that when scientifically recovered have typically occurred in symbolically ponderous settings, including placed near the lower backs of several of the human sacrifices of the Pyramid of the Feathered Serpent (Cabrera Castro 1993:Figure 6) and in

the tombs of Early Classic Maya rulers and elites (Blainey 2007; Coe 1988:227–228; Kidder et al. 1946:126–133). An iconological reading of this cult, which was clearly of great consequence for Teotihuacan elites and other powerful Mesoamericans, would seek to comprehend and describe how it manifested the basic societal attitude of which it was symptomatic. This same underlying attitude would be expected to manifest across a variety of aspects of the Teotihuacan lifeway with a common locus and chronology of articulation.

In Panofskian iconology the sign is not primarily understood as the illustration of a narrative or concept but as a manifestation of cultural forces that also appear elsewhere throughout the society. Nevertheless, Panofsky's contention that a society's iconic artforms may productively be understood through reference to an alternate corpus of that same society's cultural output bears heuristic merit. While scholars cannot point to a legible emic and contemporaneous literary corpus from Teotihuacan, they may refer to a corpus of archaeologically excavated materializations of cultural activity that have been documented in ritual and quotidian settings. While it is crucial to heed the variable degrees and kinds of intentionality expressed by particular archaeological contexts, reference to the findings of archaeologists in the comprehension of iconic dimensions of Teotihuacan artworks, and vice versa, obviates the two potential shortcomings of the application of iconographic analysis to Teotihuacan artworks identified by Kubler. This is owing to the fact that both the icons to be analyzed and the archaeologically documented materializations of cultural activity were produced by those same people in their own time. This study applies iconological theory through the comprehension of one of this city's central religious-political icons and artifact classes, the mirror, not primarily in relation to a body of contemporaneous texts but alongside considerations of key Teotihuacan archaeological contexts that incorporate obsidian, mirrors and mirror iconography, and evidence for expressions of blood sacrifice and the killing of fauna, human and animal. The findings of this analysis indicate that the Panofskian "something else" underlying the second-century codification of the Teotihuacan cult of the mirror related to the initiation of the intensive extraction of obsidian for the purposes of application to warring and other sacralized blood-spilling activities.

### Mirrors and obsidian at the Pyramid of the Feathered Serpent

The Teotihuacan iconic and archaeological records present compelling evidence that the city's mirror cult alluded in part to the intense reflectivity of obsidian, a significance that was codified at the Pyramid of the Feathered Serpent, beginning in the last decades of the second century A.D. (Figure 1). This monument numbered among the costliest structures of Mesoamerican history to build and was erected at around the same time as the Ciudadela, a monumental rectangular compound by which it is enclosed. Initially excavated by Gamio and Marquina between 1918 and 1922

(Gamio 1922:vol. I:LXVI–LXVII, 143–156), the pyramid's expense was owing in part to its facade's incorporation of 300–400 monumental tenoned heads, about two dozen of which survive in situ (Figure 2). These hundreds of monumental sculptures depicted mirrors from which emerged the deity Feathered Serpent, later called Quetzalcoatl among the Nahuatl-speaking Mexica Aztecs. Prior to and during this building's construction, early Teotihuacan elites executed an estimated 200 or more human sacrifices, whom they buried beneath or in immediate proximity to the pyramid (Figure 4; Cabrera Castro 1993; Cabrera Castro et al. 1991; Dosal 1925:Lamina V; Sugiyama 2005). Consideration of the iconic dimensions of this facade's sculptural program may deepen scholarly understanding of the imperial ideology that motivated the conduct of the accompanying sacrifices.

Taube demonstrated that slightly more than half of the pyramid facade's tenoned sculptures depicted a Feathered Serpent passing through a mirror. He noted the similarity of the pyramid's design to a more legible image appearing on the Las Colinas bowl, a mold-pressed ceramic work excavated by Linné in Tlaxcala (Figure 5; Linné 2003; Taube 1992b:55). The relevant passage shows the Feathered Serpent with its tongue extended and curved upward as its neck descends into the face of a circular disk, an oracular "mirror" akin to those appearing often at Teotihuacan in iconographic and archaeological iterations. The serpent's tail emerges from behind the mirror to arc upward and terminate in a geometricized rattle similar in form to those appearing on the facade of the Pyramid of the Feathered Serpent. Taube argued that the monument comprised what the later Mexica Aztecs called a Tezcacalco, or "House of Mirrors" (Taube 1992b). Sahagún recorded details of a specific sort of Tezcacalco, the Tezcacoac Tlacochealco, translated as, "Spear House of the Mirror Serpent." The Nahuatl reads, "There was slaying there, only sometimes when there were many captives. And there spears, arrows were guarded. With them there were conquests" (Sahagún 1950–1982:II, pp. 183, 193, quoted in Taube 1992b:58). Taube argued that the Teotihuacan structure anticipated the later Mexica Aztec edifice, both as a monument adorned with many sculptured mirrors and as the site of a large human sacrificial program.

The cited passage's mention of weaponry in relation to mirror serpent symbolism should be underscored. At Teotihuacan, obsidian was that material from which craftspeople formed the overwhelming majority of archaeologically detectable armaments. Cabrera Castro and colleagues (1991) and Sugiyama (2005) documented abundant quantities of obsidian blades and projectile points that were deposited among the pyramid's human sacrificial remains. These obsidian weapons' placement among the burials further indicates the pertinence of the concept of the "House of Mirrors" for the Teotihuacan monument. Additional obsidian of a less explicitly martial character occurs in high quantities on the ground surface near the Ciudadela and in suspected blade core storerooms of the nearby Great Compound (Spence 1981:774). The co-occurrence of the mirror icon alongside dense obsidian deposits at the pyramid suggests that the mirror was perceived as conceptually



**Figure 4.** Reconstruction of Grave 5 of the human sacrificial program of the Pyramid of the Feathered Serpent. Museo Nacional de Antropología, Mexico City. Photo by the author.

linked in some capacity to obsidian arms at second-century Teotihuacan.

Also present at the Pyramid of the Feathered Serpent among its human sacrificial remains were several actual circular archaeological mirrors formed of slate that were found positioned at the lower backs of some victims (Cabrera Castro 1993:Figure 6; Sugiyama 2005:159–163). Additionally, more than 200 slate mirror backs have been reported

from a man-made cave located beneath the Pyramid of the Feathered Serpent (Gazzola et al. 2016:114–117). First encountered by Gómez Chávez, this cave is comparable in layout to, if deeper than, a tunnel located beneath the Sun Pyramid that has been known about since 1971 (Gómez Chávez 2013:11–17, 2017; Heyden 1975).

It must be noted that though these ritual reflective surfaces are typically called “mirrors,” they were likely not created primarily to generate a clear looking surface for the purposes of self-viewing. Instead, they served diverse ritual functions, among which self-seeing may have been one facet (Healy and Blainey 2011; Lunazzi 2016). The mosaic mirrors that occur frequently at Teotihuacan participated in the pan-Mesoamerican ritual complex that employed reflective surfaces to facilitate supernatural vision and divinatory scrying by elites and to otherwise mark certain persons’ exalted social status (Carlson 1981:123–125; Coe 1988:227–228; Healy and Blainey 2011:238–241). These objects constituted but one aspect of what Healy and Blainey (2011:234) described in the Maya setting as a “reflective surface complex.” Though these disks were certainly prized objects, their desirability stemmed in part from their incorporation of the visual property of reflectivity, which was also to be found in bodies of water, droplets of blood, kernels of corn, quetzal feathers, jade, and obsidian, among other substances regarded by Mesoamericans as potent and sacred.

Most of the published examples of mirrors from the Pyramid of the Feathered Serpent were unadorned and small, measuring between 4 and 9 cm in diameter. However, related objects, including many examples recovered abroad, at times featured rich artistic elaboration. Such objects bore martial and lordly connotations in images of Teotihuacanos found beyond central Mexico, such as



**Figure 5.** The Las Colinas bowl. A Feathered Serpent passes through a mirror (right). Photo by the author.

those worn by the flanking figures portrayed on the sides of Stela 31 from Tikal, Guatemala, which records the suspected regicide by Teotihuacan affiliates of a ruler of that site (Stuart 2000:467–490, Figure 15.2). Indeed, the presence of these mirrors among the burials has been key to the interpretation of the costuming of several of the individuals as that of the Teotihuacan military.

A detail of the facade that has been understudied appears on one of the monument's Feathered Serpent heads. Though the building has been serially attacked and plundered over the nearly two millennia since its construction, one sculpture retains two obsidian disks embedded into the carved sockets of the tenoned head to form the deity's eyes (Figure 2). While there is no conclusive evidence from the pyramid that other tenoned heads of the program incorporated obsidian mirrors for eyes, this possibility is indicated by the sole additional example of programmatic architectural sculpture known to Teotihuacan, the carved pillar reliefs of the patio of the Palace of Quetzalpapalotl, which dates to the later centuries of the city's Early Classic history (Figure 6). The utility of comparing the two structures was first recognized by Sarro (1991).

Located a few meters southwest of the Pyramid of the Moon, the Palace of Quetzalpapalotl numbered among Teotihuacan's finest residences or religious and administrative buildings. Its central patio incorporates square-footed columns ornamented on their patio-facing sides with sumptuous, shallow relief carvings that retain several obsidian disk inlays of the same form and iconic significance as those found on the Pyramid of the Feathered Serpent. Teotihuacan artists inserted these obsidian mirrors into three passages of the compositions: as the eyes of mythological bird heads, as rows of disembodied eyes that serve as borders, and as ornaments embedded into representations of profile oracular mirrors. The use of obsidian mirrors to describe eyes in these sculptures corroborates Kubler's earlier reading of seriated eyes as Teotihuacan signs for reflectivity.

The depiction of profile mirror bowls in the patio program has been less discussed, perhaps because these iconic mirrors are abstract, conventionalized, and compositionally incorporated into the tails of about half of the birds (Figure 6b). They could therefore be misread as abstracted portions of the tails alone. However, in isolation, they are recognizable as iterations of the extended U-form of profile oracular mirror-bowls, which was initially identified by Taube (1992a:189). This style of mirror representation shows a cross-section of a flat, rimmed mirror-bowl disk that is viewed from the side. The artists studded each of these carved depictions of mirrors with three actual obsidian mirrors. In so doing, the sculptors called attention to the reflective quality of obsidian as a material, but also expressed the conceptual linkages between the mirror cult and the reflective glass.

The embedding of the iconic mirrors within the representations of the birds' tails likely conveys that the mythic birds emerge from the surfaces of the oracular mirrors, much as the Feathered Serpent heads emerge from the mirrors of the facade of the Pyramid of the Feathered Serpent.

The two artworks are therefore related not only insofar as both are comprehensive programs of architectural sculpture, but because they incorporate as key dimensions of their subject matter aspects of the Teotihuacan cult of the mirror and its rich iconography, which portrayed the disks' face as a portal for supernatural emergences. The comparative evidence from the palace indicates that obsidian disks were the preferred medium for depicting the eyes of supernaturals in architectural sculpture. It is therefore reasonable to deduce that obsidian mirrors formed the eyes of some number of the additional tenoned heads of the Pyramid of the Feathered Serpent.

When sunlight bounces from the surface of a honed obsidian disk, the material's blackish coloration gives way to glaring white light. Potentially hundreds of mirrors of this sort were originally incorporated into the Pyramid of the Feathered Serpent's facade. Towards the end of a clear day, as the sun neared the western horizon, the sculptured heads' black eyes would have burst aflame with reflected light. The incorporation of these obsidian mirrors into the Pyramid of the Feathered Serpent and Quetzalpapalotl sculptural programs indicates that obsidian was especially valued among mirroring substances. The singularity and expense of these architectural contexts suggests that obsidian was imbued with symbolic value by Teotihuacan elites over and above other mirroring substances that were more commonly used to form mirrors at the site, such as the polished pyrite tesserae of wearable oracular disks or the sheets of mica incorporated into sculptures of mirrors found on Teotihuacan incense burners (Figure 7).

Among the most significant developments within Teotihuacan society that occurred contemporaneously with the planning of the Pyramid of the Feathered Serpent was the advent of substantially increased obsidian mining, importation, and manufacturing, which was first documented by the Teotihuacan Mapping Project (TMP; R. Millon 1973b:57; Spence 1981:781). The mirror icon, as prominently recorded on the facade of the pyramid, attained preeminence as a hallmark of the Teotihuacan life-way over the same century that obsidian began to accumulate in the city's archaeological record, with a prevalence and density of distribution found nowhere else in Mesoamerica (Carballo 2007; Hirth et al. 2019; R. Millon 1973b; Pastrana and Dominguez 2009; Spence 1981, 1984, 1987; cf. Clark 1986). Scholars such as Pastrana and Athie (2014) have established that later central Mexicans regarded obsidian as a symbolically potent material that was associated with mirrors and deified, in part, because of its unique material properties. Levine (2014) has argued that the voluminous importation and preferential selection of certain obsidian sources at Postclassic Tutupec, Oaxaca, may have been motivated by a combination of trade, political strategy, and the arming of the Tutupec military. He linked developments in the site's obsidian procurement strategies to its imperial ambitions, dynamics that likely had earlier precedents at Teotihuacan.

Because of their novelty, the voluminous scale of Teotihuacan's obsidian exploitation regime and modified



(a)



(b)

**Figure 6.** (a) The columns of the patio of the Palace of Quetzalpapolotl retain obsidian mirrors in three key details: (1) as the eyes of mythological birds (upper right), (2) as disembodied eye disks (bottom left), and (3) as ornaments on profile mirror bowls, which are compositionally embedded into a portion of a bird's tail (center left; see Figure 6b for a detail of this passage). Photos by the author.

mirror cult would have been recognizable to second-through third-century Mesoamericans as material and ideational manifestations of what Pasztory (1997) characterized as the Teotihuacan “experiment in living,” that set of unique traits that distinguished Teotihuacan society within the broader Mesoamerican tradition. Over the second century, a greater number of individuals in Teotihuacan society

came into more frequent contact with a material, obsidian, that had as a distinguishing physical attribute the property of returning light and, under certain conditions, replicated and inverted images. Increased interactions with obsidian likely helped to focus Teotihuacanos’ collective attention on the optical phenomenon of mirroring. When their elites, in the latter half of the second century, directed the





**Figure 7.** A Teotihuacan incense burner, featuring six mirrors inset with reflective mica disks and two circlets. Photo by the author.

building of hundreds of monumental icons of mirrors, they chose in some instances to incorporate the actual property of mirroring into those icons by embedding them with obsidian disks. The contemporaneity of these two substantial developments within the Teotihuacan lifeway suggest that one “underlying principle” of the codification of the Teotihuacan mirror icon was the new intensity of the city’s residents’ interaction with the material of obsidian. Obsidian shaped into weaponry also figured into the actualization of the Pyramid of the Feathered Serpent’s human sacrificial plan, discussed below.

#### Antecedents for the Teotihuacan cult of the mirror

The Teotihuacan builders of the Pyramid of the Feathered Serpent did not invent their mirror cult wholly without precedent, but absorbed and meaningfully modified a long-extant tradition that already bore religious and political connotations. Mesoamerican engagements with transportable ritual mirrors formed of stone date to the Middle Formative period (approximately 1500–300 B.C.). Carlson (1981) catalogued 24 Formative Olmec monolithic mirrors produced from a range of iron ores. Olmec mirrors were concave and likely formed through a grinding and polishing method. Heizer and Gullberg (1981:109–110) excavated a pair of offerings incorporating concave mirrors at La Venta, Tabasco. Each incorporated a pair of drill holes, suggesting that in their pre-interment lives, the reflective

stones were perhaps worn as pectorals. Artists depicted such chest ornaments both in Olmec monumental sculptures and as inlays in the chests of smaller objects, including on a jade figurine, 8 cm tall, excavated from a tomb in La Venta’s Mound A-2 (Figure 8; Carlson 1981:141; Heizer and Gullberg 1981:112).

A fine Formative period pyrite mosaic mirror that may date to as early as 1000 B.C. was excavated in central Mexico at the site of Las Bocas in western Puebla (Marshack 1975). More recently, Oliveros (2004) documented 17 such objects within a mortuary context at El Opeño, Michoacan, while Mountjoy (2016) reported 49 Formative iron pyrite objects from Mascota, Jalisco. These artifacts show that the display and interment of reflective stones as markers of elite status were Mesoamerican behaviors of deep antiquity.

#### Iconic co-occurrences of mirrors and obsidian

Additional iconographic articulations of the Teotihuacan mirror cult’s associations with obsidian appear in the city’s corpus of murals. Painters completed several depictions indicative of the mirror icon’s relation to obsidian at the White Patio of the Atetelco apartment compound. In one example, executed around the perimeters of the portal of Portico 3, viewers see circular mirrors ringed by borders formed of trapezoids from the centers of which spring two obsidian knives of the sort classified by Sugiyama as Type B hooked bifacials (Figure 9; Sugiyama 2005: Figure 56). The painted knives bear the characteristic zig-zagging lines that identify their surfaces as radiant. The placement of the hooked obsidian knives (which have



**Figure 8.** Olmec jade figurine with inlaid mirror disk in chest, Mound A-2, La Venta, Tabasco. Photo by the author.



**Figure 9.** Portico 3 of the White Patio, Atetelco Apartment Compound. Hooked obsidian blades spring from oracular mirrors (right); a dancing warrior priest holds a hooked obsidian knife that spears a bloody heart (center). Photo by the author.

archaeological counterparts at Teotihuacan) within the mirrors' frames emphasizes the reflectivity common to both obsidian and mirrors through an act of visual substitution—that is, obsidian weapons are shown as being visually analogous to oracular mirrors because of their mutual reflectivity.

A good number of symbolic resonances for ritual mirrors have been identified by scholars of Mesoamerica, including their associations with rulership, supernatural vision, fortune-telling, fire and ignition, the sun, water, and the understanding of their surfaces as sites of emergence (Blainey 2007, 2016; Carlson 1981; Coe 1988; Healy and Blainey 2011; Kovacevich 2016; Lunazzi 2016; Taube 1983, 1992a). Not all of these associations have been as well documented at Teotihuacan as in other contexts, but they are not necessarily exclusive of either one another or of the symbolic dimensions of the Teotihuacan mirror cult and its icons as analyzed here. The painters' placement of these obsidian knife mirrors around the edges of a doorway may allude to the widely held Mesoamerican conception of mirrors as cave-like passageways or portals between quotidian and supernatural realms. A comparable scene showing the conjunction of a mirror with hooked obsidian knives was painted at Portico 2 of Platform 15, located immediately west of the Avenue of the Dead, the city's primary thoroughfare. However, in this example, the Teotihuacan Storm God emerges from the center of the mirror and hooked obsidian knives instead form the mirror's outer perimeter (Miller 1973:Figure 85).

An additional compositional format for the co-occurrence of mirror and obsidian symbols features a figure who wears or carries mirrors as part of their costuming,

while also clutching or wearing obsidian weapons, such as hooked knives or projectile points. Human figures of this sort appear on the lower walls of the White Patio's Portico 3 on either side of the portal (Figure 9). The figures, who are viewed in profile, hold in one hand a cluster of *atlatl* darts tipped with obsidian projectile points, and in their other hand lift a hooked obsidian knife that spears an extracted heart.

Portrayals of deities and deity impersonators also feature the co-occurrence of obsidian weaponry and mirrors. A mural from the Tepantitla apartment compound shows a deity/impersonator wearing a complex headdress, at the center of which appears a prominent rimmed mirror, its upper half covered by a row of three disembodied eyes connoting reflectivity (Figure 10). Above these signs for brightness appear three forms known as trilobes, depictions of blood droplets upon the face of the mirror, which are mediated from its face by a sign known as the "Trapeze and Ray" glyph (also called the "Year Sign"). Von Winning (1982) established that trilobes often appeared at Teotihuacan in contexts related to human sacrifice, and thus commonly denoted blood (cited in Heyden 1987:121–124). While the term "trilobe" is a misnomer (because more or fewer droplets may be shown), it will be utilized here, owing to its customary usage in the literature. Two additional mirrors, these knotted, appear on each of the being's shoulders. An elongated U shape beneath the deity/impersonator represents a mirror in profile view (Taube 1992a:189), marked with serrated reflectivity markings. The deity/impersonator clutches in their left hand a pair of obsidian darts. This hand is the figure's sole anthropomorphic aspect, which otherwise consists of a dense constellation of costuming



**Figure 10.** Tepantitla apartment compound. A deity or deity impersonator appears upon a mirror bowl marked with zigzags denoting obsidian. A cluster of obsidian spears is held in the extended right hand. At the center of the headdress the painter shows a mirror disk, atop which are superimposed eyes, a sign for reflectivity, and trilobes of blood. Photo by the author.

elements. Much like the mirror's face, the obsidian darts here mediate between the viewer's perception of the supernatural and quotidian realms. On the same wall above these frontal deity/impersonator figures appear depictions of warriors carrying obsidian spears as they emerge from mirrors.

#### Archaeological co-occurrences of obsidian and archaeological mirrors

As noted above, hundreds of transportable mirrors are known from Teotihuacan in the form of slate disks encrusted with pyrite. In addition to the Pyramid of the Feathered Serpent objects, several mirror disks have been archaeologically recovered from the city's two largest civic ceremonial structures, the Pyramids of the Moon and Sun. Other instances have occasionally been recovered from domestic settings (Heyden 1975:142; Rubín de la Borbolla 1947; Seler 1902–1923:431; Turner 1992:103). The most typical sort of mirror consisted of a hard backing, commonly formed of slate, though other stones and earthenware were sometimes used (Figures 3a and 3b). A rarer form of mirror consisted of unadorned obsidian disks, like those found on the Pyramid of the Feathered Serpent and in the Palace of Quetzalpapalotl patio. To one face of the former type, artists adhered carefully fitted pyrite tesserae that they polished to create a brilliant surface, while the alternate face was occasionally covered with complex imagery that was carved, incised, or painted onto stucco. On the

formerly reflective side of these disks, viewers today most often find the rust-like yellow-red powder called limonite that is left by corroded pyrite and other iron ores (Lelgemann 2016:165).

Later known among the Mexica Aztecs as *tezcacuitlapilli*—from *texcatl*, “mirror,” and *cuitlapilli*, “tail” (Villa-Córdoba et al. 2012)—these works exhibited some degree of Teotihuacan formal innovation, for they were neither concave, nor formed from single stones, as had been their Olmec predecessors; and unlike the Formative examples from Puebla and western Mexico mentioned above, the Teotihuacan mirrors employed polygonal rather than rectangular tesserae. They also differed through their wear on the lower back, on the shoulders, and in headdresses, as opposed to primarily on the chest. Given that they became key attributes of warrior costuming, and given that the lower back is difficult to guard for oneself, this positioning may have been apotropaic.

A cache excavated by Carballo (2014) at the site of La Laguna, Tlaxcala that dates to the middle second century features the co-occurrence of 15 obsidian implements layered atop five slate disks and one rectangular slate pendant. The slate objects were all covered with the powdered residues of oxidized pyrite. Two of the obsidian pieces (Carballo 2014:Figure 7.6) took the form of zoomorphic eccentrics evocative of centipedes, creatures noted in later ethnohistorical sources for their sharp, painful pincers, capable of drawing blood. The archaeologist argued that the cache was formed as part of a termination ritual that marked the depopulation of La Laguna in favor of resettlement at the growing urban centers of Teotihuacan and Cholula, Puebla (Carballo 2014:215). These findings indicate that the mutual appearance of obsidian implements, slate-backed mirrors, and allusions to the drawing of blood figured in the differentiation of the Teotihuacan self-conception from contemporaneous regional identities by the middle second century.

Pareyon-Moreno reported more than 250 disks or fragments thereof from a collection of central Mexican objects that were typologically classified as Teotihuacan mirrors (cited in Villa-Córdoba et al. 2012). Though this figure undercounts the total number of Teotihuacan mirror backs, it is the largest sum of such disks known from a single Mesoamerican site. While most of Pareyon-Moreno's sample lacks historical context, one of these disks came from the cave beneath the Pyramid of the Sun (see Heyden 1975:131, Figure 2). The disk shows a standing, full-body male, in profile, wearing a complex headdress and loincloth, and facing left. This design bears some stylistic resemblance to artworks from Classic period Veracruz. Heyden suspected that this and another disk found at the Sun Pyramid may have been introduced to the tunnel long after its construction.

Sugiyama and colleagues (2013:408, 417) more recently excavated several additional complete or partial disks under the Sun Pyramid. These disks ranged in size from about 10 to 45 cm in diameter, the latter being the largest specimen yet discovered in situ at Teotihuacan. The recovery of three disks at the bedrock level from the intact

cache of Offering 2 indicates that several disks were deposited in the structure at the time of its construction around A.D. 150–250 (Sugiyama et al. 2013:Table 3; cf. Sload 2015). Also present in the cache were abundant obsidian weapons, including prismatic blades and projectiles, 11 ceramic Storm God vessels, a whole eagle, and the decapitated heads of a puma, a wolf, and a hawk. This offering demonstrates that early Teotihuacanos observed the mirroring surfaces complex alongside the spilling of blood, here faunal, and in direct association with obsidian implements appropriate for cutting and piercing. It seems possible that the obsidian knives and mirrors were covered with the spilled blood of the decapitated animals during the offering's formation. Future testing for hemoglobin residues, a more archaeological approach that is beyond the scope of this iconological analysis, could help to clarify this potentiality. Burial 2 of the Pyramid of the Moon (Sugiyama and López Luján 2007), discussed below, incorporates a comparable array of symbolic elements.

A few archaeological mirrors were scientifically excavated from Teotihuacan residential contexts. Linné (2003:150–151) recovered the remains of a body, near the skull of which had been placed two obsidian disks. As noted above, obsidian disks are not numerically salient in the city's archaeological record; their cultural significance lies in their application to elite use contexts. Linné documented five additional obsidian disks of this type, along with one slate mirror back, in this same excavation (Linné 2003:64–65).

More than 500 Teotihuacan-style mirror backs have been recovered beyond the city (Blainey 2007), including an example suspected to have originated in the Escuintla Department of Guatemala, where great quantities of Teotihuacan-influenced artworks have been reported (Figure 3b; Berlo 1980; Chinchilla Mazariégos 2016; Hellmuth 1975; Young-Sánchez 1990). The compositional complexity of the illustrated example, which is stylistically faithful to Teotihuacan canons, shows the importance of these disks as conveyors of the city's cultural precedents from the Ciudadela to outlying regions.

Iconological theory would expect that the meaningfulness of obsidian's relation to the Teotihuacan mirror icon would appear in other dimensions of the society's lifeway. Consideration of the manufacturing context and processes of ritual transportable mirrors is of interest in this respect. The TMP reported a high concentration of pyrite and slate, including many broken slate disks, from a test excavation (TE 5; 6G:N5W1) in a precinct abutting the western side of the Pyramid of the Moon (Turner 1992:103). These are the key materials required to produce a pyrite encrusted mirror (Gallaga 2016; Melgar et al. 2016). Turner observed that in contrast to the diverse lapidary assemblage found in Teotihuacan's "Lapidary Barrio," only those materials needed for the manufacture of pyrite disks appeared in this area. She therefore suspected that it may have functioned as a mirror production workshop, controlled by agents of the Teotihuacan state, though further excavation would be required to verify this proposal (Gazzola 2010). More recently, Carballo (2007) demonstrated more conclusively that this precinct was the site of an obsidian

workshop that specialized in weapons manufacturing. The high concentration of pyrite and slate, some of it in disk form, found in proximate spatial relation to an obsidian workshop, lends some credence to Turner's hypothesis. This adjacency of mirror fragment concentrations to a verified obsidian workshop may serve as indication that the mirror cult and obsidian arms were mutually produced within a shared manufacturing context, particularly when those manufacturing activities were overseen by societal elites with links to the state.

This proximity was likely the result of practicality, to some extent, as the lithic working skillsets required to produce the two object types overlapped (Melgar et al. 2016). What is more, the analyses of Melgar and colleagues (2016:Figure 2.5d) and Gallaga (2016), applying experimental archaeology, optic microscopy, and scanning electron microscopy techniques, indicate that obsidian blades or flakes were likely used to cut the meticulously fitted and polished pyrite tesserae that formed the resplendent faces of Teotihuacan slate-backed mirrors. Nevertheless, Teotihuacan artisans and artists would have observed the frequent contact of obsidian with the gleaming pyrite from which they formed mirror faces.

This evidence demonstrates that by the late second century, Teotihuacanos began to produce pyrite-encrusted plaques and other oracular mirrors in significant numbers. Ritual mirrors were also apparently accessible to some segment of the city's typical residents. When these objects were deposited within ritual contexts, these offerings were sometimes made as buildings were terminated or new construction begun. These mirrors were regularly placed underneath obsidian objects appropriate for cutting, and in association with actual killed beings or allusions to the act of drawing blood.

### Iconographic and archaeological co-occurrences of blood and obsidian/mirrors

The Pyramid of the Feathered Serpent's placement of strong emphasis on mirror iconography occurred in concert with the deposition of a large human sacrificial program (Figure 4). Around 200 sacrificed persons are estimated to have been placed beneath or alongside the pyramid, and 50 or so were buried in an irrigation system that Teotihuacanos terminated prior to the construction of the Ciudadela (Gómez Chávez 2013:12; Sugiyama 2005). The earliest known Mesoamerican sacrifice to incorporate 200 or more individuals, it also numbered among Mesoamerica's most geographically diverse burial programs. Scholars, including Serrano Sánchez and colleagues (1997), White and colleagues (2002), and Sugiyama (2005), have found that many of the remains, particularly those concentrated near the center of the monument, exhibit osteological traits indicative of prior extended residence abroad. The extra-regional origins of many of these sacrifices support the view that the Pyramid of the Feathered Serpent manifested a martially expansionist and imperialist state ideology. In addition to the complete skeletons, who might be regarded as the program's "primary" sacrifices, Teotihuacanos

included four necklaces formed of 36 human jaw bones that were worn by certain burials (Spence et al. 2004). These necklaces demonstrate that at least 36 bodies were partially disarticulated to form the complex. While the timing of these dismemberments cannot be precisely placed, they suggest that quantities of blood were spilled prior to the formation of the offering.

By contrast, the specific means through which the primary sacrifices of the program died is not clearly indicated by osteological traits (Sugiyama 2005). Rather, the binding, in many cases, of their hands behind their backs, at times in association with fragmentary surviving rope fibers, suggests an involuntary and sacrificial manner of death. In his seminal study of the monument, Sugiyama argued that clues to the cause of death come from the program's accompanying offerings. He made particular note of the deposition of thousands of obsidian blades, projectile points, hooked bifacials, and eccentrics placed over and in association with the burials prior to their interment (Sugiyama 2005:124–140). Among these were numerous obsidian objects appropriate for bloodletting and other rites of blood spilling, including human sacrifice (Sugiyama 2005:131–135; see also Cabrera Castro et al. 1991:Figure 8). The prominence of obsidian in Teotihuacan's archaeological record would indicate that bloodletting was carried out with some regularity using this medium at Teotihuacan. The presence of these implements suggested to Sugiyama that bloodletting was at play in the program's formation. It is perhaps notable that the later Mexico Aztecs related that the mandate to spill blood through sacrificial rites was established by the god-man Quetzalcoatl, the Nahuatl name for Feathered Serpent (Klein 1987:350–351). There is therefore ethnohistorical support for the association of the Feathered Serpent with the impetus for blood spilling.

An investigation by Walton (2021) provides the strongest evidence for the use of obsidian implements in bloodletting rituals at Teotihuacan. Operation 18 of the Proyecto Arqueológico Tlajinga Teotihuacan recovered four bloodletters from the Tlajinga District located near the southern terminus of the Avenue of the Dead. Applying the method of high-magnification use-wear analysis, Walton documented surface modifications that accrued to the obsidian objects over their use lives. He also applied the approach of experimental archaeology, which allowed him to differentiate various use-wear markings appearing on obsidian cutting implements. A total of 29 different materials were cut by the author using Teotihuacan-style obsidian replicas. He later compared changes to the implements caused by these piercing activities to Teotihuacan archaeological objects. The physical characteristics of the use-wear patterns of the archaeologically excavated obsidian objects most closely resembled those appearing on Teotihuacan-style obsidian reproductions that the author used to puncture pig skin, which simulated the act of bloodletting (Walton 2021:290). Walton also visually identified blood adhered to the archaeological perforators, which helped to confirm their use in bloodletting. The four archaeological implements were excavated from the central patio of an apartment compound

alongside an additional obsidian blade, 12.5 cm long, and a neonate burial positioned in a complete ceramic dish. Walton's findings indicate that obsidian implements were used in rites of blood sacrifice and that these implements were associated with human mortality.

Sugiyama argued that the distribution pattern found among the obsidian offerings of the Pyramid of the Feathered Serpent's sacrificial program, among which were intermixed pieces of greenstone, likely resulted from their deposition via a "scattering" motion, like that through which a farmer might distribute seeds or nurture them by spilling handfuls of water. Scattering hands number among the most common of motifs in Teotihuacan imagery. The scattering theme also appears in Maya dynastic artworks, where, as shown by Stuart (1984), the act portrayed bloodletting and bore connotations of the sowing of seeds (Figure 11a). Throughout their history, Mesoamericans ritually spilled blood to propitiate the gods, supplicate for rain, and ensure rich agricultural harvests. Millon (1988a) argued that bloodletting likely also carried these resonances at Teotihuacan.

The most explicit portrayal of bloodletting from the city is thought to have been originally painted on the walls of the Tlacuilopaxco apartment compound, located east of the Pyramid of the Moon. The mural shows scattering figures beneath bicephalic serpents, not unlike those occurring in Maya dynastic bloodletting scenes (Figure 11b), suggesting that the Maya and Teotihuacan scattering motions held cognate meanings. The figures wear the common costuming attribute of ritual mirrors at their lower backs. Here, bloodletting, depicted as the scattering motion, has apparently been carried out using maguey spines, for these appear on either side of the figures. The scattering persons also hold satchels in the form of serpent rattles and wear feathered animal headdresses, traits that call to mind aspects of the Pyramid of the Feathered Serpent facade. More commonly, priestly elites, who wear elaborate costumes incorporating mirrors or reflectivity signs at the lower back, scatter droplets from their hands without explicit depictions of a piercing instrument (Figure 11c).

Additionally, portrayals of deities at times drop jades—which Mesoamericans held among the greatest of precious objects—from scattering hands as they emerge from mirrors. Such a scene occurs at the Tetitla apartment compound (Figure 11d), depicting a deity/impersonator that emerges from a mirror, dropping jades from outspread hands. On the deity's head appears a complex headdress featuring a squarish mirror, from which projects towards the viewer the head of a raptorial bird that grasps an insect spine like that of a scorpion or centipede. On either side of the bird's head appear coursing red and blue tubes that at once evoke extracted intestines and currents of blood mixed with water. Above these coursing forms appear yellow hooks topped with blue trilobes, a conjunction that but for the elements' jewel-like pigmentations would be legible as hooked knives splattered with blood. Zigzags signifying radiance bound the perimeter of the headdress. Though less literal than the Tlacuilopaxco murals, the Tetitla painting shows the scattering motion in a compositional setting



(a)



(b)



(c)



(d)



(e)

**Figure 11.** (a) A Maya ruler “scatters,” Maya sculptor(s), Stela 22, Tikal, Guatemala. (b) A “scattering” elite wears a lower-back mirror between rows of bloodied maguay spines and beneath a bicephalic serpent, Tlacuilopaxco Apartment Compound. (c) A row of priestly elites “scatter” in procession, Tepantitla Apartment Compound; reflectivity is indicated by the eye sign at the figures’ middle torsos. (d) A deity or deity impersonator scatters jades while emerging from a mirror and wearing a headdress bearing a mirror and blood allusions, Tetitla Apartment Compound. (e) Disembodied hands wearing a headdress “scatter” red droplets onto a fringed disk with diagonal stripes, a probable mirror. A blue trilobe speared on a “trapeze and ray” sign appears above another fringed mirror in the upper right of the headdress, Tetitla Apartment Compound. Photos by the author.

shared with reflectivity signs and allusions to bloodletting and sacrifice.

A scene from an adjoining room of the Tetitla compound shows disembodied hands dropping darker red circular objects through streams of pinkish red onto the surface of a fringed disk, an oracular mirror streaked with light (Figure 11e). A headdress “worn” by the mirror and scattering hands features on its right side another mirror, above and below which are shown rows of droplets possibly signifying blood, water, or both. This painting indicates that at Teotihuacan oracular mirrors may, at times, have served as receptacles for droplets of blood produced during bloodletting events. Alternatively, this painting could have been metaphorical, relating that the mirror-like face of obsidian objects was at times covered with blood. The Tetitla paintings occur in and near the apartment’s patio. Along with the Tlajinga cache and the murals of the White Patio, there are the outlines of a pattern linking domestic patios to bloodletting.

Teotihuacan artists completed several depictions of obsidian implements piercing hearts or covered by trilobes connoting blood (Figures 9 and 12a–12b; Carballo 2007:182–186; Sugiyama 2005:Figure 58). The frequency of this imagery suggests that the meeting of blood and obsidian in blood-spilling rites loomed large in the Teotihuacan imaginary and may well have been commonplace and consequential in the city’s civic ceremonial life.

The density of water iconography appearing on the facade of the Pyramid of the Feathered Serpent might also indicate that bloodletting activities occurred there. The facade features conch and mollusk shells and, more subtly, the borders of the inset panels of its *tableros* incorporate scalloped borders that may allude to lapping waves. The Feathered Serpent, depicted with water gushing from its mouth in later Teotihuacan artworks, was a giver of water in the city. It is therefore notable that the Mexica Aztecs of later central Mexico at times supplicated for water through the conduct of human sacrifices that emphasized the spilling of blood. Following the principles of sympathetic magic, the flow of blood served as earthly purchase for rain, which was given by the gods in exchange.



**Figure 12.** (a) A striding figure holds a bloody heart on an obsidian blade in their right hand and an obsidian spear point in their left. (b) A faunal deity wears a headdress of three obsidian spears with droplets, possibly water or blood. Photos by the author.

Bloodletting directed towards water procurement was at times carried out in later central Mexico via the cutting of sacrifices’ throats at the soft tissue of the jugular vein. For example, Toribio de Benavente (or Motolinia) recorded of a ritual of child sacrifice dedicated to “el dios del agua” that, “They did not take out the hearts of these innocent children but slit their throats” (Benavente 1969:35; “*A estos niños inocentes no les sacaban el corazón, sino degollábanlos;*” all translations from original Spanish by the author). This mode of sacrifice apparently occurred with some frequency, for Durán recorded of an alternate ritual:

Thus, they took the Indian woman, giving her four strikes with a large stone that they had in the temple [...] and before she had finished dying, thus stunned by the blows, they cut her throat, as one slits the throat of a ram, and the blood flowed over the same stone.

*Así luego tomaban la india, daban cuatro golpes con ella en una peña grande que había en el templo, [...] y antes que acabase de morir, así aturdida por los golpes, cortábanle la garganta, como quien degüella a un carnero, y excurríanle la sangre sobre la misma peña.* (Durán 1967:76).

Durán related of another event that the slit throat of a human sacrifice “bathed everything in blood” (Durán 1967:147; “*se bañaba todo en sangre*”). It must be stipulated both that these textually recorded events occurred more than a millennium after the dedication of the Pyramid of the Feathered Serpent, and that this later culture venerated Teotihuacan as an ancestral tradition (Boone 2000) from whom they had inherited substantial portions of their worldview. Of interest for consideration of the Pyramid of the Feathered Serpent sacrificial program, this common mode of sacrifice only rarely left osteological markings, which are absent on the remains (Román Berrelleza 1987:139). While these data indicate bloodletting as a candidate of interest for the formation of the sacrificial program, it is not yet possible to determine the extent to which the spilling of blood factored into this program’s formation. If the individuals were indeed executed at the pyramid itself and using the associated obsidian objects, future hemoglobin testing of the soils and obsidian implements surrounding the Pyramid of the Feathered Serpent remains may clarify these questions. For present considerations, it is sufficient to note that blood-spilling rituals were indicated by aspects of the monument’s conception, the realization of which involved the intentional termination of hundreds of human lives. These blood-spilling allusions were advanced within a context rich with obsidian implements, mirror iconography, and many actual mirrors, implying the significance of their co-occurrence.

There is evidence that Teotihuacan artisans at times used the materials of obsidian and slate, of interest because used to form most mirror backs, to portray or evoke acts of blood sacrifice. Most explicitly, numerous eccentric obsidian objects from the city depict a variant, sculptural form of the trilobe design (e.g., Figure 13 top right; Stocker and Spence 1973). In these works, Teotihuacanos possibly expressed an interest in the reciprocal relationship between



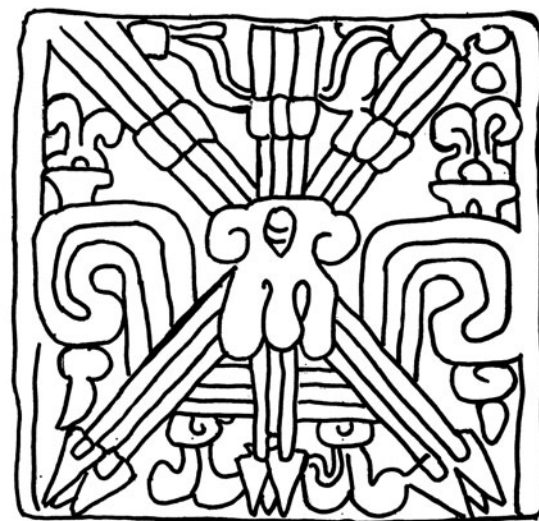
**Figure 13.** Assorted Teotihuacan obsidian objects: (left and bottom right) spear points; (center) a human figurine; (top right) a trilobe. Photo by the author.

blood and obsidian/mirrors in their *cosmovisión*; a mirroring substance became blood, and blood a mirroring substance. Relatedly, Taube discussed slate objects carved in the form of droplets and painted red on one side (Taube 1983:119). He suspected that these were perhaps cast—one might say “scattered”—in rituals of prognostication. These objects possibly alluded to the meeting of blood and a stone associated with mirrors.

A common type of obsidian eccentric often found in deposits that shows a human torso with stubbed extremities may likewise have used obsidian to imply blood spilling (Figure 13 center). Carballo noted the similarity of these figurines to the posture of the human sacrificial remains from the Pyramid of the Feathered Serpent, which were found bound with their arms behind their backs (Carballo 2007:186). These obsidian works may therefore depict the silhouette of a captive human body as it appeared just before sacrifice. This understanding is supported by Sugiyama and López Luján’s recovery of several figurines of this type from Burial 2 of the Moon Pyramid (approximately A.D. 200–300), which also incorporated a bound and sacrificed individual foreign to central Mexico and pyrite mirror disks atop which were layered obsidian blades (Sugiyama and López Luján 2007:129). In this burial, each figurine was found with an obsidian knife carefully pointed towards its head as though poised to lance the depicted upper body. Here, the individual artworks were situated within a depository setting whose spatial arrangement possibly connoted for its designers the act of slicing flesh with an obsidian knife. The human remains in this deposit resemble those of the Pyramid of the Feathered Serpent sacrifices insofar as the hands were bound behind the individual’s back and the victim likely lived for some time beyond the city. A shared means of execution was possibly applied during the two sacrificial acts.

A succinct depiction of the configuration of potent signs and substances—obsidian, the mirror, and blood—identified by this study appeared at later Tula, the most prominent city-state of Early Postclassic (approximately A.D. 900–1200)

central Mexico, and one of Teotihuacan’s inheritors. Several sculptures from Tula’s Pyramid B, the second largest pyramid of that site (López Luján et al. 1995), show smoking mirror, blood, and obsidian spear compounds (Figure 14). An oval possibly showing a human heart set within a trilobe sits atop the intersection of three bundles of obsidian-darted spears. These elements are superimposed atop a mirror-bowl seen in profile. Viewers find on the rim of the bowl profile earpools (Taube 1992a:175–176) from which rise wisps of smoke, potentially marking it as a “smoking mirror” of obsidian. The layered elements of this sign cluster are akin to those of elite offerings known from earlier Teotihuacan, such as the Sun Pyramid’s Offering 2 and the Moon Pyramid’s Burial 2, which likewise incorporated mirror disks placed underneath numerous



**Figure 14.** A smoking mirror bowl, obsidian spear, and bloody heart trilobe compound from Pyramid B, Tula, Hidalgo. Redrawn from López Luján and colleagues (1995:Figure 141:3).



obsidian blades and in relation to killed beings. The Burial 2 sacrifices included the one human already mentioned, as well as several eagles, three rattlesnakes, two pumas, and one wolf (Sugiyama and, López Luján 2007:127–130). Archaeologists suspect that the pumas and wolf may have been buried alive, though the other sacrifices more probably perished from bloodletting.

### Contextualizing the Teotihuacan mirroring surfaces complex

#### *The mirror and mirroring in Teotihuacan artworks*

The largest number of Teotihuacan mirror representations disseminated from a ceramic workshop adjoining the exterior of the northern platform of the Ciudadela that produced incense burners (Múnera Bermúdez 1985). Teotihuacan incense burners incorporated representations of mirrors and evoked mirrors in an additional important sense. These complex objects evince a cognitive mode characterized by Pasztory (1997:161–181) as “assemblage,” through which migratory signs, among them circular mirrors, were adhered to slab scaffoldings that fronted two-part ceramic jars with an hourglass profile, inside of which early central Mexicans burned incense (Figure 7). At the centers of their front-facing compositions, artists consistently placed a human visage, its mouth at times blocked from view by the appearance of a sign in the form of a cross-section of an architectural profile known as *talud-tablero*, which likely originated in Formative Puebla-Tlaxcala (Gendrop 1984). This profile became strongly associated with Teotihuacan in the Early Classic period, after being deployed on the most monumental and paradigmatic iteration of this profile—that found on the Pyramid of the Feathered Serpent. Mirrors are abundant on the incense burners, though some exceptional instances do not possess them (e.g., Manzanilla and Carreón 1991:302). When present, they may incorporate inset reflective mica surfaces, which depart in their rarity and visual qualities from the matte ceramic and pigment that characterize the remainder of these objects’ surfaces.

The presence of these mirrors in relation to images of human faces and frequent accompaniment by sprays of feathers may indicate that these incense burners at times depicted complex headdresses formed from an ephemeral scaffolding like *amatl* bark paper, which otherwise do not survive archaeologically. Consider, by way of comparison, a paper headdress depicted on page 30 of the Terminal Postclassic or Early Colonial Codex Borbonicus, which shows a scene of deity embodiment conducted during the Ochpaniztli harvest festival (see Pasztory 1983:Colorplate 34). The Borbonicus headdress incorporates a mirror below a Teotihuacan-style “Trapeze and Ray” sign at its center. The production of the incense burners’ constituent signs, or *adornos*, from molds calls to mind the mirroring relationship between a mold and the object that it manufactures. The locus of manufacture and image content of the incense burners show that they disseminated the mirror complex adopted by early Teotihuacan elites to the

domestic spaces of typical urbanites in later centuries of the city’s Early Classic habitation.

Beyond the numerous representations of mirrors discussed in this article, it is critical to note that the actual act of mirroring is implied by countless Teotihuacan artworks. This is because the city’s icons only rarely occur in isolation. Much as the *adornos* of incense burners were mass productions that sculptors executed in multiples, and the image of a serpent emerging from a mirror did not appear once, but hundreds of times on the facade of the Pyramid of the Feathered Serpent, the majority of the iconographic elements discussed in this study were produced not once, but several times within a single compositional setting. Thus, it is never the case that a single deity/impersonator emerges from a mirror clutching a bloodied obsidian knife, but that several of these figures appear replicated across a wall. Images that lack this attribute of having been replicated many times are rare. The pervasiveness of the Teotihuacan cult of the mirror would suggest that this act of repeating a motif several times across an image space was likely intended, at least in part, to portray the act of mirroring. This was especially the case when mirrors were the subject matter of the artwork.

#### *Further dimensions of reflectivity in the Teotihuacan built environment*

Notable concentrations of additional shining materials occur in the Teotihuacan built environment. Relatedly, archaeologists and art historians have posited that hydroengineering techniques may have been utilized for purposes of producing a mirrored surface from water within the basin of the Ciudadela, inside of which is located the Pyramid of the Feathered Serpent. One striking manifestation of the Teotihuacan mirroring surfaces complex are *Los pisos de mica*, an aptly named architectural feature located near the city’s center that consist of two floors paved with imported mica that together cover an area of 29 m<sup>2</sup> (Instituto Nacional de Antropología e Historia 1959:25–28; Manzanilla et al. 2017). Mica and specular hematite became more broadly distributed throughout the city from around A.D. 300 onwards, through their application in powdered form atop the lime stucco wall and floor coatings of the 2,000–2,300 apartment compounds in which most Teotihuacan residents lived (Magaloni 2017:178–179). These surfaces were also oftentimes heavily polished, resulting in a pervasive reflectivity throughout Teotihuacan space. A related treatment was bestowed upon the walls near the end of the tunnel underneath the Pyramid of the Feathered Serpent, which were in places impregnated with shining iron ores.

On the floor of this tunnel’s terminus, investigators found a cluster of mounds surrounded by pools of liquid mercury, a reflective and nebulous substance (Gómez Chávez et al. 2016:7). An element, mercury/cinnabar (MgS) takes on distinct coloration depending on its occurrence in either a liquid or solid state. As solid cinnabar, it appears as a red powder, comparable in color to that of blood,

though when heated to more than 580°C, it transmutes to become liquid mercury, which gleams (Pendergast 1982). Its blood-red hue on the one hand, and brilliance on the other, may partially explain the central placement of this material in so marked a position. Teotihuacanos perhaps perceived in this medium a singularity of blood and reflectivity. Preliminary descriptions of the cave's terminal feature suggest that it evoked a mountainous landscape surrounded by lakes (Gómez Chávez et al. 2016). This composition may have suggested the central Mexican landscape as it appeared prior to the modern draining of the network of lakes that included Texcoco and Xochimilco.

Coggins suggested that the Ciudadela may have been intentionally flooded to generate a reflection pool in the summer months of the rainy season (Coggins 1996:25; Gazzola 2017:45–46; cf. Cowgill 2015:108). There is now stronger archaeological and observational data to support this hypothesis. Flooding continually occurs in and near the Ciudadela in the modern era, even absent the intentional application of hydroengineering techniques (Gazzola 2017:45–47; see also Martínez Vargas and Jarquín Pacheco 1982:42). The presence of three concrete floors beneath the Ciudadela (Drucker 1974), its placement atop a terminated irrigation network, and surviving waterlines on the walls of the cave beneath the Pyramid of the Feathered Serpent number among the archaeological lines of evidence that have led scholars to argue that the structure was flooded in ancient times (Gómez Chávez 2013:12, 2017). The managed flooding of monumental enclosures has been proposed to have occurred at other notable Mesoamerican sites, including El Tajin, Veracruz and Kaminaljuyu, Guatemala (Arroyo 2020:439–441; Koontz 2009:279). Thus, Teotihuacan's Ciudadela possibly participated in a more widely shared tradition. Gómez Chávez (2013:12) argued that inundation of the Ciudadela conjured a “water mirror,” while Taube called attention to a comment recorded by Sahagún (1950–1982:I, p. 21, quoted in Taube 1983:113) that reads, “the water spread like a mirror, gleaming, glittering,” testament that bodies of water were analogized to mirrors by the later Mexica Aztecs. The flooding of the Ciudadela may have served an astronomical function, in part, as its mirroring surface could have been employed in the observation of solar, Venusian, or astral movements occurring during the rainy season.

### Conclusions: The signification of force

This study has presented an iconological reading of the Teotihuacan cult of the mirror. Mirrors and mirroring substances were fundamental for Teotihuacan religious observations, manifesting in the city's iconic and archaeological records as signs, pyrite disks, obsidian, mercury/cinnabar, and throughout the built environment, including through hypothesized hydroengineering methods deployed at the Ciudadela, by the late second century. Though this cult manifested in all three of the city's largest structures, it was apparently most associated with the Pyramid of the Feathered Serpent, which was the locus of a historically large human sacrifice.

While much recent scholarship on the nature of the Teotihuacan iconic repertoire has relied primarily on later central Mexican or contemporaneous extra-cultural comparative datasets, this study has drawn into mutual consideration this city's iconic and archaeological records. In so doing, it has sought to identify not the narrative content of the Teotihuacan cult of the mirror, but an explanation as to why this cult and its iconic manifestations were expressed with such vigor at second-century Teotihuacan, before being iteratively rearticulated for centuries thereafter. This approach has permitted the identification of two previously unrecognized resonances of the Teotihuacan cult of the mirror. This cult was apparently strongly associated with obsidian and with obsidian's potential to draw blood. Though obsidian mirrors were not the most common sort of archaeological mirror produced at Teotihuacan, obsidian objects and this material's capacity to spill blood were key referents for this icon from the time of the building of the Pyramid of the Feathered Serpent. The Panofskian “something else” of the icon's synthesis and durability likely related to the capacity of obsidian exploitation to facilitate the city-state's imperial ambitions.

This new reading of the Teotihuacan cult of the mirror does not contradict the symbolic resonances of mirrors identified by other scholars of Mesoamerica. At times associated elsewhere with rulership, the sun, fire, water, and emergence, among other dimensions, these readings are remarkable in their diversity. Nonetheless, I would propose that these and other comprehensions of the Mesoamerican “mirroring surface complex” could be productively categorized as manifesting an ideology of “force.” At second-century Teotihuacan, the most salient dimension of this force was that of imperialist expansionism, which was materialized through the capture and execution of scores of human sacrificial victims, some number of whom likely came from beyond central Mexico. I have argued that as Teotihuacanos came into more frequent and enduring contact with the material of obsidian, they took note of and expounded upon the material's reflectivity and martial expediency when worked into weaponry.

This study has identified bloodletting with obsidian implements as one possible means through which Teotihuacan elites dispatched the human sacrifices of the Pyramid of the Feathered Serpent. From the time of this structure's completion, blood and mirrors, obsidian implements preeminent among the latter grouping, became paired in the Teotihuacan *cosmovisión*. Some portion of this imperial ideology was also articulated within later Teotihuacan domestic spaces, most notably apartment compound patios, where mural programs and ritual caches showing the conjunction of the mirror icon, obsidian weaponry, and blood spilling have appeared. These findings indicate that future investigations of the Teotihuacan lifeway should at times engage methods of hemoglobin detection. Further, additional consideration should be given to the importance of water procurement as a motive for Teotihuacan blood spilling, which I have noted in passing, but which is beyond the scope of this study.

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