

# “God’s Wonder”: Marble as Medium and the Natural Image in Mosques and Modernism

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*Comparisons have often been made between aesthetic shifts in the arts of late antiquity and the rise of abstraction in early twentieth-century Euro-American art. These include the use of marble in both late antique and modernist architecture to orchestrate patterned effects read as ornamental, or even figural. The analogy might be extended to some early and medieval mosques, in which the natural images seen in marble patterning authorized figural imagery within an otherwise aniconic environment. In both mosques and modernism, marble was embraced by architectural cultures that were ostensibly suspicious of ornament and imagery, if for quite different reasons. Rather than suggesting a fortuitous parallel, this essay argues for a common relation to the architecture of late antiquity: direct in the case of the mosque, indirect and highly mediated in the case of modernist monuments. This debt to earlier precedents qualifies standard antihistoricist representations of modernist architecture.*

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It is strange to think that nature, which can neither draw nor paint any likeness, sometimes creates the illusion of having done so, while art, which has always been successful at resemblance, renounces its traditional, almost inevitable and “natural” vocation and turns to the creation of such forms as nature itself abounds in—mute, unpremeditated, and without a model.

—Roger Caillois, *The Writing of Stones*

The incomparable patterning of the marble and the natural graining of the wood do not take the place of art, but they do participate in the art, in the space, which is here art.

—Fritz Tugendhat (d. 1958) on Mies van der Rohe’s Villa Tugendhat (1928–30)

## **I. Marble and Modernism**

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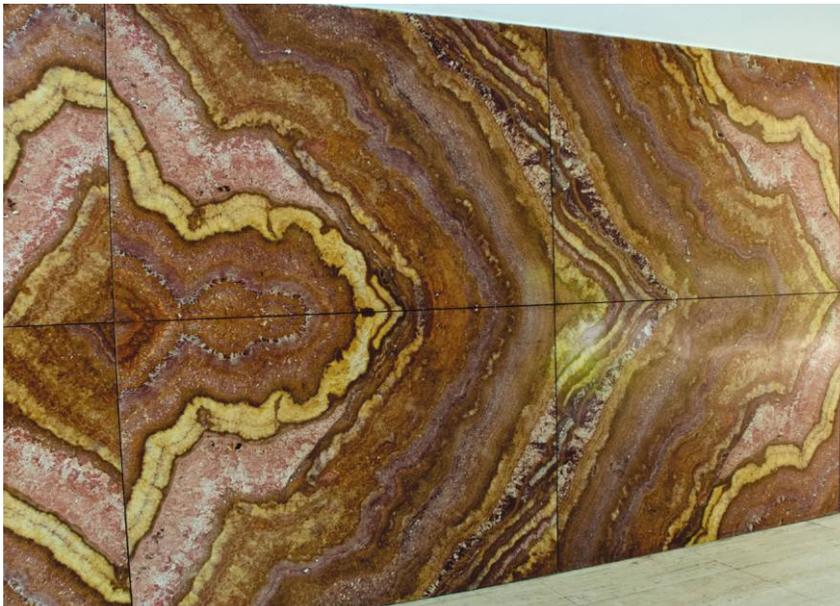
Comparisons between radical changes in aesthetic taste in the art of the Mediterranean world between the third and fifth centuries and those that occurred

in European (and later American) art in the early decades of the twentieth century are long established in art historical and art critical discourse. Both phenomena are often said to have entailed the abandonment of Classical canons and standards, a profound move away from naturalism toward forms of artistic production that demanded greater imaginative perception from the viewer, blurring the distinction between material and mental images. The aesthetic trends of late antiquity and their legacy to medieval European art have, as a result, often been depicted as formally homologous to, or even as prefiguring, a modern vogue for abstraction.<sup>1</sup>

By contrast, although comparisons have also been made between the rise of abstraction in Euro-American painting and aesthetic trends in modernist architecture, the latter is often seen to constitute a break with precedent.<sup>2</sup> Indeed, the very essence of modernist architecture is often assumed to be its self-reflexive novelty. As Ludwig Mies van der Rohe (1886–1969) wrote in 1924, “It is hopeless to try to use the forms of the past in our architecture. . . . It is not possible to move forward and look backwards; he who lives in the past cannot advance.”<sup>3</sup> The rejection of historicism in the representation of modernist monuments means that any comparison with the architecture of late antiquity must remain in the realm of analogy rather than relation.<sup>4</sup> And yet in recent decades the myth of modernist rupture has sustained consistent criticism. It has been suggested, for example, that the conceptual antecedents of Expressionist architecture in the decades before Mies was writing include Gothic cathedrals, Islamic palaces, and fantastical structures as described in Arabic, Latin, and vernacular legends and poems. The historicist roots of these early twentieth-century architectural experiments in Germany are closely allied to the enduring allure of specific kinds of transparent, translucent, reflective, and refractive materials, such as alabaster, glass, marble, and onyx.<sup>5</sup> Such materials are no less evident in the architecture of the *Neue Sachlichkeit* (New Objectivity) that forms the subject of this essay, even though its plainer aesthetic and streamlined forms were conceived in opposition to the more outlandish Expressionist fantasies.<sup>6</sup>

If skepticism has been expressed regarding claims for a modernist architecture that is *sui generis*, the role that ornament plays within the tradition has proved particularly susceptible to critical reevaluation.<sup>7</sup> On the one hand, the notional repudiation of ornament was a shibboleth of many pioneering modernist architects. On the other, claims to have abolished ornamental forms were already challenged by contemporaries, some of whom saw ornament as sublimated in the use of natural materials such as wood and stone rather than banished entirely.<sup>8</sup> More than two decades ago, James Trilling suggested that Adolf Loos (1870–1933), seen as one of the fiercest modernist critics of ornament, should instead be recognized as the progenitor of what he calls abstract or modernist ornament: “While Loos the critic was fulminating against ornament, Loos the architect was busy reinventing it. Using the natural variations of wood and stone, he gave the twentieth century a style of ornament without recognizable patterns or motifs, a style that it could pretend was no ornament at all.”<sup>9</sup>

More recently, Dario Gamboni has suggested that the use of marble veneers in the work of modernist architects enabled a “surreptitious form of ornament”



**Fig. 1 (top left)**  
Adolf Loos, Goldman  
and Salatsch Building  
(Looshaus), Vienna, 1911.  
Photo by F. B. Flood.

**Fig. 2 (right)**  
Goldman and Salatsch  
Building, detail of marble  
vener. Photo by F. B.  
Flood.

**Fig. 3 (bottom left)**  
Mies van der Rohe,  
German Pavilion for the  
Exposición Internacional  
of 1928-29, Barcelona,  
reconstruction. Photo by  
F. B. Flood.



**Fig. 4**  
 Mies van der Rohe,  
 Villa Tugendhat, Brno,  
 1928–30, interior. Photo  
 by F. B. Flood.

orchestrated by the natural patterns in the stone.<sup>10</sup> The iconic structures that he invoked, the Goldman and Salatsch Building on the Michaelerplatz, Vienna, built by Loos in 1909–11 and also known as the Looshaus,<sup>11</sup> and Mies van der Rohe’s (now reconstructed) German pavilion for the *Exposición Internacional* of 1928–29 in Barcelona, make use of book-matched veneers of Cipollino, Tinian marble, and Travertine, one as an element of exterior cladding, the other to define the restrained patterning and polychromy of the interior space (figs. 1–3). It has been suggested that the signature free-standing onyx wall of the Barcelona pavilion and its appearance in Brno in Mies van der Rohe’s Villa Tugendhat of 1930 (fig. 4) cannot be understood without the earlier work of Loos.<sup>12</sup> The work of both architects is also related by deeper, less readily apparent connections to the art of late antiquity and its early medieval legacy. In particular, their work owes a debt to a tradition of marble and faux-marble veneers that goes back to Roman times, but whose late antique and early medieval incarnations, expressed in a vogue for hard stone cladding and revetments, are especially germane.

Such a potential relationship was already intuited by Gamboni. Noting the parallels between the suggestive patterning of marble in modernist architecture and the “pictorial” qualities associated with the use of marble veneers in the architecture of late antiquity, Gamboni suggested that these parallels extended beyond formal analogy to encompass comparable moves away from naturalism and representation and toward the valorization of artistic forms that engaged the viewer’s imagination, a feature common to early twentieth-century

avant-garde painting. These formal analogies are, however, qualified by a crucial caveat: “[T]he suggestiveness of facing in modern architecture is neither theorized, described nor maybe consciously perceived.”<sup>13</sup> Analogies between the deployment of patterned marble veneers in late antique and modernist architecture thus appear once again as fortuitous, as forms of pseudomorphosis, to use a term now back in vogue in the discipline of art history with more positive valences than it formerly possessed.<sup>14</sup>

Building on Gamboni’s insight, I suggest an alternative reading of the analogies that he so astutely noted, one that argues not for serendipity but for genealogy, for a complex causal relationship between the architecture of late antiquity and European modernism that is discontinuous in its unfolding and disjunct in its temporality. As we shall see, the roads taken out of late antiquity were multiple, governed by a skein of historical relations that were generally convoluted and often characterized by contingency, marked by both direct and indirect legacies to modernity. What I suggest is that these roads led, on the one hand, directly from Byzantium to Aachen in the West or the Dome of the Rock and its successors in the East, and, on the other, via a more circuitous route, to the work of Adolf Loos and Mies van der Rohe.

In arguing the need to take a *longue durée* approach to the aesthetic and formal properties of marble in modernism, my intention is not simply to assert the genealogical claims of late antiquity, although this in itself would be rich and potentially productive terrain. I am equally interested in analogies between the formal treatment, conceptualization, and reception of marble veneers in late antique, medieval, and modernist architecture. These lie, in the first instance, in the production of ornamental, pictorial, and even representational effects by specific modes of cutting and arranging the marble medium. There is, however, a second order of comparison that, while less obvious, is perhaps more significant. This concerns the use of marble as a medium capable of producing ornamental and even quasi-representational effects while permitting a disavowal, displacement, or mitigation of agency. In what follows, I suggest that the secular icons of European modernism are related to the sacred architecture of Christianity and Islam not only by a common debt to the architecture of late antiquity but also by a common embrace of marble as a solution to problems posed by architectural cultures that were ostensibly suspicious of ornament and imagery, if for quite different reasons.

## **II. Late Antique Legacies**

The perception of mimetic or quasi-mimetic forms in clouds, stains, and other natural formations and materials has a long and well-documented history that is not confined to Europe.<sup>15</sup> Stones and rocks are particularly susceptible to such forms of seeing, whether in relation to their outlines or interior structures. In Byzantium, the medieval West, and the Islamic world, observers were particularly drawn to the qualities of marble, both its formal qualities of color, line, and nebulous stains, and the fact that these natural patterns could conjure or evoke images of animals, plants, kings, and saints. This enabled the identification of

representation in abstraction, reading the contingency of pattern and vein as mimetic drawings, sketches, and even paintings. So common was this phenomenon that, as late as 1765, Gottfried Wilhelm Leibniz invoked the figural images perceived in the veins of patterned marble as a metaphor to describe the human potential for ideation, something that he argued was not inherent in the mind but present as potentiality.<sup>16</sup>

The iconicity of stone in churches and mosques was not merely potential, but was regularly realized in and by the perceptions of visitors and worshippers. It was often deliberately emphasized, whether in the cutting and suggestive juxtaposition of marble veneers or the reproduction of marbles and stones in other media. Such artistic endeavors both produced and revealed ambiguous images. These were not only ontologically indeterminate but occupied a middle ground between found images and those produced by a human agent, even if the role of human agency in their realization was often marginalized in favor of nature or divine providence.

Typical in this respect is an account of the Ka'ba, the focal shrine of Islam in Mecca, written by the Andalusian traveler Ibn Jubayr, who reached the holy city in 1184. The inveterate traveler was among the privileged few visitors permitted a glimpse of the Ka'ba's interior. There he saw walls revetted with book-matched marble veneers, among them a white marble slab "on which Great and Glorious God had fashioned, at its first creation, remarkable figures or forms [*ashkāl*] inclining to blue, of trees and branches, and another beside it with the same design exactly, as if they were parts [of the same stone]; and if one were placed over the other each design would correspond to its opposite. There is no doubt that each slab is half of the other, and when the cut was made they divided to make these designs and each was placed beside its sister."<sup>17</sup>

Similar polychromatic marble veneers appear in Islamic architecture as early as the Umayyad period (661–750), when both the Dome of the Rock in Jerusalem (692) and the Friday Mosque of Damascus (715) were clad with quarter-sawn and book-matched marble veneers. Some of these survive, still covering the interior walls with characteristic wavelike or rhomboid patterns (fig. 5).<sup>18</sup> The ornamentation of the shrines in this way continues a tradition well documented in Byzantine architecture, continuities explained by the fact that Christian marble-workers were among those employed in ornamenting the early Islamic monuments of Syria.<sup>19</sup> Moreover, some of the marbles seen by Ibn Jubayr in the Ka'ba might even have originated in Byzantium, for in 684 marble and mosaics had been brought to embellish the Ka'ba from Sana'a, the capital of Yemen, where they had been taken from the destroyed cathedral of al-Qalis, for which we are told the Byzantine emperor had contributed marbles and mosaics a century earlier.<sup>20</sup>

Whether the marble seen by Ibn Jubayr in the Ka'ba in the twelfth century was literally of Byzantine origin, conceptually the use of marble veneers as architectural dados continues a tradition pioneered in Roman architecture and developed in the architecture of late antiquity. Just as significantly, Ibn Jubayr's

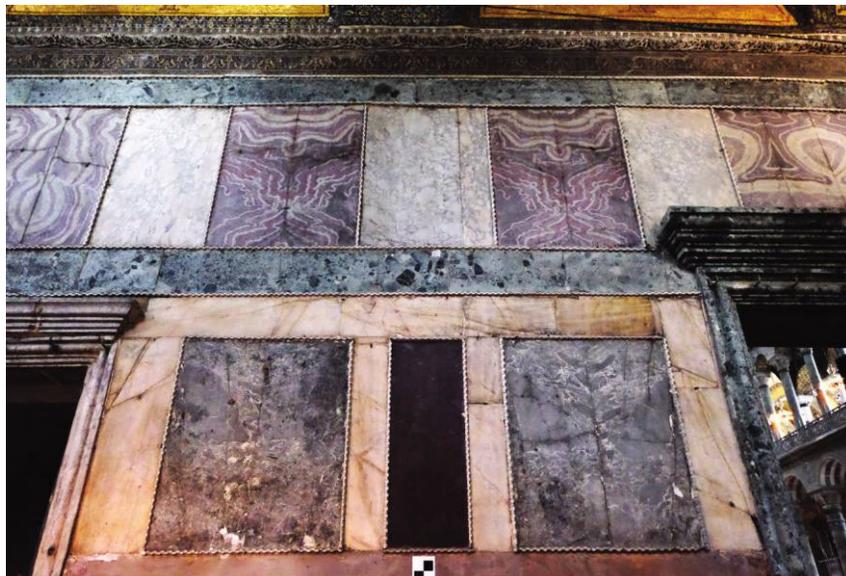


**Fig. 5**  
 Friday Mosque of  
 Damascus, 715, detail of  
 marble veneers, interior  
 of the eastern portico.  
 Manar al-Athar Photo  
 Archive, MAA21874\_099  
 \_IMG\_2172.

perception of marble as a pictorial, or even representational, medium is a common trope in descriptions of Roman, late antique, and Byzantine marble veneers. In these, the visual effects of marble are often described in terms of other natural media, often meadows of colored flowers or flowing water in the case of quarter-sawn panels of marble whose aqueous forms likely recalled beliefs that marble was formed of congealed water vapors. Such comparisons persist in medieval accounts of patterned marble veneers found in mosques and even early Islamic palaces, suggesting continuities in perception but also certain shifts in the terms of comparison.<sup>21</sup> A striking feature of Arabic descriptions of marble that is not prominent in earlier descriptions is the comparison between the variegated appearance of marbles and the visual properties of textiles.<sup>22</sup>

Even in late antiquity, however, the patterns perceived in marble veneers inspired more expansive and suggestive comparisons. The simile of marble as painting or as a quasi-painterly medium appears frequently; one of the earliest occurrences is in a description of the sixth-century church of St. Sergius at Gaza written by Choricus, who sees the marble veneers of its portico as having been “artfully joined in a uniform composition, and whose natural grain rivals the variety of painting.”<sup>23</sup> Similarly, in Paul the Silentiary’s celebrated ekphrasis written for the rededication of the Church of Hagia Sophia in Constantinople in 562 CE, the veins of its book-matched marble veneers are said to describe figures resembling drawings or paintings, their veins divided into units of four or eight to form an ornamental pattern (*kosmos*), a process underlined when marble veneers were displayed as pictures, often with narrow astragal frames

**Fig. 6 (top)**  
Church of Hagia Sophia,  
Istanbul, 562, view  
of marble paneling,  
narthex. Photo by  
F. B. Flood.



**Fig. 7 (bottom)**  
Church of Hagia Sophia,  
details of marble  
paneling, narthex. Photo  
by F. B. Flood.



(figs. 6, 7).<sup>24</sup> In both descriptions nature is said to emulate painting, inverting the traditional direction (if not the hierarchies) of mimetic art.

Such ekphrastic descriptions may have formalized viewing practices, but they are also likely to have shaped the expectations of viewers who stood before late antique or early medieval marbles and visualized their patterns according to both established conventions and more idiosyncratic or personalized criteria.<sup>25</sup> The reception of the marble veneers in the narthex and galleries of Hagia Sophia is especially suggestive, their ambiguous “figures” made more emphatic by later impromptu drilling to emphasize the anthropomorphic qualities of



**Fig. 8 (top)**  
Church of Hagia Sophia,  
details of marble  
paneling, narthex.  
Photo by F. B. Flood.



**Fig. 9 (bottom)**  
Church of Hagia  
Sophia, detail of marble  
paneling, north gallery,  
anthropomorphic forms  
with later "eyes" bored.  
Photo by F. B. Flood.



**Fig. 10 (left)**  
Kalenderhane Mosque,  
Istanbul, late 12th or  
early 13th century,  
marble veneers,  
northern wall. Photo by  
F. B. Flood.



**Fig. 11 (right)**  
Kalenderhane Mosque,  
detail of marble  
veneers. Photo by  
F. B. Flood.

the venous patterns (figs. 8, 9). The later drilling of such “eyes” represents an attempt to shape reception, attesting to the enduring perception of representational imagery in the marbles long after the church’s construction.<sup>26</sup> As late as the early fifteenth century, for example, the Castilian diplomat Ruy González de Clavijo noted images, including those of Christ and the Virgin, in a white marble slab of the church, images born of the veins that nature traced in the stone, which appeared “as if they were in the clouds of heaven, and as if there were a thin veil before them.”<sup>27</sup>

In Constantinople, the panels and veneers of Hagia Sophia inspired the use of marble as a primary ornamental medium in several later churches. In the late twelfth- or early thirteenth-century Church of St. Mary Diaconissa (today the Kalenderhane Mosque), for example, panels of at least eight distinct types of colored marbles were used not only as dadoes, but also to cover the upper parts of the walls (fig. 10). Although they once appeared alongside figural imagery, including icons, the crystalline polychromy of these aniconic marble panels dominated the interior of the space; like those in the narthex of Hagia Sophia that evidently inspired them, the Kalenderhane panels are framed by convex and dentillated frames (fig. 11).<sup>28</sup> The exploitation of the ambiguities associated with the marble medium reached its apogee in the Church of St. Savior (1081 CE) in the Chora neighborhood, whose extensive use of marble owes a clear debt to Hagia Sophia and the Kalenderhane. In Chora, the lower walls of the *naos* were covered with matched and mirrored panels of Proconnesian marble flanked by verde and rosso antico, Cipollino rosso, and even onyx, often carefully cut and arranged so as to form vegetative and even quasi-anthropomorphic patterns, probably as part of a fourteenth-century remodeling (figs. 12, 13).<sup>29</sup> Here, patterned marble occupies a central role, encircling the lower



**Fig. 12 (top)**  
Church of St. Savior,  
Chora / Kariye Cami,  
Istanbul, marble  
paneling on the  
northern wall of the  
*naos*. Photo by  
F. B. Flood.



**Fig. 13 (bottom)**  
Church of St. Savior,  
Chora / Kariye Cami,  
Istanbul, detail of marble  
paneling with  
anthropomorphic  
forms, *naos*. Photo by  
F. B. Flood.

walls of the most sacred part of the church and marginalizing the mosaics and sculptures that occupied the upper wall surfaces. Although both allusive and elusive, the suggestive anthropomorphism produced by the careful cutting and matching of marble panels is unlikely to be haphazard; at key points elsewhere in the church, frankly representational flowers and crosses were produced (or revealed) by a similar judicious cutting and juxtaposition (fig. 14), emulating an earlier tradition preserved in the marbles of Hagia Sophia.

This tradition of cutting and setting marble veneers to enhance their pictorial potential was exported to the provinces, appearing, for example, in the Church



**Fig. 14**  
Church of St. Saviour,  
book-matched  
marble forming  
a cross or flower  
form directly above  
the entrance of the  
*naos*. Photo by  
F. B. Flood.

of San Vitale in Ravenna (547), where book-matched gray-veined white Proconnesian marble was used in conjunction with Cipollino rosso, a white-veined red marble, to create spectacular visual effects (figs. 15a, 15b).<sup>30</sup> In its Mediterranean incarnations, the tradition culminated in the Byzantine-inspired Basilica of San Marco in Venice, whose interior walls preserve a veritable picture gallery of crystalline stone, the more celebrated glass mosaics of the basilica confined to the superstructure above (fig. 16). Once again, these stones were valued not only for their rarity or value but also for their aesthetic qualities, the ambiguous variegations of their fractures and veins in which medieval viewers saw anthropomorphic figures.<sup>31</sup> In his description of the San Marco marbles, Filarete (d. 1469) seems to acknowledge the genealogical link with late antique and Byzantine precedents, connecting their natural imagery with what he had heard existed in the marbles of Hagia Sophia; the association is perhaps not surprising, given the reuse in Venice of marbles and other hard stones looted from Constantinople by the Crusaders and Venetians in 1204.<sup>32</sup> As late as the seventeenth century, Vincenzo Scamozzi (d. 1616) remarked on the forms that appear in book-matched marble slabs (*tavole*), which included “marvelous portrait likenesses, and figures, and animals, and plants, and landscapes, and seas, as is the case in marbles of Hagia Sofia in Constantinople, and in many similar ones in Rome, in Ravenna, and here in Venice where one can see similar things, invented, however, by nature, without any human.”<sup>33</sup>

Marble was, in fact, the most pervasive and visible medium in the most significant churches of Constantinople and the eastern provinces, and the western monuments that they inspired. Yet, despite the extensive surface area occupied by marble and related stones in the *sancta sanctorum* of some of the greatest

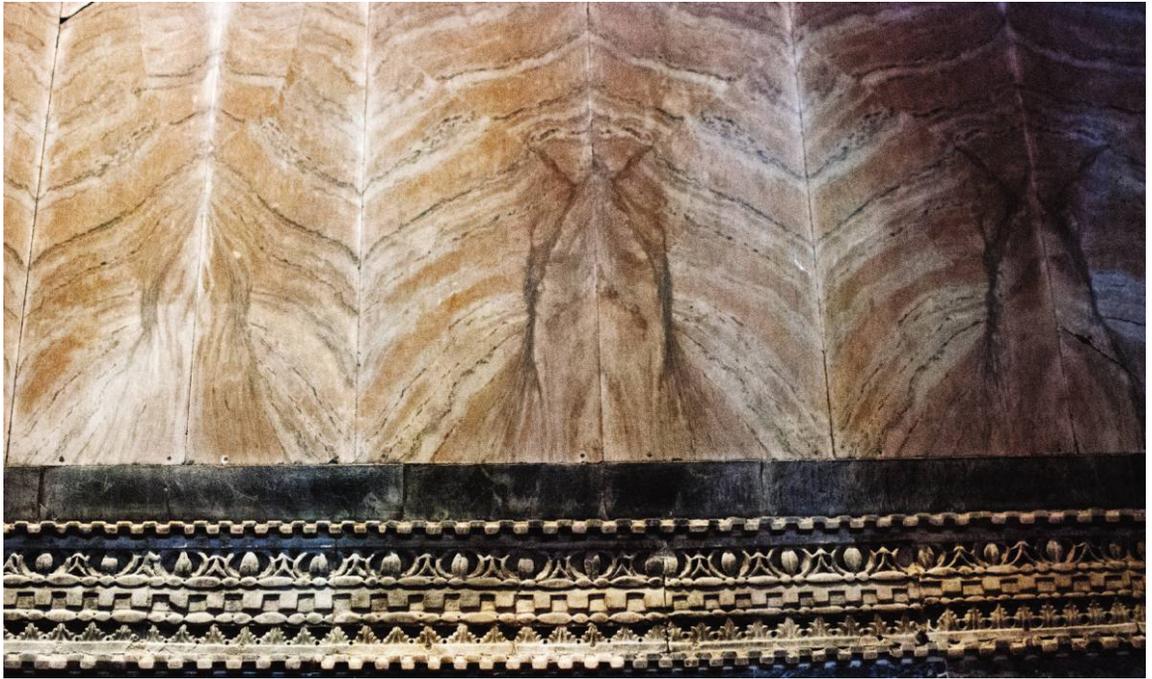


**Figs. 15a and 15b**  
Church of San Vitale,  
Ravenna, 547, detail  
of marble revetments  
of piers. Photos by  
F. B. Flood.



shrines of medieval Christendom and Islam, there has been remarkably little scholarly attention paid to the marbles that loomed so large to the medieval viewer. This is all the more apparent when considered against the vast amount of ink spilled on analysis of the mosaics that appear in the churches, mosques, and shrines just mentioned.<sup>34</sup>

With a few notable exceptions, the privilege afforded the explicitly or frankly representational, and the figural in particular, constitutes a failure of imagination, ignoring the fact that in a church like Hagia Sophia, figural mosaics were



**Fig. 16**  
 Basilica of San Marco,  
 Venice, 12th or 13th  
 century, marble  
 paneling with "hooded  
 figures." Photo by  
 F. B. Flood.

installed only in the ninth century or later. In addition to its marble revetments and veneers, patterned polychrome marble inlays on the floor of Hagia Sophia produced an aniconic manifestation of a watery sea, avoiding the need for the anthropomorphic personifications found on mosaic floors elsewhere.<sup>35</sup> It might therefore be said that such churches were characterized by largely aniconic regimes of ornament. Such a reading would, however, be at odds with the widespread perception of stone as an iconic or representational medium, even if its images were often attributed to nature rather than man. Despite this, modern scholarship has relegated marble to the role of supplement to more conventionally representational carvings or mosaics, which were often less extensive and less immediately accessible to the viewer. This relative neglect is all the more surprising because it not only constitutes an obvious quantitative imbalance in scholarship but also sidelines the frequency with which marble is singled out in late antique, medieval, and early modern accounts. More challenging still for the modern viewer is the fact that, as we have seen, these descriptions often treat marble as a pictorial or even representational medium, comparing or contrasting its natural imagery with the work of painters.

This was also the case in the medieval Islamic world, in which geographers and travelers often record contemporary perceptions of images in marble pillars and revetments. However, in contrast to the frank anthropomorphism that characterized the perception of such veneers and their veiny patterns in Christendom, the marble images witnessed by Ibn Jubayr in Mecca consisted only of trees. They thus conformed to the pious prescriptions of the hadith, the traditions of the Prophet Muhammad, which discouraged the depiction of animate beings in favor of trees and vegetation, things incapable of possessing breath or spirit, as

appropriate subjects of artistic expression.<sup>36</sup> While such prescriptions were often honored more in the breach than the observance, they held good for mosques, from which frankly figural art was generally occluded.

This was not the whole story, however. Despite a palpable reticence about the presence or perception of figural subjects within the Ka'ba, elsewhere in the Islamic world the strength of this anthropomorphic tradition persisted, even in the context of sacred architecture. Although they have never been systematically collected, references to figural imagery in architectural marbles are relatively common in the Islamic world, reported into the modern period.

Writing in 1118, for example, the Andalusian traveler Abu Hamid al-Garnati describes the form or image (*ṣūra*) of a human being resembling a monk, seen in the patterns of a marble column in the mosque of 'Amr in Fustat, Egypt, as “of God’s creation” (*min khalqat Allāh*).<sup>37</sup> Columns in which hooded figures appear are preserved in some late antique Mediterranean churches, providing potential insights into what medieval viewers saw in the mosque.<sup>38</sup> Perceptions of the forms seen in stone were often informed by contemporary or culturally specific concerns; the frequency with which sixteenth- and seventeenth-century Christian travelers saw figures of Turks in the marble veneers of Mediterranean churches is a case in point.<sup>39</sup> However, there are also transcultural and transhistorical constants to the perception of marble as a quasi-iconic medium, as in the case of columns in which images of monks manifested. These consistencies reflect the expectations and experience of viewers, but they are also rooted in the formal properties of stone itself. The monk seen in the Fustat marbles belongs, for example, to a much broader genre of monks, hermits, and other figures distinguished by their hooded robes. These were commonly identified in the late antique and medieval marbles of a variety of churches, including the Church of the Nativity in Bethlehem (fig. 17), San Vitale in Ravenna, San Giovanni in Pisa, and the Basilica of San Marco in Venice (fig. 16).<sup>40</sup> In his description of the latter marbles, Filarete (d. 1469) mentions a figure “that you would say had been painted” and that took “the form of a hermit with a beard and a hairshirt and with his hands joined together so he appears to be praying.”<sup>41</sup>

The consistency with which hooded figures were identified in the book-matched patterns of marble veneers in both the medieval Islamic world and Christendom presumably reflects the prevalence of vertical peaks or points, a product of the way in which veins form within the crystalline matrix. This aspect of marble was already noted in a discussion of the natural images found in stone by Albertus Magnus (d. 1280), who, once again, compares such images to painted pictures and gives an etiological explanation for the formation of these characteristic peaks:

I say, then, when I was at Venice as a young man, marble was being cut with saws to decorate the walls of a church. And it happened that when one [piece of] marble had been cut in two and the cut slabs were placed side by side, there appeared a most beautiful picture of a king’s head with a crown and a long beard. The picture did not seem to have any fault at all except one—the middle of the forehead seemed too high,

**Fig. 17**  
 Natural images found in marble and other stones, including a hooded figure identified as St. Jerome found on a marble slab in the Church of Nativity, Bethlehem (bottom left). Athanasius Kircher, *Mundus subterraneus in XII libros* (1678), 2: 39.



extending up towards the top of the head. And all of us who were there understood that this picture had been made in the stone by nature. And when I was asked the reason for the disproportion of the forehead, I said that the stone had been hardened from a vapour, and in the middle the vapour had risen up too far because the heat was greater there. This picture was of the same colour as the stone. There is something of the same sort in clouds when they are not disturbed by winds, and all sorts of figures appear in them and continually melt away because of the heat that raises them. But if these vapours were subjected to the influence of a place and a [mineralizing] power, they would fashion many figures in stones. This, therefore, is clear [evidence] that the shape of a simple picture is sometimes [made] by nature.<sup>42</sup>

The transcultural and transhistorical identification of hooded figures in marble suggests further continuities with the perception of marble in late antiquity, medieval Christendom, and the Islamic world, where marble veneers with suggestive veining remained in use in the mosques of Syria and Palestine well into the twelfth and thirteenth centuries.<sup>43</sup> Monks were not the only figures to be seen in such marbles, however. As late as the seventeenth and eighteenth centuries, the image of two facing doves traced by the natural lines in marble slabs decorated a mihrab (prayer-niche) at the southern entrance to the Dome of the Rock in Jerusalem, with contemporaries explaining that the images were formed by nature

or a divine miracle, and discovered (rather than created) by the mason who had cut the marble panels.<sup>44</sup> Similarly, in the sixteenth century, if not earlier, specific subjects were identified in the veins of three red marble columns in the Great Mosque of Cordoba (which by then had fallen into Christian hands), images said to have been impressed on the stone by the hand of God. One bore the name of the Prophet Muhammad; another, the image of the staff of Moses and the Seven Sleepers of the Cave; the third, an image of the crow sent by Noah in an unsuccessful quest for dry land before the flood had ended.<sup>45</sup>

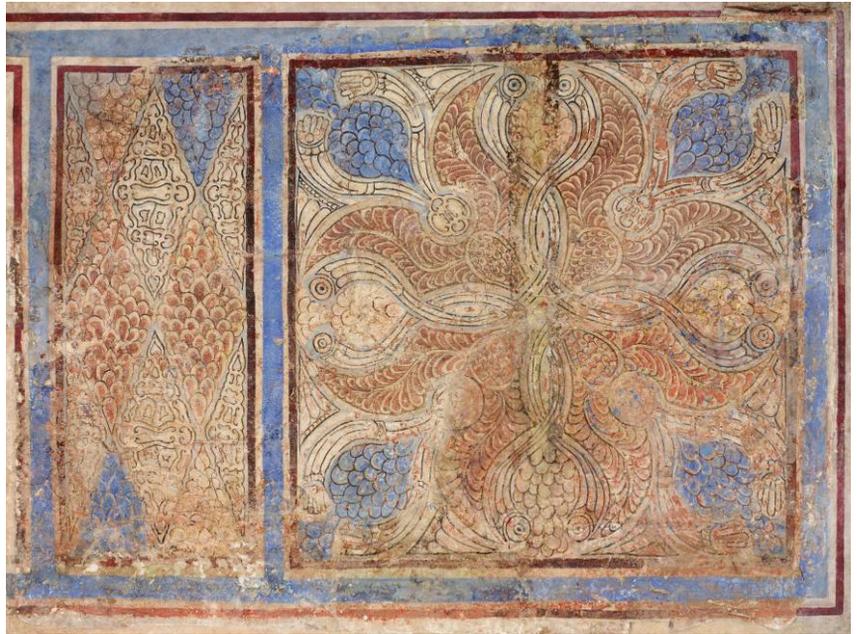
Like the report of Ibn Jubayr, these accounts consistently invoke the idea that the images perceived in marble were natural, either in the sense of being direct creations of God, or as forged by nature acting through divine dispensation; they thus anticipate a distinction between *natura naturata* and *natura naturans*, between nature as a creation of God and as a creative force in its own right.<sup>46</sup> Such ideas were not confined to the medieval Islamic world. In the passage above, Albertus Magnus reflects a common view that the images “found” in stone are the products of nature. Two centuries later, Alberti (d. 1472) famously noted that “Nature herself seems to delight in painting, for in the cut faces of marble she often paints centaurs and faces of bearded and curly headed kings. It is said, moreover, that in a gem from Pyrrhus all nine Muses, each with her symbol, are to be found clearly painted by nature.”<sup>47</sup> The echo of Classical antecedents here is unmistakable in a passage that reiterates a tale first told by Pliny, along with reports of an image of Silenus found within a block of Parian marble split with wedges by masons.<sup>48</sup>

In the case of figures found in the marbles of mosques, the displacement of agency onto the medium was crucial. In effect, it authorized the surprising presence of ornament read as representational and even figural in contexts from which anthropomorphic and zoomorphic imagery was normally discouraged or excluded; these included even the mihrabs that oriented worshippers toward the universal focus of prayer, the Ka’ba.

There are, however, a number of seldom-noted peculiarities associated with the deployment of the marble medium and its pictorial qualities in the early medieval Islamic world. One is a distinction between the use of marble veneers in the ornamentation of early Islamic mosques and shrines in Syria and an apparent preference for faux-marble painted veneers in profane contexts, especially Umayyad palaces.<sup>49</sup> This is conceivably due to a shortage of marbles, which were generally recycled; in the mosque of the Prophet in Medina as rebuilt in the seventh century, the lack of a local supply led to the use of stone pillars plastered and polished to resemble marble.<sup>50</sup> However, Syria is not the Hijaz, where marble was always in short supply. Moreover, plaster painted to resemble marble and polychrome opus sectile covered some of the Abbasid-era limestone columns in the Aqsa mosque in Jerusalem.<sup>51</sup> It is, therefore, just as likely that the representation of marble in other media was favored because it enabled the enhancement or exaggeration of its pictorial qualities, something considered especially appropriate to profane contexts.

In the late antique Mediterranean, painted imitations of marble dadoes sometimes made explicit the perceived presence of zoomorphic figures in the

**Fig. 18**  
Painted dado panel,  
Nishapur, Iran,  
9th–10th century.  
Metropolitan Museum  
of Art, New York,  
Rogers Fund, 1940,  
40.170.176.



crystalline veins of the depicted medium.<sup>52</sup> Similarly, in the Islamic world, the staging of pictorial and even representational qualities often found its most emphatic expression in the absence of the marble medium.<sup>53</sup> The phenomenon is typified by the painted dadoes in an Umayyad palace recently excavated at Balis in northern Syria, in which painted opus sectile borders frame marble discs and veneers replete with squirming fractures and veins, appearing almost as animated creatures teeming across the painted surface.<sup>54</sup> A series of ninth- or tenth-century painted dadoes from an administrative building or palace at Nishapur in northeastern Iran goes well beyond the ambiguous games with marble witnessed in the earlier eastern Mediterranean traditions to which they are related.<sup>55</sup> The dadoes consist of large square panels featuring wormlike bands, scales, and sprouting leaves, divided by vertically rising rhomboids emulating quarter-sawn marble (fig. 18). The central panels enhance the ambiguous quasi-representational forms of veined marble in order to imbue them with frankly anthropomorphic and zoomorphic qualities. The overall effect is of scaly or feathery vegetation, reptilian in its aspect, punctuated by symmetrical compositions of intertwining organic tendrils that terminate in hands, eyes, and beaklike protuberances to form a striking congeries of animal, vegetal, and mineral.<sup>56</sup> Further ambiguities arise from the depiction of what appear to be organic forms in worked plaster emulating carved stone veneers, petrified in paint.

The conjunction of depicted marble veins with eyes and hands, motifs with a recognized apotropaic function in other contexts, suggests that the painted dadoes from Nishapur (and conceivably from other early Islamic sites) were afforded an apotropaic or talismanic function. In certain contexts, the ontological ambiguities and visual indeterminacies exaggerated in painted faux-marble veneers might therefore be seen as staging mediality and materiality in the service of efficacy.

It is in fact likely that the ambiguous figures perceived in stone such as marble were frequently invested with apotropaic or talismanic values underwriting their exaggeration at the meta-level of representation in faux-marble veneers. Three of the natural images noted in the marbles of the Cordoba mosque—the prophet's name, the seven sleepers of Ephesus, and the rod of Moses—were, for example, each attributed apotropaic, magical, and talismanic properties in the medieval Islamic world and often appeared on amulets.<sup>57</sup> In this sense they appear as macro-instantiations of the natural images that appeared in miniature in the gems and semiprecious stones that circulated in the Classical and Islamic world and were highly valued, often for their talismanic properties.

The most striking aspect of the Nishapur paintings—their ambiguous oscillation between abstraction and representation—owes a clear debt to the ornament developed in Samarra, the capital of the Abbasid caliphate of Iraq between 850 and 900 CE, and then disseminated throughout the Islamic world. The stucco dadoes in the palaces of Samarra seem to substitute for the “pictorial” marbles that were favored in the Umayyad monuments of Syria but were not plentiful in Iraq (fig. 19). In the Dar al-Khilafa, the caliphal palace of Samarra, marbles were reserved for the most important areas, but they were supplemented by the contemporary production of glazed tiles that emulate porphyries and other hard stones used as veneers that were evidently in short supply (fig. 20).<sup>58</sup>

Contemporary poets describe the marble veneers used at Samarra in terms of streaming water, employing a simile long established in late antique ekphrasis, one that continued to be employed in later descriptions of marble veneers in the Islamic world.<sup>59</sup> In light of the perceptual ambiguities associated with marble cladding in the eastern Mediterranean, it is unsurprising that the relationship between figure and ground on the most “abstracted” of the stucco panels from Samarra (conventionally known as Style C) gives rise to ambiguous configurations of vegetal designs with anthropomorphic or zoomorphic qualities, often amplified by the provision of drill-holes resembling eyes (compare figs. 9 and 19). The same qualities are apparent in the Samarra-inspired stucco ornaments found in eastern Iran and central Asia, on which careful drilling produces the impression of birds and fish formed by the contours of abstracted vegetal ornament.<sup>60</sup>

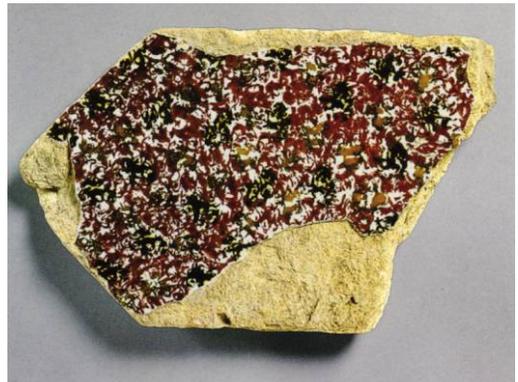
These have been aptly described as hovering on the borders between “intelligibility and unintelligibility, being and becoming, actuality and potentiality,” and attempts have been made to relate their ambiguous abstractions to contemporary aesthetic trends or developments in speculative theology.<sup>61</sup> However, whatever the specific cultural valences of these painted and stucco ornaments, their formal and genealogical relationships to the marble dadoes and veneers of the late antique and early Islamic Mediterranean is quite clear.

The Samarra materials suggest that in areas where marbles and veneers were not available, artisans and patrons improvised. As supplies of hard stones and marble veneers dwindled in later centuries, their appearance could be mimicked in ersatz marbles and porphyries produced in other media. Even in the former territories of Byzantium, under Ottoman rule from 1453, late antique



**Fig. 19**  
Plaster cast of stucco dado, Samarra, Iraq, second half of 9th century. Metropolitan Museum of Art, Purchase, Edward C. Moore Jr. Gift, 1927, Accession Number 27.229.1.

**Fig. 20**  
Fragment of a glazed luster tile imitating marble or porphyry, Samarra, Iraq, 9th century. Al-Sabah Collection, Kuwait, LNS 1057C.



marbles that had been reused in the fourteenth- and fifteenth-century Mamluk monuments of Cairo were themselves quarried to embellish the monuments of the Ottoman capital.<sup>62</sup> In addition, glazed tiles were produced to emulate marbles and porphyry, a stone that was no longer mined after late antiquity and was reused in ever diminishing quantities in the Ottoman lands and around the Mediterranean in general.<sup>63</sup>

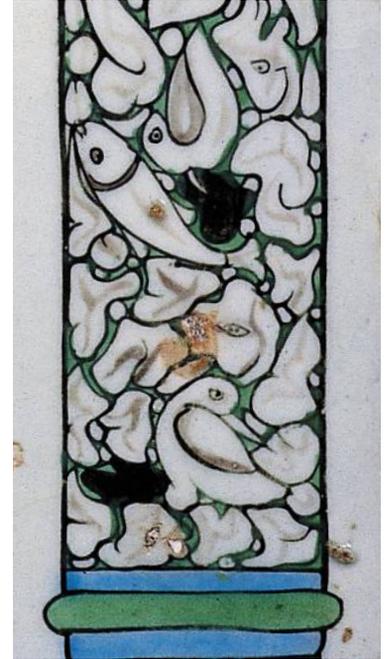
When mounted in specific configurations, such tiles replicated the effect of quarter-sawn and book-matched marble, emulating the aesthetic effects of Byzantine “pictorial” marble veneers (compare figs. 5 and 21). Once again, this permitted the representational potential of the stone medium to be enhanced in reproduction, with the “natural” lines of the marble sometimes exploited to smuggle frankly figural imagery into contexts from which it was normally omitted. A



**Fig. 21**  
Glazed tile panel  
imitating book-matched  
marble, façade of the  
tomb of Hürrem Sultan,  
wife of Suleiman the  
Magnificent, Istanbul,  
1558. Photo by F. B.  
Flood.

series of glazed tiles made in Damascus in the 1570s or 1580s, for example, includes images of small animals barely concealed in the cells and veins of ersatz marble columns and veneers. In the mosque of Darwish Pasha, built by the Ottoman governor of Damascus in 1574–75, the tile border above the mihrab is decorated with a series of ambiguous vegetal forms that include what appears to be a bovine head. The borders of two tile lunettes in the courtyard of the mosque contain more clearly legible birds, crabs, fish, and tortoises, aquatic creatures appropriate to the aqueous appearance of marble, along with zoomorphic forms of less determinate identity.<sup>64</sup> Related to this group is a spectacular tile mihrab that shows a mosque lamp hanging from an arch supported on two columns of ersatz marble in whose veins are concealed a vast array of small creatures, including ducks, fish, rabbits, and other quadrupeds (figs. 22a, 22b).<sup>65</sup> Their proximity to two stylized depictions of the sandals of the Prophet Muhammad, one of the most revered relics of the prophet, is particularly remarkable.

A provincial reflection of a contemporary metropolitan Ottoman vogue for ersatz tile-work marbles, the Damascene tiles take the ambiguous games of representation long associated with the preparation of marble veneers and their depiction much further than anything known from contemporary Istanbul. Moreover, unlike the narrow tile borders harboring zoomorphic forms hidden in the upper reaches of the Darwishiyya Mosque, more than a cursory glance at this tile mihrab would have revealed the creatures emerging from its ersatz marble columns, which faced the worshipper directly. In addition, the carefully delineated yet ontologically indeterminate figures in the depicted marble of the columns contrast with the solid black forms of the sandals. The allusive properties of marble are exaggerated in depiction to produce imagery that is frankly and fully figural; by contrast, the tangible reality of the relic is abstracted to two monochrome hieroglyphs that represent the least representational aspect of the tile panel.



**Fig. 22a (left)**  
 Tile panel with lamp, candles, and the sandals of the Prophet, Damascus, ca. 1570–80, 123 × 62 cm. Aga Khan Trust for Culture, Aga Khan Museum Collection 00585.

**Fig. 22b (right)**  
 Detail of column supporting the mihrab arch in fig. 22a.

### **III. Fractured or Found?**

What the Damascus tiles have in common with the marbles that authorized the presence of “figural” effects in mosques from Cordoba to Jerusalem is their engagement of the medium to exploit its representational potential. In the pictorialism of faux marble, the staging of the medium at a remove offers a de facto meta-commentary on representation itself, one that engages questions of authorship and ontology simultaneously. In doing so, the Damascus tiles throw into high relief a tension between *technē* and *physis*, art and nature, between finding, making, and revealing, the manifest and the manipulated, that is another transhistorical constant in the perception and representation of marble veneers.

What distinguishes the images seen in cut or split stone from those seen in clouds or stains or other organic matter is not only their static quality but the

fact that they are realized by the working and placing of the stone. Like images seen in other natural phenomena, they also depend on the imaginative perception of the viewer. As Roger Caillois, a passionate observer of natural phantasms manifest in certain stones, wrote about lithic imagery: “The vision the eye records is always impoverished and uncertain. Imagination fills it out with the treasures of memory and knowledge, with all that is put at its disposal by experience, culture, and history, not to mention what the imagination itself may if necessary invent or dream.”<sup>66</sup>

In the case of the natural images under discussion here, the stone medium is the matter or material of a mediation that assumes the necessity of viewer participation and perception. The phenomenon underlines a point made by Roland Betancourt in another context: “we must endeavor to think of “medium” as a term that indicates and articulates mediation as a condition of possibility for perceptibility, rather than a reduction of that system to mere material substrates.”<sup>67</sup> Like some premodern Rorschach test, the evanescent images traced by lithic veins varied according to the perceptions of the viewer, one reason why viewers of Byzantine marble veneers sometimes enhanced their anthropomorphic qualities post hoc by hollowing out “eyes” at appropriate spots, directing perception by fixing the forms suggested by marble veins (see fig. 9). Such impromptu practices prefigure the enhancement of pictorial stones in sixteenth- and seventeenth-century Europe by the addition of painted figures, exploiting a dialectical tension between the surface images of artists and those formed by nature, which penetrated the very depth and essence of the stone.<sup>68</sup>

The authorship implicit in the act of altering or exaggerating such “natural” images blurs a distinction made by James Elkins between what he calls cryptomorphs, images deliberately hidden by artists within their works, and aleamorphs, images that are not produced by human facture but depend on processes of perception related to their formal properties. In the first category we could include the faces hidden in the forms of rocks depicted in late medieval and early modern Persian painting;<sup>69</sup> in the second, the faces and forms perceived in the fractures and stains of marble. As Elkins puts it, “[A]leamorphs are neither painted nor sculpted. A pure aleamorph is *acheiropoietic*, an image not made by human hands. By contrast, a pure cryptograph is *made*, and then seen.”<sup>70</sup>

The idea of the self-made or unmade image is, in fact, explicitly invoked in a seventh-century Syriac ekphrasis on the cathedral of Edessa in northern Mesopotamia, which describes the patterns of its marble paneling as tracing images not made by human hands.<sup>71</sup> The description thus conjures the idea of the *acheiropoieton*, the image produced through divine instantiation rather than mortal fabrication. In antiquity, examples included the imprint of Christ’s face on cloth and other materials. The most celebrated example was housed in Edessa; the ekphrastic text thus established an implicit analogy between the divinely produced icon and the naturally occurring imagery perceived in the marble revetments of the city’s cathedral.<sup>72</sup> Tales of similar miraculous self-generating images that manifested in marble and stone are occasionally encountered in later Christian texts.<sup>73</sup>

Although lacking the imprimatur of a divinely produced icon, the notion of the self-made or unmade image clearly survived de facto in the Islamic world and in precisely the context documented by the Edessa hymn: the perception and description of marble veneers in sacred architecture. The idea of the agentless image has long served to mitigate or obviate the indictment of human artists and artistry. Examples range from the ritual (if symbolic) amputation of the hands of artisans who crafted Mesopotamian cult images (thus removing the stain of mortal facture from the body of the god), through Aaron's insistence that the golden calf "came out" of the fire into which he threw the golden ornaments of the Israelites (*Exodus* 32:24), to the acceptance of photographs as agentless images, uncreated reflections of living beings, by pious Muslim jurists who otherwise rejected images of animate beings produced by human hands.<sup>74</sup>

Photography is, perhaps, an especially apposite comparison, in light of its role in modernist experiments to distance the hand of the maker and sideline the agency of the artist-creator.<sup>75</sup> While both *acheiropoieta* and photographs are often identified as indexical images, images produced by contact or impression, it is, in fact, the photograph in its historical role as a natural or self-made image rather than the *acheiropoieton* produced by the direct operation of the divine that comes closest in its ontology to the images seen in stone.<sup>76</sup> In a fascinating (if implicit) acknowledgment of the ontological relations between icons, photographs, and the natural images found in stone, a 1989 design for a Greek Orthodox church by the Swiss architects Herzog de Meuron employs pentelic marble wall slabs that are both structure and image, building and icon: the slabs were to be etched with dots following the outline of photographic reproductions of ancient icons, to "create a drawing overlaying the preexisting natural drawing of the veined marble."<sup>77</sup>

In the Islamic world, the identification of figural imagery in and as natural wonders was relatively common. As early as the tenth century, an Arabic account of distant lands mentions the forms of men, birds, and fish appearing in the grain of rhinoceros horn.<sup>78</sup> The natural status of such wondrous images was not always sufficient to preclude anxieties, however. The *'Ajā'ib al-makhlūqāt*, a Persian book of wonders written around 1175 by Muhammad ibn Mahmud ibn Ahmad Tusi Salmani, includes a section titled "The Wonders of Carved and Painted Images" (*ʾajā'ib al-ṣuwar al-manqūra wa'l-manqūsha*), in which we read of a portrait of the Prophet Muhammad that manifested in an onyx stone discovered in a foreign land.<sup>79</sup> This location of the pictorial stone in an exotic locale recalls early modern beliefs that such stones were more common in southern and Oriental locales, whose warm climates and proximity to the stars (through whose operation some believed lithic images to be created) predisposed them to more and better examples.<sup>80</sup> Doubly displaced from the hand of a Muslim artist by its natural origin in a faraway place, this image of the prophet referred to in the *'Ajā'ib al-makhlūqāt* was evidently authorized by its natural status. Nevertheless, in a heavily illustrated copy of the text produced in Baghdad in 1388, this is one of the very few subjects left unillustrated. The tension between the natural status of the prophet's image and its inclusion in a section of carved and painted images evidently proved too much for either the artist or the patron of the manuscript.<sup>81</sup>

As this reticence suggests, while Elkins's distinction between aleamorphs and cryptomorphs is useful in highlighting questions of artistic agency, the notion of intentionality that underwrites it is notoriously slippery. In the phenomena considered here, the line between the two was so frequently blurred that they often appear related rather than opposed. The aleamorphic potential of marble was, for example, often exaggerated in depiction, in the creation of de facto cryptographs in media such as ceramic or painted faux marble (see figs. 22a, 22b; see also fig. 18). Such emulations of natural media function within the logic of mimetic representation, but in doing so they only underline the chronological priority and ontological primacy of the natural image. As we have seen, comparisons of natural images found in stone to the work of human artists are common from late antiquity into modernity. The existence of such images could also be used to rationalize or valorize painting, while natural images were often suggested as the origin of image-making in general.<sup>82</sup> As Alberti put it, "I think that the arts of those who wish to express and portray in their work a likeness, and the resemblances of subjects created by Nature, originated from this: that they by chance happened to see in some tree stumps, or in clay, or in various other materials, some features which could, with a little work, be transformed into something similar to faces made by Nature."<sup>83</sup>

Further undermining the distinction is the fact that, like the photograph that apparently writes itself in light, even the seemingly natural images of marble were necessarily realized by the work of human masons. As Jurgis Baltrušaitis puts it, "Sawn in half and opened out like a diptych or a book, slabs of marble and porphyry compose symmetrical arabesques. A rigorous order emerges from the disorder of nature's irregular motley."<sup>84</sup> The tensions arising from the realization of natural forms through the cutting and matching of marble is common to accounts of stone veneers in Byzantine and medieval Islamic monuments. Textual representations of marble further complicate the picture, for these both recorded and stimulated the imaginative perception of viewers who, in their turn, worked the surfaces of marble veneers in order to render their ambiguous anthropomorphism more emphatic (see fig. 9).

Unlike the medium of painting, the natural images and ornaments of marble are not surface creations but are bodied forth within the very essence of the stone, prime matter in which the full potentiality of imaging itself inheres. This is one reason why the inchoate crystalline forms of onyx and other patterned hard stones used in medieval Cosmati pavements could be used to evoke the primal matter of creation, the archetypal macrocosm.<sup>85</sup> Such usage provides a perfect illustration of the way in which the natural forms and very materiality of certain stones could manifest potential and plenitude, the possibility of all and every form. As Baltrušaitis writes, in the patterning of certain stones "we have geometry and abstraction decomposing and recomposing the shapes of life, forms pure in and of themselves."<sup>86</sup> The spectral apparitions described by medieval and early modern viewers were crystallized in the very fabric of a medium whose pale hues permeated by venous patterns and lithic viscera sometimes inspired analogies with the flesh and blood-filled veins of the human body, or metaphors that conjured the memory of divine creation.<sup>87</sup> Early in the fifteenth century, for example, Ruy González de Clavijo uses

the metaphor of animate birth to insist that the figural images perceived in the marble veneers of Hagia Sophia “were drawn very naturally, without any human artistry of sculpture or painting. . . . These images, as I have said before, are not drawn, or painted with any color, or inlaid; but the stone itself gave birth to this picture, with its veins, which may be clearly seen; and they say that when this stone was cut, to be placed in this most holy place, the workmen saw these most wonderful and fortunate images on it.”<sup>88</sup>

Like de Clavijo’s, most evaluations emphasized such images as creations of nature. Writing a few decades later, in a somewhat convoluted passage, Filarete explains the cause of an image of a hermit identified in the marble revetments of the Basilica of San Marco in Venice (see fig. 16), whose natural images he compares to those found in the marbles of Hagia Sophia: “I do not know how it was done, but nature created it. When those two tablets were sawed, this thing appeared as if it were an intarsia made by human hands. When paired together these two tablets showed this figure.”<sup>89</sup>

This paradox of natural images realized by human agency is visualized in an early printed version of Franciscus de Retza’s tract on the Virgin Birth (1470), a miracle of divine generation and self-representation which has an obvious relevance to the natural image. In de Retza’s text, the passage from Albertus Magnus cited above is marshaled as a defense of the wondrous things that exist in God’s creation. The accompanying image shows the heads of kings seen by Albertus in Venetian marble veneers being discovered by two stonemasons who saw apart a single stone block (fig. 23); unlike the thirteenth-century account, however, in place of one head formed when the patterned blocks were joined together, here a single head appears on either side of the newly split block, each a mirror image of the other.

Well into the modern period, attempts to draw the boundaries between art and nature frequently fell back upon a relative division of labor between God, nature, and human artisans in the production of wonder, including that associated with figured stones.<sup>90</sup> In the case of the marble revetments at issue here, despite frequent comparisons between the natural images of marble and the work of painters, God and nature generally won out over human artistry; although the representational potential of natural materials was fully realized only by facture, the hands of the mason were generally subordinated to the operation of nature or divine providence, even when noted in textual accounts, as we have seen.<sup>91</sup> Much as the photograph was conceived as the trace of an existing form whose writing in and by light was merely facilitated by the photographer, human intervention served to order, realize, and structure the natural images of the marble medium but could claim neither authorship or substantive agency in this process of realization.

Assertions of nature as the author of images presented as objective and self-subsisting entail a double marginalization of human agency. On the one hand, they minimize the role of the artisan or craftsman. On the other, they also diminish the role of imaginative participation in the realization of the image. A similar marginalization permeates medieval and early modern discussions of marble veneers in the Islamic world. In the account of Ibn Jubayr cited



**Fig. 23**  
 The discovery of  
 images of kings' heads  
 in a marble block  
 sawn by two masons,  
 after a description  
 by Albertus Magnus:  
 Franciscus de Retza,  
*Defensorium inviolatae  
 virginis Mariae*  
 (1470). Bayerische  
 Staatsbibliothek  
 München, Xylog. 34.

above, for example, the ultimate cause of the lithic images in the marbles of the Ka'ba is acknowledged as God's work, even if their immediate state reflects the labors of the masons who carefully cut and placed them. Equally, images of birds seen in the cut marbles of the Haram al-Sharif in Jerusalem by seventeenth- and eighteenth-century visitors were said to have been the work of nature or a divine miracle, discovered spontaneously by the mason who had cut the marble panels.<sup>92</sup>

To a certain extent, this is not simply the paradox of *physis* realized through *technē* but *technē* passing as *physis*, art passing as nature, a dissimulation that reveals itself in a tension between the found and the factured and, ultimately, in a dialectical push and pull between abstraction and representation. Like the drilling of eyes in ambiguous natural forms (see fig. 9), this tension reminds us that the illusion of marble lies not only in its seeming production of faces and figures but in its seeming production of *images* of both. It is this meta-level of the mimetic that provokes a wonder located in the play between found and factured, between the naturally occurring and the manmade, a play amplified and underlined in the creation of ersatz marbles (see figs. 18–22). In the space of the mosque in particular, the tendency to marginalize or occlude human agency permitted the production of certain kinds of figural imagery (or what contemporaries read as such) in contexts from which it was conventionally omitted. It is this ability of the marble medium to facilitate the orchestration and perception of pictorial or figural effects while permitting a simultaneous

disavowal or mitigation of artistic agency that is, I suggest, common to its use in the architecture of modernism.

#### **IV. Natural Ornament**

Let us return here at last to the two iconic modernist monuments mentioned at the outset—the Looshaus, or Goldman and Salatsch Building, and Mies van der Rohe's Barcelona Pavilion (see figs. 1–3). Both monuments may seem remote from the world of late antiquity, even a long late antiquity, but this is not in fact the case. Adolf Loos is, of course, (in)famous for his essay “Ornament and Crime,” published in German in 1908, one year before work began on the Looshaus.<sup>93</sup> The radical aesthetics of the building, with its severe, streamlined appearance and minimal exterior ornamentation, caused a sensation no less related to its situation opposite the Michaelertor, the neo-Baroque entrance to the Hofburg, the imperial palace. The juxtaposition was mocked by contemporary caricaturists, who depicted the façade of the Michaelertor transformed by the application of the marble veneers and distinctive windows of the Looshaus.<sup>94</sup>

The various marble veneers used in Loos's buildings are often carefully cut and matched to maximize their patterning. In the Michaelerplatz building, the exterior of the lower piers and the entablature that they bear are clad in a veneer of green Cipollino marble. On the horizontal entablature, the randomness of the patterning in the marble medium has been subordinated to the creation of ornamental or even quasi-pictorial effects orchestrated by careful sawing and matching to create symmetrical patterns articulated around the axis of the joints (see figs. 1, 2, 24).

Loos shares with Mies van der Rohe an interesting biographical detail likely related to his interest in the possibilities of stone cladding: his father was a stonemason, who worked in Brno (now in the Czech Republic), where Loos spent his early years and where Mies van der Rohe was to later construct his Villa Tugendhat.<sup>95</sup> The treatment of cladding in Loos's architecture and writing is indebted to the theories of Gottfried Semper (d. 1879), whose emphases on surface, cladding (*Bekleidung*), and the textile origins of architectural form have been detected in the variegated book-matched Cipollino panels that line the walls of the reception hall in Loos's Villa Müller (1930) like “swirling-patterned textiles.”<sup>96</sup> Such comparisons only heighten the tension between natural and manmade materials that underlines the appearance and use of marble veneers, a tension acknowledged by Semper, who contrasted a tendency in Greek architecture to obscure the structural function of walls with a Roman penchant for emphasizing the lines of stone and structure by carving and painting.<sup>97</sup> Loos explicitly invokes Semper's legacy in his demands for truth to materials, a shibboleth of modernist aesthetics. In *The Principles of Cladding* (1898), for example, the image of the Persian carpet and its imitation in tilework as wall-cladding is invoked in a plea for authenticity, a diatribe against such imitations since “[e]very material possesses its own language of forms, and none may lay claim for itself to the forms of another material.”<sup>98</sup> For Loos, lack of applied ornament is not only compensated for but even surpassed by the combination of quality materials and excellent workmanship.<sup>99</sup>

As this suggests, ornament, far from vanishing, remained integral to the work of Loos, where it was closely associated with the surface patterning and grainy configurations in such luxurious natural materials as ivory, marble, and exotic hardwoods. The visual properties of natural materials thus facilitated the presence of ornamental effects that do not announce themselves as such. The apparent contradiction between the well-known views of Loos on ornament and the patterned surfaces orchestrated in his buildings through the use of wood and marble veneers has often been noted. The tension is palpable in the exterior of the Goldman and Salatsch Building, where the plain white surfaces of the superstructure contrast with the darkly patterned marble that clads the more densely articulated lower section of the building. In Loos's Villa Müller in Prague (1930), the contrast between the clean planes of the whitewashed exterior and the richly patterned, quasi-sculptural effects orchestrated by the interior deployment of stone and wood is comparable, but it depends on a dialectical opposition between the aesthetics of exterior and interior.<sup>100</sup> The façade of the earlier Looshaus witnesses an unusual exteriorization of the cut and matched marble veneers generally found in the interior spaces of Loos's buildings, an exception that may have been intended to signal a relation between cladding and clothing, given the building's function as a tailor's firm.<sup>101</sup>

The expanding cloudlike patterns formed by the cutting and placing of the stone panels on the exterior of the Looshaus have been compared to the well-known symmetrical blots of the Rorschach test (fig. 24; see fig. 2). A means of psychological evaluation that exploited the long-acknowledged tendency to perceive legible forms in chance configurations, this test was being developed even as Loos was designing his buildings. In a telling development, the apparently random nature of the façade's patterning was noted and commented on by contemporaries; a cartoon published in Vienna in 1911 shows Loos gaining inspiration for the design of the façade by staring down at the gridding of a manhole and the erratic patterns of a cobbled street.<sup>102</sup>

In several cases, and especially on the western side of the building, these patterns assume strongly anthropomorphic qualities, resembling the lower portions of human faces, reminiscent of those more strongly suggested by the matching of marble panels in the Byzantine monuments of Constantinople/Istanbul (compare figs. 8 and 24). The evidence of Loos's awareness of late antique and Byzantine marbles is circumstantial, but there is a direct relationship between the emergence of scholarship on Byzantium typified by the work of scholars such as the Viennese Alois Riegl (1858–1905), the positive valences that Byzantine art was acquiring as an art of continuity (rather than rupture) with Rome, and the appearance of Byzantinizing elements in fin-de-siècle Viennese architecture. As has frequently been observed, this was permeated by a "modern Byzantism" manifest not only in the use of specific forms of ornament rejected by Loos but also by a penchant for particular materials and media, including marbles, onyx, and other translucent stones that figure prominently in his work.<sup>103</sup>

It may, therefore, be worth noting that in 1908, just the year before work on the Looshaus began, E. M. Antoniades's illustrated three-volume study of Hagia

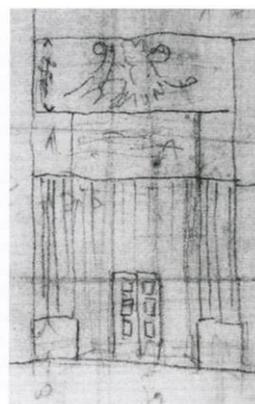
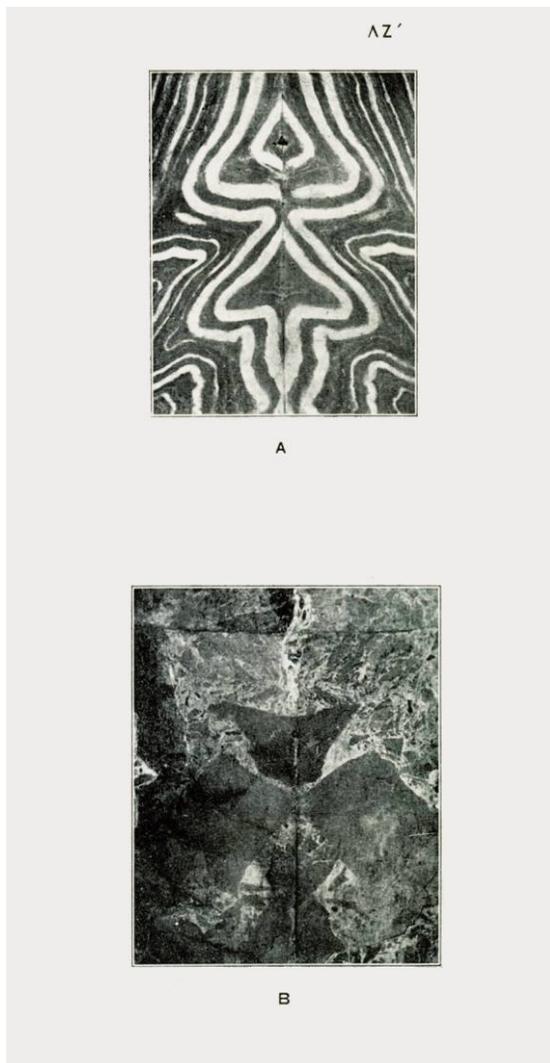


**Fig. 24**  
 Adolf Loos, Goldman  
 and Salatsch  
 Building (Looshaus),  
 Vienna, 1911, detail  
 of marble veneers.  
 Photo by F. B. Flood.

Sophia and its ornaments, including dramatic plates of its marbles, was published in Athens and Leipzig (fig. 25).<sup>104</sup> More significantly, in a recent study of Loos and his architecture, Joseph Masheck has drawn attention to the striking formal similarities between drawings for the façade of the Anglo-Austrian Bank that Loos built in Vienna in 1914 and some of the marble paneling and intarsia in Hagia Sophia (fig. 26), even if he is a little equivocal on their significance, concluding only that the “point is not so much a plausible borrowing from Hagia Sophia as that the work of this artist who threatened to frighten the horses by ranting about how perhaps his art wasn’t really art, or might be better not being so, proves involved after all with the history of the architectural art.”<sup>105</sup>

In “Ornament and Crime” (1908), Loos wrote that “modern ornament has no parents and no offspring, no past and no future.”<sup>106</sup> This is not, however, a manifesto for a dehistoricized modernism. Nor is it a call for an “ornament without motifs, artifice, or history,” as some have claimed.<sup>107</sup> Rather, it is a critique of the deracinated and disposable modes of ornament being produced and consumed by his contemporaries. It is tempting to see in this one sentence a key not simply to Loos’s embrace of “natural” ornament (that intrinsic to media such as stone and wood) but also to the deep, if seldom acknowledged, historicity that characterizes his use of such materials.

Loos’s commissions straddle the cultural and historical ruptures occasioned by the First World War (1914–18). It was as an emblem of the new European order that emerged from the ruins of the war that Mies van der Rohe’s Barcelona Pavilion was commissioned. And yet, despite the role assumed by the Barcelona Pavilion as both symbol of the post-imperial Weimar Republic (1919–33) and modernist icon, it was indebted to imperial projects of the prewar period and their engagements with key late antique and early medieval monuments.



**Fig. 25 (left)**  
Church of Hagia Sophia, marble veneers, as published in E. M. Antoniades, *Ekphrasis tes Hagias Sophias* (Athens and Leipzig, 1907–9).

**Fig. 26 (above)**  
Comparison between the marble paneling and intarsia of Hagia Sophia, 562, and Adolf Loos's study for the Anglo-Austrian Bank II. Courtesy of Joseph Masheck, *Adolf Loos: The Art of Architecture* (London: I. B. Tauris, 2013).

The use of Cipollino, onyx, Tinian marble, and Travertine in the Barcelona Pavilion reflects the prominent role assumed by patterned marbles in a series of Mies van der Rohe's projects clustered around 1928–30, including the Barcelona Pavilion, the Villa Tugendhat in Brno, and an unrealized design for the refurbishment of the Neue Wache (New Guardhouse), originally designed by Karl Friedrich Schinkel (d. 1841), as a memorial to the German dead of World War I on the Unter den Linden in Berlin. A drawing made in the same year that the Villa Tugendhat was completed shows the walls of the proposed memorial lined with matched slabs of Tinian marble similar to that used in the Barcelona Pavilion, the fractures, joints, and veins of the stone clearly visible as the primary mode of ornament. As Robin Schuldenfrei writes of this penchant for marbles, onyx, and other natural materials, "Mies utilized these materials with an intensified focus to deploy ornamental luxury within the strictures of the new visual and theoretical paradigm of modernism."<sup>108</sup>



**Fig. 27**  
 Mies van der Rohe,  
 German Pavilion  
 for the Exposición  
 Internacional of  
 1928–29, Barcelona,  
 reconstruction, detail  
 of Tinian marble  
 veneers. Photo by  
 F. B. Flood.

It has been noted that the verde antico marbles in the Barcelona Pavilion and the carefully worked slabs of veined green Tinian marble (fig. 27) “blended visually with the surrounding cypresses and conifers, appearing to be the architectural crystallization of their organic forms.”<sup>109</sup> Fortuitously or not, the resonance brings to mind a tradition of ekphrasis stretching from Classical antiquity to the medieval Islamic world in which the patterned surfaces of marble veneers appear as gardens, meadows, and trees. This relation to landscape has prompted comparison between the setting and material qualities of the Barcelona Pavilion and those of eighteenth-century grottoes.<sup>110</sup> The comparison may not seem obvious, but when one considers that the walls of such grottoes (and the structures that they inspired) were often encrusted with semiprecious stones and minerals (figs. 28a, 28b), the analogy may bear further scrutiny. In the case of Mies’s architecture, however, the rich and rough textures of such grottoes are replaced by the unified surface of highly polished slabs whose inclusions and encrustations are integral to the very constitution of stone rather than surface applications.

It has been observed that the use of polished marble veneers and even the signature free-standing onyx wall in the Barcelona Pavilion (see fig. 3) and Villa Tugendhat (see fig. 4) owe a debt to Loos’s championing of marble cladding.<sup>111</sup> Despite the fact that the onyx wall in the Barcelona Pavilion is free-standing, it is not formed of a single block but consists of a steel skeleton hung with cut and matched slabs three centimeters thick.<sup>112</sup> The onyx wall thus has more in common with the marble cladding of the pavilion’s walls than at first appears. In the Villa Tugendhat, the numinous crystalline clouds of the polished onyx wall (fig. 29), sourced from the same supplier as the onyx in Barcelona, find their counterpart in the deep grainy patterns stained in the Macassar ebony screen



**Fig. 28a (left)**  
Friedrich II's  
Grottenaal, Neues  
Palais, Potsdam,  
1769, walls with  
encrusted stones,  
including agates  
and onyxes. Photo  
by F. B. Flood.

**Fig. 28b (right)**  
Detail of figure 28a.

of the adjacent dining area. The self-made forms emphasized through the cutting and placing of the onyx slabs have been compared to sixteenth-century Italian paintings on alabaster.<sup>113</sup> Oscillating between the ornamental and the structural, and always verging on the pictorial, the polished patterns of the stone appear self-generating. As Robin Schuldenfrei notes: "In Mies's work this surface materiality, like that of Adolf Loos before him, nonetheless calls to be read as ornament—deployed in various registers of luminosity and reflectivity, via contrasting textures, and in the use of rare, luxurious materials. At the same time, part of this ornament's essential character is that its forms can be read simultaneously as structure as well as ornament."<sup>114</sup>

According to Mies van der Rohe, the slab of onyx doré used for the famous wall in the Barcelona Pavilion was found by chance in a depot, where it had been earmarked for transformation into onyx vases destined for a luxury liner.<sup>115</sup> In Mies's own telling, the centerpiece of his iconic building was, therefore, an *objet trouvé* in a double sense: natural material hewn from the Atlas Mountains that was purportedly found at a fortuitous moment in the project. Liberated from its role as revetment, the onyx wall became an iconic feature in its own right; Mies insisted that the onyx determined the vertical proportions of the pavilion, further underscoring the element of chance that permeated the building, at least in his telling.<sup>116</sup>

In his well-known 1966 pamphlet on chance imagery, George Brecht acknowledges the analogy between the role afforded chance in modern artistic practice and in earlier traditions; he suggests that "we have incentive to look for



**Fig. 29**  
Mies van der Rohe,  
Villa Tugendhat, Brno,  
1928–30, detail of  
onyx wall. Photo by  
F. B. Flood.

the trends in contemporary art which are consistent with analogous trends” in earlier eras of art-making.<sup>117</sup> Yet the element of chance and subjectivity that permeates Mies van der Rohe’s account of the ephemeral pavilion functions to obscure any historicist associations, whether genealogical connections or serendipitous analogies. This is perhaps not surprising since, as we saw above, in 1924, four years before the completion of the Barcelona Pavilion, Mies wrote that “[i]t is hopeless to try to use the forms of the past in our architecture.”<sup>118</sup>

And yet, despite such antihistoricism, and for all its much-vaunted radicalism, as many have noted, this is a building resonant with the ghosts of the past. Echoes not only of the classicism of Karl Friedrich Schinkel, but also of medieval and Byzantine buildings have been detected in its form and materials; it has even been suggested that the plan and onyx wall make reference to Romanesque churches and their altars.<sup>119</sup> In addition, the Byzantine resonances of the marble and onyx veneers in the Barcelona Pavilion have drawn occasional comment from observers, who have compared the building to Hagia Sophia.<sup>120</sup> These affinities are neither fortuitous nor indicative of a direct causal relationship. Instead, they can be seen as mediated both by a modern interest in the architecture of Byzantium and by Carolingian revivals of late antique forms restored in modernity under the impact of what Robert Nelson calls “Byzantium’s Italian surrogates.”<sup>121</sup>

In his biography of Mies van der Rohe, Franz Schulze noted the importance of the architect’s early life in Aachen, where his family had been “stonemasons

for generations,” with a particular involvement in marble working. Celebrated as the hub of the fabled Holy Roman Empire of Charlemagne (d. 814), the city preserved a permanent monumental relic in the form of the Palatine Chapel of the Carolingian emperors (dedicated in 805), with its antique marble columns (fig. 30).<sup>122</sup> Both of these factors are relevant to Mies’s Aachen years, for his father was (like that of Loos) a mason and stone-carver involved in the installation of modern Cipollino marble cladding in the cathedral during a restoration undertaken in 1902, when Mies (who sometimes helped out in the family’s marble atelier) was sixteen years old. Noting that the slabs of landscape marble in Aachen seem to anticipate the conjoined slabs of verde antico and onyx wall of the Barcelona Pavilion and the appearance of the same feature in the Villa Tugendhat in Brno, Jean-Louis Cohen writes: “The Swiss Cipollino marble cladding, which was in fact conceived by the Hanover architect Hermann Schaper for the visit of the Kaiser in 1902, sparked a revolt among German architects and historians against a regrettable ‘disfiguration.’ It is a safe bet that the job was assigned to Michael Mies and, even if he did not do the work himself, it is certain that the matter would have been discussed during meals at the family house.”<sup>123</sup>

These biographical connections to Aachen suggest that the onyx wall and marble veneers of the Barcelona Pavilion and the slightly later Villa Tugendhat are not serendipitous solutions to the problem of ornament developed without any consciousness of late antique or medieval antecedents. However, any relationship to late antique and early medieval precedents was heavily mediated and complex in its temporality. The installation of Cipollino dados (1902–13) in the Aachen cathedral and mosaics on the vault above (1881–82, 1901–2, 1907–13) was not a restoration in any conventional sense, for at the time that these works were undertaken, any original Carolingian marbles and mosaics had long since vanished.<sup>124</sup>

A painting of the interior of the Aachen cathedral executed by Hendrick van Steenwyck the Elder around 1575 shows plain wall surfaces and unadorned vaults, radically different in appearance from what confronts a modern visitor (fig. 31). Although Pope Pius IX (r. 1846–78) had funded the installation of some marble revetments in Aachen in 1869,<sup>125</sup> the marble revetments currently in place (fig. 32) are largely a product of the work undertaken between 1902 and 1913 under the direction of the architect and designer Hermann Schaper (1853–1911).<sup>126</sup> As Cohen notes, the radical transformation in the interior appearance of the cathedral that the installation of marbles and mosaics occasioned generated a controversy sufficiently heated that in 1904, two years after the work began, the celebrated art historian Josef Strzygowski penned a tract titled *The Aachen Cathedral and Its Defacement*.<sup>127</sup> This raging controversy could only have heightened the visibility of the marble paneling, which attracted particular opprobrium.

The rationale for installing Cipollino wall paneling lay in the assumption that it was appropriate, based on the survival of similar modes of ornament in late antique and Byzantine monuments. A photograph taken in 1903, before the modern work began, shows bare walls and what appear to be the remains of

**Fig. 30**  
Palatine Chapel  
of Charlemagne,  
Aachen, current  
state. Photo by  
F. B. Flood.



**Fig. 31**  
Hendrick van  
Steenwyck the Elder,  
*Interior of Aachen  
Cathedral*, 1575, oil  
on panel, 50.8 × 69.5  
cm. Museum of Art,  
Rhode Island School  
of Design, Gift of  
Drs. Arnold-Peter C.  
and Yvonne S. Weiss,  
200.25.



marble revetments surviving only at the very base of the piers.<sup>128</sup> The provision of such ornaments was entirely in keeping with the late antique forms and materials favored during the Carolingian revival. Moreover, there is even some evidence that Charlemagne's contemporaries saw ambiguous forms of faces and heads appearing within the natural patterns and veins of marble, suggesting continuities with late antique practices of seeing and viewing stone.<sup>129</sup> Writing in 1904, one commentator explained that the installation of colored marbles in



**Fig. 32**  
 Palatine Chapel  
 of Charlemagne,  
 Aachen, detail of  
 marble paneling  
 installed between  
 1902 and 1913.  
 Photo by F. B. Flood.

Aachen created a painterly effect (“eine malerische Wirkung”) in keeping with the intention of the original Carolingian master who decorated the church.<sup>130</sup> The invocation of painting in relation to marble paneling is an old trope, as we have seen, but in turn-of-the-century Germany, the comparison may also locate controversies about the marbles within larger debates about the relationship between ornament and the painterly (*malerisch*) or sculptural (*plastisch*) qualities of architecture.<sup>131</sup>

Since it was assumed that the Aachen chapel was originally revetted with marble, a likely source of inspiration for the restorers was the marble revetment of the churches of Ravenna, whose Basilica of San Vitale (528–547) was often cited as the inspiration for Charlemagne’s chapel.<sup>132</sup> As early as the sixth century, Theodoric, the Ostrogothic king who ruled from Ravenna, had sent to Rome requesting marble-workers capable of cutting and joining veined marbles so that their patterns might counterfeit the appearance of nature, art thus conquering nature by fashioning a variety of pictures from the natural forms of the stone.<sup>133</sup> Here the common trope of the natural image was inverted, highlighting a tension between *physis* and *technē* that, as we have seen, is common to many such descriptions of lithic imagery. Some sense of how these marbles might have appeared can be gleaned from the piers supporting the dome and walls at San Vitale. These follow contemporary Byzantine fashions, covered with quarter-sawn and book-matched venous polychromatic marble veneers carefully prepared to impose a certain order on their natural patterns by principles of mirroring or symmetry (see figs. 15a, 15b), a feature common to the marble ornament of the narthex of Hagia Sophia (see figs. 6–8).<sup>134</sup> The phenomenon is

no less apparent later in the treatment of the medium in the Barcelona Pavilion, where the allusive patterning of fractures and veins highlighted by careful cutting, matching, and polishing manifests a petrified indeterminacy, tantalizing with a perpetually deferred promise of resolution (see fig. 27).

It was from Ravenna and Rome that the original marble columns and revetments used by Charlemagne to build his Palatine Chapel at Aachen were reportedly brought.<sup>135</sup> Some of these were culled from monuments associated with Theodoric, who had been raised in Constantinople and laid claim to the traditions of Rome. The genealogical connections established by such appropriations were underlined by the relocation of a bronze equestrian statue of Theodoric from Ravenna, reinstalled between the palace and chapel in Aachen; the relationship between the two seems to have been inspired by the topography of Constantinople, compounding diachronic allusions to the first and second Rome.<sup>136</sup>

The marble paneling of the church of San Vitale in Ravenna was undergoing restoration in 1903, just as mosaics and marbles were being installed in Aachen. Moreover, Ravenna was central to the remodeling of Aachen's Palatine Chapel, as it had been to the original construction of the chapel under Charlemagne. Many of those involved in the Aachen restorations had earlier worked on the Gedächtniskirche in Berlin, the church dedicated in 1895 by Kaiser Wilhelm II (r. 1888–1918) to commemorate his grandfather. Just as Theodoric had mediated the cultural traditions of Rome and Byzantium, bringing materials from both to adorn his capital at Ravenna, and just as Charlemagne had laid claim to these concatenated legacies through the appropriation of materials from Theodoric's Ravenna, so Wilhelm II reiterated these mediations in the ornamentation of his Berlin project, whose mosaics drew directly on the iconography of the Ravenna mosaics, combined with Ottonian prototypes.<sup>137</sup> The relationship was materialized in the public display of an original mosaic apse taken from the church of San Michele in Africisco in Ravenna (545 CE) at the Kaiser-Friedrich Museum in Berlin in 1904.<sup>138</sup> Underlining the links between Aachen, Berlin, and Ravenna, the restoration of the mosaic was undertaken by the Berlin-based firm of Puhl and Wagner, which was responsible for the Ravennate mosaics in the Gedächtniskirche and went on to execute the Aachen mosaics between 1903 and 1907.<sup>139</sup> The same trajectory was followed by Hermann Schaper, who oversaw the marble and mosaic work in Aachen after being employed on the Gedächtniskirche project in 1902 and who later worked with its architect, Franz Schwechten (1841–1921), on the construction of the Erlöserkirche in Bad Homburg (1908–11), a church whose interior was richly decorated with neo-Byzantine mosaics and marble revetments said to have been inspired by Hagia Sophia.<sup>140</sup>

The installation of the marbles and mosaics at Aachen between 1902 and 1913 thus branded the interior space of Charlemagne's chapel with an antique template that was multiply mediated. Carolingian only in an ersatz sense, the modern Cipollino paneling that now defines the interior space was intended to substitute for lost Carolingian originals assumed to have been inspired by the Byzantinizing architecture of Ravenna, now refracted through the lens of Wilhelm II's imperial projects in Berlin. Unlike the Viennese artist Gustav

Klimt (1862–1918), whose firsthand experience of the Ravenna marbles in 1903 permeated some of his later work,<sup>141</sup> Mies's experience of late antique marbles in Aachen was largely indirect, with the exception of the original marble columns supporting the galleries of the octagon.

Personal biography, architectural genealogy, projects of architectural restoration, and German imperial ambitions thus coincided to sensitize the young Mies to the aesthetic and ornamental potential of stone. Despite the role assumed by the Barcelona Pavilion as a symbol of the post-imperial Weimar order, Mies's use of marble and onyx in the pavilion was deeply rooted in the traditions of a long late antiquity that, mediated by Wilhelmian revivalism, would prove fundamental to his own practice. The convoluted history of the Aachen marbles and their legacy to modernism reinforces a point made at the outset: while the uses of marble in medieval Islamic monuments represented points of direct continuity with the traditions of late antiquity, when it came to the architecture of modernism, that legacy was often highly mediated or refracted and always disjunct in its temporality.

## **V. Imperial Mediations**

That Byzantine, (ersatz) Carolingian, and medieval precedents were decisive for both Loos's and Mies van der Rohe's use of patterned hard stones rather than other models is worth underlining. Marble, alabaster, and onyx veneers were revived during the Renaissance, when interest in chance and natural images waxed once again. Sometimes inspired by Byzantinizing ornament like that in the Basilica of San Marco, Venice, such hard stones were exploited by Renaissance architects for their pictorial qualities and "representational" effects.<sup>142</sup> Crucially, however, it was not the architecture of the Italian Renaissance that inspired the treatment of marble in the works of these pioneering modernists, but much earlier models. The reasons for this lie, almost certainly, not only in personal biography, but also in the ideological background against which interest in late antiquity and its legacy was developing and being mobilized for imperial projects in Central Europe during the late nineteenth and early twentieth centuries.

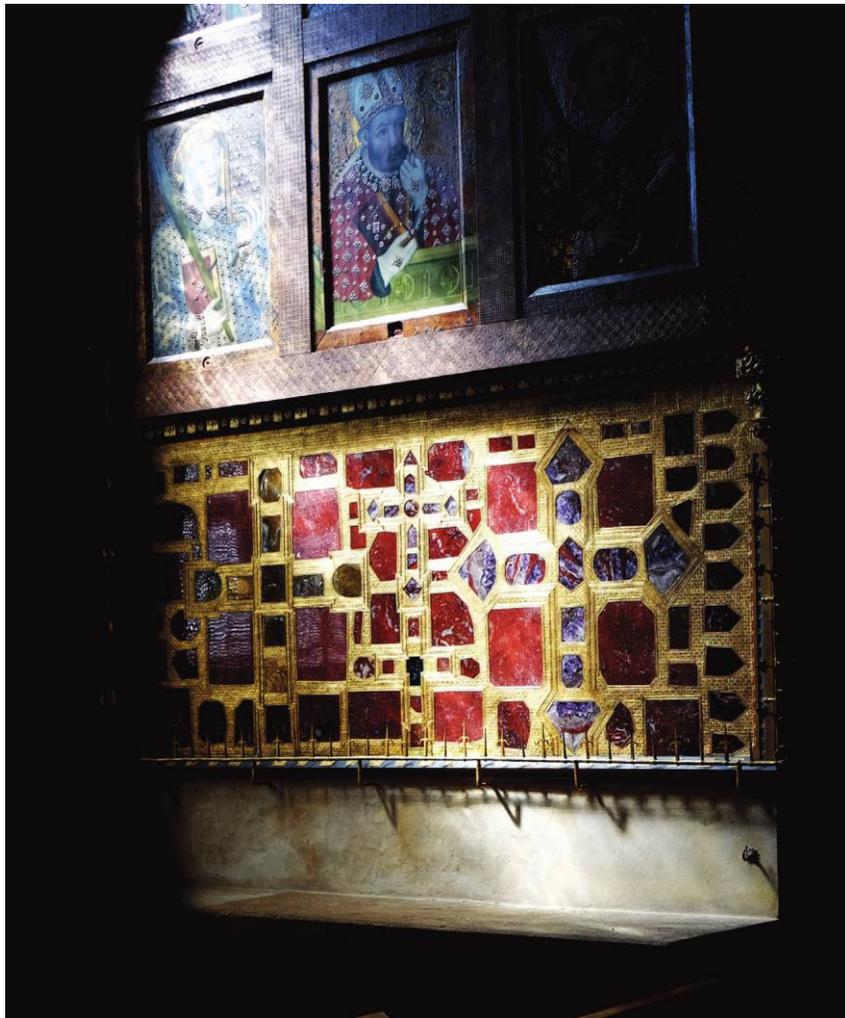
In the official rhetoric of the Hapsburg court at least, Vienna preserved the legacy of the Holy Roman Empire, even if this had been formally dissolved in 1806. As the latest in a long line of claimants to the legacy of a revived Rome, Byzantium (a second Rome) offered an obvious point of reference for Hapsburg aspirations; as Masheck has noted in his discussion of the Byzantinism in Loos's architecture, the Hapsburg imperial emblem, the double-headed eagle, not only perpetuated the symbol of the Holy Roman Empire but was first used by the later Byzantine emperors.<sup>143</sup> Just as the restoration of the Aachen chapel that proved so decisive for the practice of Mies van der Rohe formed part of a policy of Hohenzollern self-aggrandizement, so architectural restoration was also deployed to promote Hapsburg claims on the Byzantine past. The restoration of the sixth-century mosaics in the Eufasian Cathedral at Poreč, then part of the Austro-Hungarian empire, by teams sent from Vienna in the late nineteenth

century is, for example, directly relevant to the ideological underpinnings of the contemporary vogue for Byzantinisms in Austro-Hungarian architecture.<sup>144</sup> It is hardly coincidental that it was in contemporary Vienna that the very idea of late antiquity was born and its study initiated.<sup>145</sup>

The legacy of the Holy Roman Empire was no less keenly felt in Germany, where the foundation of the Second Reich in 1871 under the aegis of the Hohenzollerns witnessed renewed claims to a Roman imperium first revived by the Carolingians. Especially during the reign of Kaiser Wilhelm II, the Palatine Chapel of Charlemagne, the first Holy Roman Emperor, at Aachen was actively mobilized in pursuit of those claims, as we saw above. The restorations that led to the installation of the marble revetments of its interior were inaugurated in connection with the Kaiser's visit in 1902; Wilhelm II visited again in 1911, as the works were nearing their completion.<sup>146</sup> Moreover, in 1898, when the Kaiser was given permission by the Ottoman sultan Abdul-Hamid II to raise a church on Mount Zion, the highest point of Jerusalem, it was to Aachen that he evidently turned for an appropriate model. Built, like Aachen, in the form of a rotunda punctuated by a first-floor gallery articulated by large arched openings filled with double tiers of paired marble columns, the parallels extended to the projection of an apse from the rotunda, the arrangement found in the original Carolingian church at Aachen. The Jerusalem church was completed in 1910, its mosaics the work of Puhl and Wagner, who had earlier executed the Ravenate mosaics in the Kaiser's Gedächtniskirche in Berlin and those installed in Aachen soon after.<sup>147</sup>

The impact of Byzantine and Carolingian architecture on Adolf Loos and Mies van der Rohe needs, therefore, to be read against the ideologically charged associations and consequent accessibility and visibility of both traditions. Hapsburg and Hohenzollern claims to the traditions of the Roman past operated via the intermediary of the Holy Roman Empire and its legacy. Other models may, therefore, also have come into play, among them Charles IV's Karlštejn Castle (1365) and the Chapel of St. Wenceslas in St. Vitus Cathedral in Prague (1372). In the former, built by the Holy Roman Emperor to house relics of the True Cross, the lower walls of the Chapel of St. Catherine and the Chapel of the Holy Cross were set with cruciform arrangements of patterned red and green marble set in impressed gilded metal revetments identical to those framing contemporary icons (fig. 33).<sup>148</sup>

This treatment of stone as if it were image indicates an iconographic dimension related to the evocation of Heavenly Jerusalem (and possibly medieval imaginings of the Chapel of the Holy Grail) through the use of polished polychrome marble wall revetments and semiprecious stones. Although these examples are superlative, the use of patterned marbles, onyxes, and rare hard stones in ways that suggest an iconography of materials is well documented in medieval sacred art, and continued into the early modern period.<sup>149</sup> Among the relevant objects are medieval portable altars, popular both in the Latin West and the Crusader East, slabs of patterned agate, jasper, marble, or porphyry whose alluring otherworldly crystalline grains and polychrome staining were privileged even over and above the small-scale figural scenes of the frames in which they were set.



**Fig. 33**  
 Chapel of the Holy  
 Cross, Karlštejn  
 Castle, 1365, marble-  
 encrusted wall. Photo  
 by F. B. Flood.

The appearance of such stones evoked a constellation of related concepts from the primal matter of creation to Christ himself, the life-giving rock (1 *Corinthians* 10:4), suggesting a consubstantiality between sacrality and minerality rooted not only in the formal qualities of stone but also in its numinous materiality and indeterminate ontology.<sup>150</sup>

Such a complex iconography of materials is theorized neither by Loos nor Mies van der Rohe. Yet, their intimate knowledge of the properties and types of stone (both were after all the sons of stonemasons) and their undoubted familiarity with late antique and medieval precedents are likely to have sensitized them to the possibilities and potentialities of stone, and not simply as a constructional material or cladding. Here we might invoke Loos's own thoughts on naturally polished granite and marble, written in 1917: "We have swapped the ornamentation of earlier times for something much more wonderful. Fine material is God's wonder [*Das edle material ist gottes wunder*]."<sup>151</sup>

Much as Hapsburg and Hohenzollern claims to the traditions of the Roman past operated via the intermediary of the Holy Roman Empire and its legacy, so in the work of Loos and Mies van der Rohe the impact of late antique and early medieval architecture was, in general, highly mediated, reflected, and refracted through images, imaginings, and idealized “reconstructions” of iconic late antique and medieval monuments. The importance of such historical antecedents is nonetheless clear. Their legacy not only calls into question notions of rupture that are central to narratives of a self-generating modernism, but highlights genealogical connections between the religious architecture of late antiquity and the secular icons of architectural modernism that deserve much closer analysis. Just as important, the seemingly insignificant detail of marble cladding offers a small but timely reminder of the complex imbrications that relate the architectural icons of medieval Christendom, Islam, and European modernism through their common debt to the world of the late antique Mediterranean, however mediated.

## **VI. Lithic Equivocations**

Having sketched some of the divergent skeins that relate the use of marble in premodern churches and mosques to the stone cladding and veneers favored in iconic works of architectural modernism, I want to end by suggesting that what these have in common are not only similar modes of manipulating the medium inherited from late antiquity by different routes, but also a consequent and shared penchant for ambiguities that were not merely visual but ontological, closely related to questions of agency and facture. In this sense, invocations of the natural or unmade image in accounts of the marble veneers found in medieval and early modern mosques are no less relevant to the contextual deployment of marble in the Looshaus and the Barcelona Pavilion.

This common embrace of marble reflected the opportunities that the stone offered for orchestrating pictorial and even representational effects, effects that, in the Islamic world at least, were often enhanced at the meta-level of depiction. Orchestration because, for quite different reasons, in both medieval mosques and modernist shrines the natural properties of marble facilitated the production of ornamental or even figural effects ambiguous in their forms and ontology. The ability to exploit such qualities, even in representation, was precisely what rendered the medium attractive. The marbles deployed in mosques manifested natural forms with a potential to be read as anthropomorphic or zoomorphic; these were variously seen as self-generated or divinely authored, despite the role of the mason in enhancing or even realizing their suggestive figurations. In modernist monuments, the same properties enabled not simply ornament but even ornament in a quasi-mimetic vein (see fig. 24), the one thing that was (in theory at least) explicitly banished from the most influential manifestos of modernism.

In the variegated polished stone veneers of modernist monuments such as the Goldman and Salatsch Building or the Barcelona Pavilion we see materiality appearing as ornamental form, in ways that may bear comparison to accounts of

marble veneers in medieval churches and mosques by medieval and early modern viewers. This was patently apparent to an observer such as Le Corbusier, who in a text published in 1925 (and otherwise heavily indebted to Loos's "Ornament and Crime") denounced the "Byzantinism" inherent in the recourse to fine materials by contemporary architects in terms that invariably recall Loos's own penchant for them: "The final retreat for ostentation is in polished marbles with disturbing patterned veins, in veneers of rare woods, which amaze us as much as humming birds."<sup>152</sup> Yet, such sentiments did not prevent even Le Corbusier from going on, three decades later, to design marble-patterned wallpaper that reproduced the veins and crystalline inclusions of the natural stone.<sup>153</sup>

The creative tensions arising from the disavowals, displacements, and equivocations surrounding the aesthetic properties and perceptual potential of marble should not be underestimated. Nor should one underestimate the ultimate success of the attempt to champion nature's work over the activities of the stonemason. The endeavor brings us back full circle to Classical and late antique analogies with painting, and to the triumph of abstraction over naturalism. In his analysis of the Looshaus in Vienna, for example, James Trilling relates its unmade "abstract ornament" to contemporary developments in the visual arts: "The patterns in stone and wood . . . happen by themselves: cutting and polishing only reveal what is already there. . . . What, after all, could be less calculated than a pattern that is not human work? The similarity of surface effects between these natural substances and the most innovative currents in contemporary painting is enough to explain Loos's choice of ornament."<sup>154</sup>

As we have seen, this is not quite true—developments in the contemporary arts might be necessary to explain the embrace of the abstract forms of natural ornament in the work of these pioneering modernists, but they are not sufficient. We need also to consider the legacy of a late antique aesthetic whose abstract qualities are sometimes said to anticipate developments in modernity. Ambiguities arising from the deployment of marble as medium are explicitly theorized neither in the medieval Islamic world nor in modernism, both of which partook of this legacy.<sup>155</sup> Nonetheless, both in the medieval Ka'ba and in modernist icons such as the Looshaus and the Barcelona Pavilion, the natural characteristics of colored marble—the allusive surface patterning of its fractures and veins—legitimizes the presence of ornamental or even "representational" imagery not crafted by any human agent. Instead, agency devolves onto the marble medium, whether seen as the product of *natura naturata* or *natura naturans*.

This is not simply a question of analogies between the use of marble in churches, mosques, and modernist icons, or even of a genealogical relationship ultimately rooted in ancient modes of exploiting the pictorial potential of the marble medium. Rather, what I am drawing attention to is a much more fundamental shared idea of natural images, produced by the (direct or indirect) operation of providence itself: "God's wonder" in Loos's words. However fortuitous or serendipitous the invocation of God's creation and wonder in late antique, medieval, and even modern perceptions of the stone medium, what they have in common is an implicit denial or mitigation of human agency, a sleight of hand that authorizes (an especially apt term) the presence of

pictorial and even representational effects within architectural cultures that equivocated about their desirability or permissibility, if for different reasons. Put another way, the manipulation of the marble medium in both mosques and modernism was characterized by what a modern lawyer might describe as plausible deniability.

■

### Finbarr Barry Flood

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**Epigraphs:** Caillois, *The Writing of Stones*, tr. Barbara Bray (Charlottesville: University Press of Virginia, 1985 [1970]), 14. Tugendhat cited in Wolf Tegethoff, *Mies van der Rohe: The Villas and Country Houses* (New York: Museum of Modern Art, 1985), 98.

**1** Clement Greenberg, "Byzantine Parallels," in Greenberg, *Art and Culture: Critical Essays* (Boston: Beacon, 1965), 167–70; John Onians, "Abstraction and Imagination in Late Antiquity," *Art History* 3, no. 1 (1980): 1–24; Stefan Trinks, "Formen von Abstraktion im Mittelalter: Einfalten und Verschleiern in Trinitarischen Enthüllungen," in Franz Engel and Yannis Hadjinicolaou, eds., *Formwerdung und Formenzug, Actus et Imago* (Berlin: Walter de Gruyter, 2016), 9–49. As many have indicated, abstraction constituted a period taste characterized by a feedback loop in which the reception of late antique, Byzantine, medieval, and premodern Islamic art as arts of abstraction was informed by a twentieth-century vogue for abstraction sometimes influenced in its turn by the experience of premodern art. See Georges Duthuit, "Matisse and Byzantine Space," *Transitions* 5 (1949): 20–37; Madeline H. Caviness, "Broadening the Definitions of 'Art': The Reception of Medieval Works in the Context of Post-Impressionist Movements," in Patrick J. Gallacher and Helen Damico, eds., *Hermeneutics and Medieval Culture* (Albany: SUNY Press, 1989), 259–82; J. B. Bullen, "Byzantinism and Modernism, 1900–1914," *Burlington Magazine* 141 (November 1999): 665–75; David Lewis, "Matisse and Byzantium, or, Mechanization Takes Command," *Modernism/modernity* 16, no. 1 (2009): 51–59; Madeline H. Caviness, "The Politics of Taste: An Historiography of 'Romanesque' Art in the Twentieth Century," in Colum Hourihane, ed., *Romanesque Art and Thought in the Twelfth Century: Essays in Honor of Walter Cahn* (Princeton, NJ: Princeton University Press, 2008), 57–81; Barbara Schellewald, "Matisse in Moskau: Die Geschichte einer Begegnung," in Thomas Grob and Sabina Horber, eds., *Moskau: Metropole zwischen Kultur und Macht* (Cologne: Böhlau Verlag, 2015), 97–122.

**2** On the relationship between abstraction in the early architecture of Mies van der Rohe (including the Barcelona Pavilion) and contemporary trends in drawing and painting, see Neil Levine, "The

- Reemergence of Representation out of Abstraction in Mies van der Rohe,” in Levine, *Modern Architecture: Representation and Reality* (New Haven, CT: Yale University Press, 2009), 213–23.
- 3 Cited in Robert Ousterhout, “Byzantine Architecture: A Moving Target?,” in Roland Betancourt and Maria Taroutina, eds., *Byzantium/Modernism: The Byzantine as Method in Modernity* (Leiden: Brill, 2015), 163.
- 4 On the problem of moving beyond these paradigms, see Roland Betancourt, “Introduction: The Slash as Method,” in Betancourt and Taroutina, *Byzantium/Modernism*, 185.
- 5 Rosemarie Haag Bletter, “The Interpretation of the Glass Dream—Expressionist Architecture and the History of the Crystal Metaphor,” *Journal of the Society of Architectural Historians* 40, no. 1 (1981): 20–43.
- 6 Although the term *Neue Sachlichkeit* emerged around 1925, it was applied retroactively to the architecture of Adolf Loos: Fritz Schmalenbach, “Der Name ‘neue Sachlichkeit,’” in *Kunsthistorische Studien* (Basel: Schudel, 1941), 22–32; Adolf Loos, *Sämtliche Schriften*, ed. Franz Glück (Vienna: Verlag Herold, 1962), 1:457.
- 7 See, for example, Alina Payne, *From Ornament to Object: Genealogies of Architectural Modernism* (New Haven, CT: Yale University Press, 2012).
- 8 Robin Schuldenfrei, “Sober Ornament: Materiality and Luxury in German Modern Architecture and Design,” in Gülru Necipoğlu and Alina Payne, eds., *Histories of Ornament: From Global to Local* (Princeton, NJ: Princeton University Press, 2016), 334–47.
- 9 James Trilling, “Modernism and the Rejection of Ornament: The Revolution That Never Happened,” *Common Knowledge* 3 (1994): 80. Such a reading, although eminently plausible, contradicts the comments of J. B. Rodgers, who worked with Mies van der Rohe and who stated in a series of lectures delivered at Princeton in 1934–35 that modern architects preferred to omit ornament and “to rely on the color and texture of natural materials rather than spoil their surfaces with modernistic ornament”; cited in Franz Schulze and Edward Windhorst, *Mies van der Rohe: A Critical Biography*, new and rev. ed. (Chicago: University of Chicago Press, 2012), 167.
- 10 Dario Gamboni, *Potential Images: Ambiguity and Indeterminacy in Modern Art* (London: Reaktion, 2002), 122.
- 11 Adolf Loos, “Zwei Aufsätze und eine Zuschrift über das Haus auf dem Michaelerplatz,” in Loos, *Sämtliche Schriften*, 1:293–301; Christopher Long, *The Looshaus* (New Haven, CT: Yale University Press, 2012).
- 12 Payne, *From Ornament to Object*, 223. See also Robin Evans, “Mies van der Rohe’s Paradoxical Symmetries,” *Files* 19 (1990): 56–57.
- 13 Gamboni, *Potential Images*, 122.
- 14 The geological term was adopted by Erwin Panofsky to refer to cases where disparate artifacts or images display morphological similarities (at least to the eye of the art historian) but differ in their meaning: Panofsky, *Studies in Iconology: Humanistic Themes in the Art of the Renaissance* (New York: Westview, [1939] 1972), 70–71. It has often been used disparagingly to denote an emphasis on superficial formal analogy at the expense of deeper conceptual engagement: Yve-Alain Bois, “On the Uses and Abuses of Look-Alikes,” *October* 154 (Fall 2015): 127–49. For recent more positive deployments of the term, see Alexander Nagel and Christopher Wood, *Anachronic Renaissance* (New York: Zone, 2010), 48–49; Alexander Nagel, *Medieval Modern: Art out of Time* (New York: Thames and Hudson, 2012); Amy Knight Powell, *Depositions: Scenes from the Late Medieval Church and the Modern Museum* (New York: Zone, 2012), esp. 10–11.
- 15 Among others, see Stewart Elliott Guthrie, *Faces in the Clouds: A New Theory of Religion* (Oxford: Oxford University Press, 1993), esp. 96–98, 141–42. More recently, Dario Gamboni, “The Underground and the Virgin of Guadalupe: Contexts for the *Virgen del Metro*, Mexico City 1997–2007,” *Anales del Instituto de Investigaciones Estéticas* 31, no. 95 (2009): 119–53.
- 16 G. W. Leibniz, *New Essays on Human Understanding*, tr. and ed. Peter Remnant and Jonathan Bennett (Cambridge: Cambridge University Press, 1982), 51–52.
- 17 After Marcus Milwright, “‘Waves of the Sea’: Responses to Marble in Written Sources (Ninth–Fifteenth Centuries),” in Bernard O’Kane, ed., *The Iconography of Islamic Art: Studies in Honour of Robert Hillenbrand* (Edinburgh: Edinburgh University Press, 2005), 211–21, at 215. For the original Arabic, see Muhammad ibn Ahmad ibn Jubayr, *Rihla*, ed. M. J. de Goeje (Leiden: Brill, 1907), 93–94.
- 18 Terry Allen, “The Marble Reventments of the Piers of the Dome of the Rock” (Solipsist Press, 2014), [www.sonic.net/~tallen/palmtree/dor.piers/dor.piers.htm](http://www.sonic.net/~tallen/palmtree/dor.piers/dor.piers.htm) (accessed September 10, 2015).
- 19 See, for example, reports of the archdeacon and marble-worker John, employed in the ornamentation of the early Islamic monuments of Jerusalem: Bernard Flusin, “L’Esplanade de Temple à l’arrivée des Arabes, d’après deux récits Byzantins,” in Julian Raby and Jeremy Johns, eds., *Bayt al-Maqdis: ‘Abd al-Malik’s Jerusalem*, Oxford Studies 9, Part 1 (Oxford: Oxford University Press, 1992), 21. As late as the fourteenth century, Christian marble-cutters were sent from Damascus to work on the Mamluk monuments of Cairo: Nasser O. Rabbat, *The Citadel of Cairo: A New Interpretation of Royal Mamluk Architecture* (Leiden: Brill, 1995), 200.
- 20 Abu’l-Hasan al-Mas’udi, *Les prairies d’Or*, ed. and tr. Charles Barbier de Meynard (Paris, 1861–77), 5:192–93.

- 21 See, for example, Julie Scott-Meisami, "The Palace-Complex as Emblem: Some Samarran Qaṣīdas," in Chase F. Robinson, ed., *A Medieval Islamic City Reconsidered: An Interdisciplinary Approach to Samarra*, Oxford Studies in Islamic Art 14 (Oxford: Oxford University Press, 2001), 73.
- 22 Fabio Barry, "Walking on Water: Cosmic Floors in Antiquity and the Middle Ages," *Art Bulletin* 89, no. 4 (2007): 627–56; Bente Küllerich, "The Aesthetic Viewing of Marble in Byzantium: From Global Impression to Focal Attention," *Arte medievale* 4 (2012): 9–28; Milwright, "Waves of the Sea."
- 23 Cyril Mango, *The Art of the Byzantine Empire, 312–1453* (Toronto: University of Toronto Press, 1986), 61.
- 24 *Ibid.*, 85; Paulus Silentiarius, *Descriptio Sanctae Sophiae*, ed. Claudio De Stefani (Berlin: De Gruyter, 2011), lines 605–12.
- 25 On this aspect of Classical and late antique ekphrasis, see Ruth Webb, *Ekphrasis, Imagination, and Persuasion in Ancient Rhetorical Theory and Practice* (Farnham, UK: Ashgate, 2009), esp. 107–30.
- 26 The phenomenon was first noted by Onians, who wrote that "several of the figures have eyes neatly bored out in the appropriate places": Onians, "Abstraction and Imagination," 10. Based on Onians's observation, Gamboni suggested that these cavities were "once filled with colored matter," although there is no evidence for this, and their uneven character renders it unlikely: Gamboni, *Potential Images*, 26. Onians seems to assume that these surface borings are original, using them as indications of artistic intention. Close examination suggests, however, that they are ad hoc indexes of enduring perception and reception, quite distinct from the traces of attachment of metal revetments that one finds elsewhere in the marbles of the galleries.
- 27 Ruy González de Clavijo, *Narrative of the Embassy to the Court of Timour*, tr. C. R. Markham (London: Hakluyt Society, 1859), 38.
- 28 Cecil L. Striker and Y. Doğan Kuban, eds., *Kalenderhane in Istanbul: The Buildings* (Munich: Verlag Philipp von Zabern, 1997), 102–17.
- 29 Robert G. Ousterhout, *The Architecture of the Kariye Camii in Istanbul* (Washington, DC: Dumbarton Oaks, 1988), 40–43. And see Raphael Rosenberg, "Verzögertes Formerkennen als ästhetische Erfahrung," in Franz Engel and Yannis Hadjinicolaou, eds., *Formwerdung und Formentzug*, Actus et Imago (Berlin: Walter de Gruyter, 2016), 111–15.
- 30 Many of the marble revetments have been replaced and restored, but enough remain to indicate the original arrangement: F. W. Deichmann, *Ravenna, Hauptstadt des spätantiken Abendlandes* (Wiesbaden: F. Steiner, 1969), 18–135; Fabio Bertelli, "Metodo storico alla prova nella ricostruzione del paramento lapideo dell'apside di San Vitale," *Opificio delle Pietre Dure Restauro* 4 (1992): 216–27; Isotta Fiorentini and Piero Orioli, *I marmi antichi di San Vitale* (Faenza: Edit Faenza, 2003).
- 31 Lorenzo Lazzarini, "Le pietre e i marmi colorati della basilica di San Marco a Venezia," in Renato Polacco, ed., *Storia dell'arte marciana: Sculture, tesoro, arazzi* (Venice: Marsilio, 1997), 1:309–26.
- 32 Antonio di Piero Averlino, known as Filarete, *Treatise on Architecture*, tr. John R. Spencer (New Haven, CT: Yale University Press, 1965), 1:31; Wladimir Dorigo, "Spolia marmoree d'oltremare a Venezia (secoli XI–XIV)," *Saggi e memorie di storia dell'arte* 28 (2004): 1–14.
- 33 Cited in Alina Payne, "Living Stones, Crying Walls: The Dangers of Enlivenment in Architecture from Renaissance Putti to Warburg's *Nachleben*," in Caroline van Eck, Joris van Gastel, and Elsje van Kessel, eds., *The Secret Life of Artworks: Exploring the Boundaries between Art and Life* (Chicago: University of Chicago Press, 2014), 333.
- 34 See, for example, a recent extensive study of the sixth-century mosaics in the cathedral of Poreč in Croatia, which neither discusses nor depicts the spectacular associated opus sectile work on the lower walls of the apse, below the mosaics: Ann Terry and Henry Maguire, *Dynamic Splendor: The Wall Mosaics in the Cathedral of Eufrasius at Poreč*, 2 vols. (University Park: Pennsylvania State University Press, 2007). These are treated separately in Ann Terry, "The 'Opus Sectile' in the Eufrasius Cathedral at Poreč," *Dumbarton Oaks Papers* 40 (1986): 147–64. For an eloquent statement of the problem, see Gamboni, *Potential Images*, 20. Exceptions include Küllerich, "Aesthetic Viewing of Marble."
- 35 Barry, "Walking on Water," 641.
- 36 Dan van der Reenen, "The Bilderverbot, a New Survey," *Der Islam* 67 (1990): 27–77.
- 37 Abu Hamid al-Gharnati, *Al-Mu'rib 'an ba'q' aṣṣā'ib al-Magrib* (Elogio de algunas maravillas del Magrib), ed. Ingrid Bejarano (Madrid: Consejo Superior de Investigaciones Científicas, 1991), 84 (Ar.), 162 (tr.). A more ambiguous case concerns reports of a marble column marking a grave in the Qarafa cemetery of medieval Cairo in (or on) which the white face of the deceased appeared: Marco Schöller, *The Living and the Dead in Islam: Studies in Arabic Epitaphs*. Vol. 2: *Epitaphs in Context* (Wiesbaden: Harrassowitz Verlag, 2004), 263.
- 38 John Mitchell, "Believing Is Seeing: The Natural Image in Late Antiquity," in Jill A. Franklin, T. A. Heslop, and Christine Stevenson, eds., *Architecture and Interpretation: Essays for Eric Fernie* (Rochester, NY: Boydell, 2012), 27–31, figs. 2–10.
- 39 Jurgis Baltrušaitis, *Aberration: An Essay on the Legend of Forms* (Cambridge, MA: MIT Press, 1989), 85–87.
- 40 *Ibid.*, 82–86, figs. 58–60; Gamboni, *Potential Images*, 29.
- 41 Filarete, *Treatise on Architecture*, 1:31. See Gamboni, *Potential Images*, 29, fig. 5.
- 42 Albertus Magnus, *Book of Minerals*, tr. Dorothy Wyckoff (Oxford: Clarendon, 1967), 128.

**43** Book-matched marble veneers line the interiors of two subsidiary mihrabs in the Aqsa Mosque in Jerusalem, whose main mihrab also has a low, curving dado of similar slabs at its base. For images of these, which are datable to the second half of the twelfth century or the beginning of the thirteenth, see Robert Hillenbrand and Sylvia Auld, eds., *Ayyubid Jerusalem: The Holy City in Context, 1187–1250* (London: Al Tajir-World of Islam Trust, 2009), pls. LXX–LXXII.

**44** Elzear Horn, *Ichnographiae Monumentorum Terrae Sanctae (1724–1744)*, tr. E. Hoade and B. Bagatti (Jerusalem: Franciscan, 1962), 206; St. H. Stephan, “Evlia Tshelebi’s Travels in Palestine: VI,” *Quarterly of the Department of Antiquities of Palestine* 9 (1942): 88. Birds are among the more common forms perceived in the architectural marbles of the medieval and early modern Mediterranean: Baltrušaitis, *Aberration*, 85.

**45** Ahmed ibn Mohammed al-Makkari, *The History of the Mohammedan Dynasties in Spain*, tr. Pascual de Gayangos (London: Royal Asiatic Society, 2003), 1:230. By the time that these marvels were being reported, the mosque was already in Christian hands, converted for use as a church; the lack of earlier references led to skepticism about their existence among the Arab chroniclers, but they are perfectly in keeping with the examples reported from elsewhere in the Islamic world.

**46** The distinction is usually attributed to Spinoza (d. 1677), but in a forthcoming book, Beate Fricke demonstrates that it existed in scholastic writings as early as the late twelfth or early thirteenth century.

**47** Leon Battista Alberti, *On Painting*, tr. John Richard Spencer (New Haven, CT: Yale University Press, 1966), 67.

**48** Pliny, *Natural History* 36:IV and 37:III.

**49** Although at least one account refers to such veneers being present in the audience chamber of the Umayyad palace in Damascus: Milwright, “Waves of the Sea,” 213.

**50** Michael Greenhalgh, *Marble Past, Monumental Present: Building with Antiquities in the Mediaeval Mediterranean* (Leiden: Brill, 2009), 290–91. The use of painted dadoes emulating book-matched marble veneers and opus sectile is well documented in the pre-Islamic architecture of the eastern Mediterranean. See, for example, Elizabeth S. Bolman, “Painted Skins: The Illusions and Realities of Architectural Polychromy, Sinai and Egypt,” in Sharon E. J. Gerstel and Roberts S. Nelson, eds., *Approaching the Holy Mountain: Art and Liturgy at St. Catherine’s Monastery in the Sinai* (Turnhout: Brepols, 2010), 138–39, fig. 44.

**51** R. W. Hamilton, *The Structural History of the Aqsa Mosque: A Record of Archaeological Gleanings from the Repairs of 1938–1942* (Jerusalem: Oxford University Press, 1949), 2–3, pl. III, 2–4.

**52** Mitchell, “Believing Is Seeing,” 32–33, fig. 11.

**53** The phenomenon finds analogies in late antique art, in the imitation of marble on the mosaic floors of later Roman North Africa, for example: Demetrios Michaelides, “Some Aspects of Marble Imitation in Mosaic,” in *Studi miscellanei* 26, *Marmi antichi: Problemi d’impiego, di restauro e d’identificazione* (1993): 155–63. Like the painted marble dadoes of early Islamic monuments, such intermediality often enabled the exaggeration of the aqueous, patterned, or “pictorial” effects of the marble medium. See, for example, the riotous colors and pattern of the painted trompe l’oeil marbles preserved in the Red Monastery at Sohag in Upper Egypt, datable between 525 and 800 CE: Elizabeth S. Bolman, “Late Antique Aesthetics, Chromophobia, and the Red Monastery, Sohag, Egypt,” *East Christian Art* 3 (2006): 1–24.

**54** Thomas Leisten, “For Prince and Country(side): The Marwanid Mansion at Balis on the Euphrates,” in Karin Bartl and Abd al-Razzaq Moaz, eds., *Residences, Castles, Settlements: Transformation Processes from Late Antiquity to Early Islam in Bilad al-Sham* (Rahden, Germany: VML, 2008), 377–94; Finbarr Barry Flood, “Animal, Vegetal, and Mineral: Ambiguity and Efficacy in the Nishapur Wall-Paintings,” *Representations* 133 (Winter 2016): 26, figs. 8–9. The opus sectile elements of these painted panels are very similar to those found on the painted plaster covering some of the columns in the Aqsa Mosque in Jerusalem (see note 51), which may be of similar date (Hamilton, *Structural History*).

**55** Charles K. Wilkinson, *Nishapur: Some Early Islamic Buildings and Their Decoration* (New York: Metropolitan Museum of Art, 1987), 161–84.

**56** As their excavators noted, “This strange combination of forms seems to be trying to express the frustrated strivings of a human being without actually representing him—a subject obscure enough to satisfy even the most surrealist of artists”: Walter Hauser and Charles K. Wilkinson, “The Museum’s Excavations at Nishāpūr,” *Bulletin of the Metropolitan Museum of Art* 37, no. 4 (1942): 100. See also Flood, “Animal, Mineral, and Vegetal.”

**57** A. Fodor, “The Rod of Moses in Arabic Magic,” *Acta Orientalia Academiae Scientiarum Hungaricae* 32 (1978): 1–17; Venetia Porter, “Amulets Inscribed with the Names of the ‘Seven Sleepers’ of Ephesus in the British Museum,” in Fahmida Suleiman, ed., *Word of God, Art of Man: The Qur’an and Its Creative Expressions* (Oxford: Oxford University Press, 2007), 123–34.

**58** On the connection between the Samarra dadoes and earlier marble revetments in Byzantine Syria, see Terry Allen, *Five Essays on Islamic Art* (Sebastopol, CA: Solipsist, 1988), 12–14, figs. 29–31. Examples of luster tiles from Samarra imitating “polished figured marble” are found in many museum collections: Oliver Watson, *Ceramics from Islamic Lands* (London: Thames and Hudson, 2004), 184. The speckled appearance of these is anticipated in some painted faux-marble revetments from late antique Egypt: Bolman, “Late Antique Aesthetics,” 15–16, pls. 13–14.

- 59 Meisami, "The Palace Complex as Emblem," 73; Milwright, "'Waves of the Sea.'"
- 60 See Flood, "Animal, Vegetal, and Mineral," 30–32, figs. 11–13. It is worth considering work by cognitive psychologists on the importance of bilateral symmetry, faces, and eyespots (markings resembling eyes) to the ability to discriminate between animate and inanimate forms. See, for example, Susan A. Gelman and John E. Opfer, "Development of the Animate-Inanimate Distinction," in Usha Goswami, ed., *Blackwell Handbook of Childhood Cognitive Development* (London: Blackwell, 2002), 154.
- 61 Gülrü Necipoğlu, *The Topkapı Scroll—Geometry and Ornament in Islamic Architecture* (Los Angeles: Getty Center for the History of Art and the Humanities, 1995), 93–97; Yasser Tabbaa, *The Transformation of Art during the Sunni Revival* (Seattle: University of Washington Press, 2001), 74–77; Thomas Leisten, "Abbasid Art," *Hadith al-Dar* 24 (2007): 50–57.
- 62 Michael Meinecke, "Mamlukische Marmordekorationen in der osmanischen Türkei," *Mitteilungen des deutschen Archäologischen Instituts Abteilung Kairo* 27, no. 2 (1971): 207–20.
- 63 Viktoria Meinecke-Berg, "Marmorfliesen: Zum Verhältnis von Fliesendekoration und Architektur in der Osmanischen Baukunst," *Kunst des Orients* 8, no. 1/2 (1972): 35–59.
- 64 John Carswell, "Two Tiny Turkish Pots—Some Recent Discoveries in Syria," *Islamic Art* 2 (1987): 205–8, figs. A–D.
- 65 Sophie Makariou, ed., *Chefs-d'oeuvre islamiques de l'Aga Khan Museum* (Paris: Musée du Louvre), 78, no. 72. An identical panel, presumably also from Damascus, is today preserved in the Sursock Museum in Beirut. This shows the sandals beneath an arch borne on marble columns, but these lack the zoomorphic ambiguities of the marble depicted in the tiles now in the Aga Khan collection.
- 66 Roger Caillois, *The Writing of Stones*, tr. Barbara Bray (Charlottesville: University Press of Virginia, 1985), 78.
- 67 Roland Betancourt, "Tempted to Touch: Tactility, Ritual, and Mediation in Byzantine Visuality," *Speculum* 91, no. 3 (2016): 689. See also Emmanuel Alloa, "Seeing-As, Seeing-In, Seeing With: Looking through Images," in *Image and Imaging in Philosophy, Science and the Arts: Proceedings of the 33rd International Ludwig Wittgenstein-Symposium in Kirchberg*, Publications of the Austrian Ludwig Wittgenstein Society / Image and Imaging in Philosophy, Science and the Arts, new ser., 16/1 (16) (Frankfurt: Ontos Verlag, 2010), 179–90.
- 68 Baltrušaitis, *Aberration*, 61–73; Caillois, *Writing of Stones*, 26–36; Gamboni, *Potential Images*, 37–38.
- 69 Bernard O'Kane, "Rock Faces and Rock Figures in Persian Painting," *Islamic Art* 14 (1990–91): 219–46; Nina Ergin, "Rock Faces, Opium, and Wine: Speculations on the Original Viewing Context of Persianate Manuscripts," *Der Islam* 90, no. 1 (2013): 65–105.
- 70 James Elkins, *Why Are Our Pictures Puzzles? On the Modern Origins of Pictorial Complexity* (New York: Routledge, 1999), 181. See also Gamboni, *Potential Images*, 16–17.
- 71 A. Dupont-Sommer, "Une hymne Syriaque sur la cathédrale d'Édesse," *Cahiers archéologiques* 2 (1947): 31, 35; Onians, "Abstraction and Imagination in Late Antiquity," 7–11; Andrew Palmer, "The Inauguration Anthem of Hagia Sophia in Edessa," *Byzantine and Modern Greek Studies* 12 (1988): 132; Maria Luigia Fobelli, "Descrizione e percezione delle immagini acheropite sui marmi bizantini," in Arturo Calzona, Roberto Campari, and Massimo Mussini, eds., *Immagine e ideologia: Studi in onore di Arturo Quintavalle* (Milan: Electa, 2007), 27–32.
- 72 James Trilling, "The Image Not Made by Human Hands and the Byzantine Way of Seeing," in Herbert L. Kessler and Gerhard Wolf, eds., *The Holy Face and the Paradox of Representation: Papers from a Colloquium Held at the Bibliotheca Hertziana, Rome, and the Villa Spelman, Florence, 1996* (Bologna: Nuova Alfa Editoriale, 1998), 108–27; Alexei Lidov, "The Miracle of Reproduction: The Mandylin and Keramion as a Paradigm of the Sacred Space," in Christoph L. Frommel and Gerhard Wolf, eds., *L'immagine di Cristo: Dall'acheropita alla mano d'artista* (Vatican City: Biblioteca Apostolica Vaticana, 2006), 19–41; Mitchell, "Believing Is Seeing," 26.
- 73 The biography of the tenth-century Greek Saint Nikon recounts how a stone transformed itself into an image of the saint, without the intervention of a human hand: Glenn Peers, "Byzantine Things in the World," in Peers, ed., *Byzantine Things in the World* (New Haven, CT: Yale University Press, 2013), 76. Similarly, in the 29th Cantiga of the *Cantigas de Santa Maria*, compiled in thirteenth-century Spain, we encounter *acheiropoietia* in the form of two marble columns in the Garden of Gethsemane in Jerusalem on which the Virgin's image miraculously appears: Rocío Sánchez Ameijeiras, "Imaxes e teoría da imaxe nas *Cantigas de Santa María*," in Elvira Fidalgo, ed., *As Cantigas de Santa María* (Vigo: Ed. Xerais de Galicia, 2002), 281–83; Alejandro García Avilés, "Imágenes 'vivientes': Idolatría y herejía en las *Cantigas de Alfonso X El Sabio*," *Goya* 321 (2007): 324–42. For other examples, see Michele Bacci, "Epigoni orientali e occidentali dell'immagine di Cristo 'non fatta da mano d'uomo,'" in Christoph L. Frommel and Gerhard Wolf, eds., *L'immagine di Cristo: Dall'acheropita alla mano d'artista* (Vatican City: Biblioteca Apostolica Vaticana, 2006), 43–60. Even post-Reformation Protestantism was not immune to the auratic appeal of the *acheiropoieton*, with miraculous portraits of Luther "neither painted nor carved, or chiseled in stone" appearing after his death: Joseph L. Koerner, *The Reformation of the Image* (Chicago: University of Chicago Press, 2004), 196.

- 74 Michael B. Dick, "Prophetic Parodies of Making the Cult Image," in Dick, ed., *Born in Heaven Made on Earth: The Making of the Cult Image in the Ancient Near East* (Winona Lake, IN: Eisenbrauns, 1999), 41–42; Shaykh Muhammad Bakhit, *Al-Jawāb al-Shāfiʿī ibāḥat al-taṣwīr al-fūtūghrāfi* (The Shafiʿi Response Concerning Religious Obligations Relating to Photographic Images) (Misr: al-Maṭbaʿah al-Khayrīyah, ca. 1920).
- 75 Payne, *From Ornament to Object*, 234. On the photograph as *acheiropoieton* (although the term is not used), see André Bazin, "The Ontology of the Photographic Image," *Film Quarterly* 13, no. 4 (1960): 4–9; Devin Singh, "Iconicity of the Photographic Image: Theodore of Stoudios and André Bazin," in *Byzantium/Modernism: The Byzantine as Method in Modernity* (Leiden: Brill, 2015), 248–49.
- 76 For a useful discussion of the kind of distinction being made here, and its implications for conceptions of the photograph as an indexical image, see Peter Geimer, "'Self-Generated' Images," in Jacques Khalip and Robert Mitchell, eds., *Releasing the Image: From Literature to the New Media* (Stanford, CA: Stanford University Press, 2011), 27–43.
- 77 <https://www.herzogdemeuron.com/index/projects/complete-works/051-075/057-greek-orthodox-church.html>. I am grateful to Daniel Jütte for drawing my attention to this.
- 78 Tim Mackintosh-Smith, ed. and tr., *Accounts of China and India, Abū Zayd al-Sīrāfi* (New York: New York University Press, 2014), 41–43.
- 79 Muhammad ibn Mahmud Tusi, *ʿAjāʾib al-makhlūqāt wa gharāʾib al-mawjūdāt*, ed. Manuchichr Sutudeh (Tehran: BTNK, 1966), 334. For a discussion of the text, see Oya Pancaroğlu, "Signs in the Horizon: Concepts of Image and Boundary in a Medieval Persian Cosmography," *Res: Anthropology and Aesthetics* 43 (2003): 31–41.
- 80 Baltrušaitis, *Aberration*, 84–85.
- 81 Bibliothèque nationale de France Supplément persan 332; Taraneh Fotouhi, "Les illustrations d'un manuscrit persan de la Bibliothèque nationale: Le livre des merveilles de la création," *Histoire de l'art* 4 (1988): 41–52. As far as I am aware, this significant omission has attracted little comment.
- 82 See, among others, Gamboni, *Potential Images*, 29.
- 83 Leon Battista Alberti, *On Sculpture*, tr. Jason Arklles (N.p.: Lulu.com, 2013), 9. See also Gamboni, *Potential Images*.
- 84 Baltrušaitis, *Aberration*, 99.
- 85 See, for example, M. E. Howlett, "The Inscriptions in the Sanctuary Pavement at Westminster," in L. Grant and R. Mortimer, eds., *Westminster Abbey: The Cosmati Pavements* (Farnham, UK: Ashgate, 2002), 100–110.
- 86 Baltrušaitis, *Aberration*, 100.
- 87 See, for example, de Clavijo, *Narrative of the Embassy*, 38; Cyril Mango and John Parker, "A Twelfth-Century Description of St. Sophia," *Dumbarton Oaks Papers* 14 (1960): 239; Mitchell, "Believing Is Seeing," 22; Payne, "Living Stones, Crying Walls," 333–34.
- 88 De Clavijo, *Narrative of the Embassy*, 38.
- 89 Filarete, *Treatise on Architecture*, 1:31.
- 90 See, for example, Lorraine Daston, "Nature by Design," in Caroline A. Jones and Peter Galison, eds., *Picturing Science Producing Art* (London: Routledge, 1998), 232–53.
- 91 A rare exception is a sixth-century description of marble veneers for a basilica at Ravenna, which specifies the ability of art not merely to emulate nature but to conquer it, by weaving the veins and variegations of marble into a variety of pictures: see note 133. Conversely, Albertus Magnus mistakenly identifies the images engraved on a Roman cameo as the work of nature: *Book of Minerals*, 130–31.
- 92 Horn, *Ichnographiae Monumentorum*, 206; St. H. Stephan, "Evliya Tshlebi's Travels," 88.
- 93 Loos, *Sämtliche Schriften*, 1:276–88; Adolf Loos, *Ornament and Crime: Selected Essays*, selected and introduced by Adolf Opel, tr. Michael Mitchell (Riverside, CA: Ariadne, 1998), 167–76.
- 94 Hermann Czech and Wolfgang Mistelbauer, *Das Looshaus* (Vienna: Verlag Löcker & Wögenstein, 1976), 77.
- 95 Robert Weldon Whalen, *Sacred Spring: God and the Birth of Modernism in Fin de Siècle Vienna* (Grand Rapids, MI: Eerdmans, 2007), 157.
- 96 Leslie van Duzer, *Villa Müller: A Work of Adolf Loos* (New York: Princeton Architectural Press, 1994), 53.
- 97 Somewhat oddly, in support of the claim, Semper cites Pliny's critique of a Roman penchant for ornamenting walls with "engraved marbles and marble slabs covered in wavy lines to look like animals and objects": Gottfried Semper, *Style in the Technical and Tectonic Arts, or, Practical Aesthetics* (originally published as *Der Stil in den technischen und tektonischen Künsten; oder, Praktische Aesthetik*, 1860–63), tr. Harry Mallgrave and Michael Robinson (Los Angeles: Getty Research Institute, 2004), 410–11.
- 98 "Ein jedes material hat seine eigene formensprache, und keines kann die formen eines anderen materials für sich in anspruch nehmen": in "Das Prinzip der Bekleidung" (1898), in Dietmar Rübél, Monika Wagner, and Vera Wolff, eds., *Materialästhetik: Quellentexte zu Kunst, Design und Architektur* (Frankfurt am Main: Dietrich Reimer Verlag, 2005), 162. Translated as Adolf Loos, "The Principle of Cladding," in Loos, *Spoken into the Void: Collected Essays, 1897–1900*, tr. Jane O. Newman and John H. Smith (Cambridge, MA: MIT Press, 1982), 63–69.

- 99 Adolf Loos, "Die Baumaterialien," in Rübel, Wagner, and Wolff, *Materialästhetik*, 158–61.
- 100 Leslie van Duzer and Kent Kleinman, *Villa Müller: A Work of Adolf Loos* (New York: Princeton Architectural Press, 1997).
- 101 Czech and Mistelbauer, *Das Looshaus*, 41–42.
- 102 Ibid., 73; Gamboni, "Underground and the Virgin of Guadalupe," 143–44.
- 103 See, for example, Ákos Moravánszky, "Byzantinismus in der Baukunst Otto Wagners als Motiv seiner Wirkung östlich von Wien," in Gustav Peichl, ed., *Die Kunst des Otto Wagner* (Vienna: Akademie der Bildenden Künste, 1984), 40–45.
- 104 E. M. Antoniadou, *Ekphrasis tes Hagias Sophias*, 3 vols. (Athens and Leipzig: P. D. Sakellariou and P. Friedländer, 1907–9).
- 105 Joseph Masheck, *Adolf Loos: The Art of Architecture* (London: I. B. Tauris, 2013), 138.
- 106 "Das moderne ornament hat keine eltern und keine nachkommen, hat keine vergangenheit und keine zukunft": Loos, *Sämtliche Schriften*, 1:283; Loos, *Ornament and Crime*, 171.
- 107 Trilling, "Modernism and the Rejection of Ornament," 101.
- 108 Schuldenfrei, "Sober Ornament," 341. The reason for the adoption of these materials in this series of unique structures is unclear, but it may perhaps reflect a disillusionment with large-scale public projects in favor of more singular commissions after the negative reception of the Weissenhofsiedlung in Stuttgart, the model housing colony that Mies oversaw and which brought together a range of innovative modernist architects, including Le Corbusier; Loos was originally to have participated: Schulze and Windhorst, *Mies van der Rohe*, 94–99, 137–38, fig. 4.27. I am grateful to Daniel Jütte for this suggestion.
- 109 Wolf Tegethoff, *Mies van der Rohe: The Villas and Country Houses* (New York: Museum of Modern Art, 1985), 87. See also Caroline Constant, "The Barcelona Pavilion as Landscape Garden: Modernity and the Picturesque," *Files* 20 (1990): 48–52.
- 110 Constant, "Barcelona Pavilion as Landscape Garden," 48–52.
- 111 Payne, *From Ornament to Object*, 223; Evans, "Mies van der Rohe's Paradoxical Symmetries," 56–57.
- 112 Tegethoff, *Mies van der Rohe*, 76.
- 113 Monika Wagner, "Immaterial Materials of the Tugendhat House within the Context of the Aesthetics of Materials of the Time," in Iveta Černá and Ivo Hammer, eds., *Materiality* (Brno: Muzeum města Brna & Hornemann Institut, 2008), 30–31, fig. 5.
- 114 Schuldenfrei, "Sober Ornament," 336, 339. See also William Richard Eric Tozer, "A Theory of Making: Architecture and Art in the Practice of Adolf Loos," PhD dissertation (University College London, 2011), 118–62.
- 115 Evans, "Mies van der Rohe's Paradoxical Symmetries," 63. On the role of chance in the Barcelona Pavilion, see Yeoryia Manolopoulou, *Architectures of Chance* (Farnham, UK: Ashgate, 2013), 139–40, 214–15.
- 116 Tegethoff, *Mies van der Rohe*, 76–77.
- 117 George Brecht, *Chance Imagery* (New York: Great Bear Pamphlets, [1966] 2004), 16.
- 118 Cited in Ousterhout, "Byzantine Architecture: A Moving Target?," 163.
- 119 Ludwig Glaeser, *Mies van der Rohe: The Barcelona Pavilion* (New York: Museum of Modern Art, 1979), n.p., cited in Tegethoff, *Mies van der Rohe*, 81, n.60. The suggestion may not be as outlandish as it seems, given Mies's reported admiration for a series of Roman travertine columns reused to support a medieval ciborium in the Romanesque church of Maria Laach in Cologne. The ciborium was rebuilt by Max Spitta (1842–1902), who collaborated with Franz Schwechten, the architect of the Kaiser's Gedächtniskirche in Berlin, and with Hermann Schaper, who oversaw the work at Aachen discussed below. I am grateful to Stefan Trinks for drawing my attention to these connections, whose significance remains to be investigated.
- 120 Tulay Atak, "Abstraction's Economy: Hagia Sophia in the Imaginary of Modern Architecture," in Betancourt and Taroutina, *Byzantium/Modernism*, 159–61.
- 121 Robert S. Nelson, "Modernism's Byzantium Byzantium's Modernism," in Betancourt and Taroutina, *Byzantium/Modernism*, 22.
- 122 Schulze and Windhorst, *Mies van der Rohe*, 4–15.
- 123 Jean-Louis Cohen, *Ludwig Mies van der Rohe*, 2nd and updated edition (Basel: Birkhäuser, 2007), 13, 70.
- 124 On the original marbles and mosaics, see Charles B. McClendon, "Aachen: Buildings," in Jane Turner and Hugh Brigstocke, eds., *The Dictionary of Art* (New York: Grove, 1996), 1:1–4.
- 125 Helmut Maintz, *Sanierung Mosaiken, Marmorverkleidung und Fußböden im Zentralbau des Aachener Doms*, Karlsverein-Dombauverein Band 14 (Aachen: Thouet Verlag, 2011), 46–47.
- 126 A bronze plaque still preserved in the upper gallery records the termination of the work in 1913, two years after the death of Hermann Schaper, who is described as "inventori operis musivi ac marmorei": Lydia Konnegen, "Inventori operis musivi ac marmorei: Hermann Schaper (1853–1911)—Ein Künstlerleben im Kaiserreich," in "Malereien für die Ewigkeit": *Mosaiken im sakralen Raum; Vorträge des Studententages in Aachen am 13. November 2011* (Neustadt an der Aisch: Verlag Schmidt, 2013), 67–100.
- 127 Josef Strzygowski, *Der Dom zu Aachen und seine Entstellung: Ein kunstwissenschaftlicher Protest* (Leipzig: J. C. Hinrichs, 1904); on the marble, see 89–98.

- 128** Helmut Maintz, "Die Sanierung der Mosaiken im Aachener Dom," in *Malereien für die Ewigkeit*, 118, fig. 8. In addition, recent restoration work has revealed that the surface of the lower parts of the stone piers was originally worked in ways apparently intended to facilitate the bonding of surface revetments, likely of marble: Maintz, *Sanierung*, 58, fig. 110.
- 129** Potential insights into how contemporaries may have perceived marble are provided by the depiction of veined marble columns in the canon tables of Carolingian manuscripts, such as the Vienna Coronation Gospels (ca. 790s), the Lorsch Gospels (ca. 810), and the Gospel of St. Médard in Soissons (before 827). In these, ambiguous forms of faces and heads appear within the natural patterns and veins of the depicted stone: Heinz Ladendorf, "Zur Frage der künstlerischen Phantasie," in Heinz Ladendorf and Horst Vey, eds., *Mouseion: Studien aus Kunst und Geschichte für Otto H. Förster* (Cologne: Verlag M. Du Mont Schauberg, 1960), 24, pl. 13; H. W. Janson, "Chance Images," *Dictionary of the History of Ideas* (New York: Charles Scribner's Sons, 1973), 343, fig. 4; Mitchell, "Believing Is Seeing," 33–35, figs. 12–13. For the Lorsch Gospels (Bucharest, Biblioteca Națională a României, and Alba Iulia, Biblioteca Documentară Batthyáneum), MS R II 1, p. 13, see [http://bibliotheca-laureshamensis-digital.de/view/bnr\\_msr111/0019?kui\\_lang=eng](http://bibliotheca-laureshamensis-digital.de/view/bnr_msr111/0019?kui_lang=eng) (accessed September 20, 2015). I am grateful to Beatrice Kitzinger for drawing my attention to this image.
- 130** Cited in Ernst Günther Grimme, *Der Dom zu Aachen: Architektur und Ausstattung* (Aachen: Einhard-Verlag, 1994), 341.
- 131** See, for example, Alina Payne, "Architecture, Ornament, and Pictorialism: Notes on the History of an Idea from Wölfflin to Le Corbusier," in Karen Koehler, ed., *The Built Surface* (Aldershot: Ashgate, 2002), 2:54–72.
- 132** Although Islamic precedents, including the Dome of the Rock (692), have also been suggested: Michael Greenhalgh, *Marble Past, Monumental Present: Building with Antiquities in the Mediaeval Mediterranean* (Leiden: Brill, 2009), 334–54.
- 133** Cassiodorus, *Variae* 1.6, cited in Onians, "Abstraction and Imagination," 10.
- 134** On the restoration of the Ravenna marbles, see note 30 above.
- 135** Einhard, *The Life of Charlemagne* (Ann Arbor: University of Michigan Press, 1960), 54.
- 136** Beat Brenk, "Spolia from Constantine to Charlemagne: Aesthetics Versus Ideology," *Dumbarton Oaks Papers* 41 (1987): 108–9; McClendon, "Aachen: Buildings." On the statue, see Horst Bredekamp, *Der schwimmende Souverän Karl der Große und die Bildpolitik des Körpers* (Berlin: Verlag Klaus Wagenbach, 2014), 68–87.
- 137** Vera Frowein-Ziroff, *Die Kaiser Wilhelm-Gedächtniskirche: Entstehung und Bedeutung* (Berlin: Gebr. Mann Verlag, 1982), 212–17, 248–53; Nelson, "Modernism's Byzantium," 23.
- 138** Damaged during the Second World War, the mosaic is today on display in the Bodemuseum, Berlin. For the circumstances in which it was acquired and the political context for the reception of Byzantine architectures in nineteenth-century Germany, see Robert S. Nelson, *Hagia Sophia, 1850–1950: Holy Wisdom, Modern Monuments* (Chicago: University of Chicago Press, 2004), 40–47. Wilhelm II's instrumental use of the Ravenna mosaic was not without Prussian antecedents: in 1835, the Prussian crown prince Friedrich Wilhelm had brought a thirteenth-century Italian-Byzantine apse mosaic from Murano. In 1848, after he had acceded to the Prussian throne, this was included in the neo-Byzantinizing Friedenskirche that he built on the grounds of the palace at Potsdam. One year earlier, Friedrich Wilhelm had dispatched Wilhelm Salzenberg to Istanbul to document the Byzantine churches of the city: Tonje Haugland Sørensen, "The Mosaic in the Apse: Friedenskirche and the Construction of the Desired Past," in Ingela Nilsson and Paul Stephenson, eds., *Wanted: Byzantium; The Desire for a Lost Empire* Acta Universitatis Upsaliensis Studia Byzantina Upsaliensia 15 (Uppsala: Uppsala Universitet, 2014), 161–73.
- 139** On the Byzantinizing aspects of nineteenth- and early twentieth-century German mosaics, including those of Puhl and Wagner, see Barbara Schellewald, "'Le byzantinisme est le rêve qui a bercé l'art européen dans son enfance': Byzanz-Rezeption und die Wiederentdeckung des Mosaiks im 19. Jahrhundert," *Mitteilungen des Kunsthistorischen Institutes in Florenz* 52, no. 1 (2008): 123–48.
- 140** Frowein-Ziroff, *Die Kaiser Wilhelm-Gedächtniskirche*, 248–49; Konneges, "Inventori operis musivi," 86–94. In addition, the central chandelier of the Gedächtniskirche was clearly inspired by the massive chandelier donated to the Palatine Chapel of Aachen in the twelfth century by the Holy Roman Emperor Frederick I Barbarossa.
- 141** On Klimt's visit to Ravenna and the impact of its mosaics and marbles on other early twentieth-century visitors, see Nelson, "Modernism's Byzantium," 18, 22–23.
- 142** H. W. Janson, "The 'Image Made by Chance' in Renaissance Thought," in Millard Meiss, ed., *De Artibus Opuscula XL: Essays in Honor of Erwin Panofsky* (New York: New York University Press, 1961), 1: 254–66; Gamboni, *Potential Images*, 31–37; Alexander Nagel, *The Controversy of Renaissance Art* (Chicago: University of Chicago Press, 2011), 261–87.
- 143** Masheck, *Adolf Loos*, 135. See also Margaret Olin, "Alois Riegl: The Late Roman Empire in the Late Hapsburg Empire," *Austrian Studies* 5 (1994): 107–20.
- 144** For these restorations, see Terry and Maguire, *Dynamic Splendor*.
- 145** Jas' Elsner, "The Birth of Late Antiquity: Riegl and Strzygowski in 1901," *Art History* 25, no.

3 (2002): 358–79; W. Liebeschuetz, “The Birth of Late Antiquity,” *Antiquité tardive* 12 (2004): 253–61.

**146** <http://www.aachener-geschichtsverein.de/Veranstaltungen/kaiser-wilhelm-ii-in-aachen> (accessed September 22, 2015).

**147** Erwin Gatz, “Katholische Auslandsarbeit und deutsche Weltpolitik unter Wilhelm II: Zur Stiftung der Domition in Jerusalem (1898),” *Römische Quartalschrift* 73, nos. 1–2 (1978): 23–46; Horst Gründer, “Die Kaiserfahrt Wilhelms II. ins Heilige Land 1898: Aspekte deutsche Palästinapolitik im Zeitalter des Imperialismus,” in Heinz Dollinger, Horst Gründer, and Alois Hanschmidt, eds., *Weltpolitik, Europagedanke, Regionalismus: Festschrift für Heinz Gollwitzer zum 65. Geburtstag* (Münster: Aschendorff, 1982), 363–88.

**148** Karl Möseneder, “Lapides Vivi: Über die Kreuzkapelle der Burg Karlstein,” *Wiener Jahrbuch für Kunstgeschichte* 34, no. 1 (1981): 39–69. As far as I am aware, the implications of this analogy with the revetments of contemporary icons have not been explored. For an example, see Ivana Kyzourová, *Svatovítský: Katalog stálé výstavy v kapli sv. Kříže na Pražském hradě* (Praha: Správa Pražského hradu, 2012), 37, no. 5.

**149** See, for example, a spectacular Bohemian monstrosity from around 1600 in which a concentric disc of ringed jasper provides the ground against which the host was displayed: Kyzourová, *Svatovítský: Katalog*, 111, no. 73.

**150** For examples, see Georges Didi-Huberman, *Fra Angelico: Dissemblance and Figuration* (Chicago: University of Chicago Press, 1995), 91–98; Jean-Claude Bonne, “Entre l’image et la matière: La choséité du sacré en Occident,” in Jean-Marie Sansterre and Jean-Claude Schmitt, eds., *Les images dans les sociétés médiévales, pour une histoire comparée*, special issue of *Bulletin de l’Institut Historique belge de Rome* 69 (1999): 77–111, esp. 101–2. See also J. C. Plumpe, “Vivum Saxum, Vivum Lapides: The Concept of ‘Living Stone’ in Classical and Christian Antiquity,” *Traditio* 1 (1943): 1–14.

**151** After Adolf Loos, “Hands Off! (1917),” in *Sämtliche Schriften*, 1:346. See also van Duzer and Kleinman, *Villa Müller*, 53. And, more generally, Thomas Raff, *Die Sprache der Materien: Anleitung zu einer Ikonologie der Werkstoffe* (Berlin: Waxmann, 2008), 38–44.

**152** After Le Corbusier, *L’art décoratif d’aujourd’hui* (Paris: Flammarion, 1996), 99. The translation given here differs slightly from that in Atak, “Abstraction’s Economy,” 155. See also Stanislaus von Moos, “Le Corbusier and Loos,” *Assemblage* 4 (1987): 24–37.

**153** Arthur Rüegg, *Le Corbusier: Möbel und interieurs, 1905–1965* (Zurich: Scheidegger & Spiess, 2015), 153–54. I am grateful to Barbara Reisinger for this reference.

**154** Trilling, “Modernism and the Rejection of Ornament,” 93, 98. On the analogy with abstract painting, see also Baltrušaitis, *Aberration*, 99.

**155** As Trilling notes, “It goes without saying that Loos never explicitly calls his wood or marble facings ornament. That would have given the game away”: Trilling, “Modernism and the Rejection of Ornament,” 100.