Communicating Power in the *Bīt-Ḫilāni* Palace

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Little is known about how the Syro-Anatolian kingdoms of the Mediterranean and Near Eastern Iron Age (ca. 1200–720 B.C.E.) operated politically. This paper examines the nature and extent of royal political authority in one such kingdom, the city-state known as Patina, and its capital city of Kunulua. Political power in Patina is studied through space syntax analysis of Kunulua's bīt-ḫilāni *palace, and through interpretation of the iconography that was used to portray palace furniture. Historical inscriptions and works of art made in the neighboring Assyrian Empire, with whom the Syro-Anatolian city-states had a great deal of cultural and political interaction, provide the bulk of our information regarding the visual makeup of the accoutrements within the* bīt-ḫilāni. *The architectural form of Kunulua's palace, and the furniture and objects that populated it, are shown to have been conceived together as a coherent and totalizing message emphasizing the legitimacy and power of the king.*

INTRODUCTION

During the first centuries of the first millennium B.C.E., the northeast corner of the Mediterranean Sea was surrounded by a collection of small kingdoms that stretched from southern Cappadocia to the northern Levant, and from Cilicia to the Jazira. These city-states, which I refer to as Syro-Anatolian,[1] were perpetually plagued by the military and political dominance of the Assyrian Empire on the Tigris River to the east, whose capital cities of Nimrud, Khorsabad, and Nineveh provide us with vivid textual and visual evidence for the interaction of the two cultures (fig. 1). Despite the large amount of historical information, as well as over a century of archaeological excavation in the area, the political processes that characterized Syro-Anatolian mechanics of state remain opaque and understudied. This paper investigates the expression of political authority in the Syro-Anatolian built environment by analyzing the *bīt-ḫilāni* palace at Tell Tayinat, the archaeological site that was the Iron Age city of Kunulua, capital of the Syro-Anatolian kingdom of Patina (ca. 900–738 B.C.E.).

Bīt-ḫilāni palaces, or large structures with broad horizontal plans and columned portico entrances atop a wide but low-lying flight of stairs (Frankfort 1970: 282), are characterized by a similarity of morphological attributes that has led scholars to treat them as a single entity, rarely examining any single palace on its own

[1] Occasionally the dominant language of a kingdom's historical inscriptions, Luwian or Aramaic, is given as the ethnic appellation of the kingdoms (e.g., Lipiński 2000; Mazzoni 1994; Melchert 2003; Sader 2000; Schniedewind 2002). Other terms in vogue include "Neo-Hittite" (German *Späthetitische*) (e.g., Giusfredi 2010; Hawkins 1982; Orthmann 1971; Thuesen 2002), or, most commonly, "Syro-Hittite" (e.g., Bonatz 2000; Gilibert 2011; Mazzoni 1997; Pucci 2008; Ussishkin 1970). The expression "Syro-Anatolian," by contrast, keeps the terminology geographical in nature, without making any presuppositions about ethnic composition or historical affiliations.

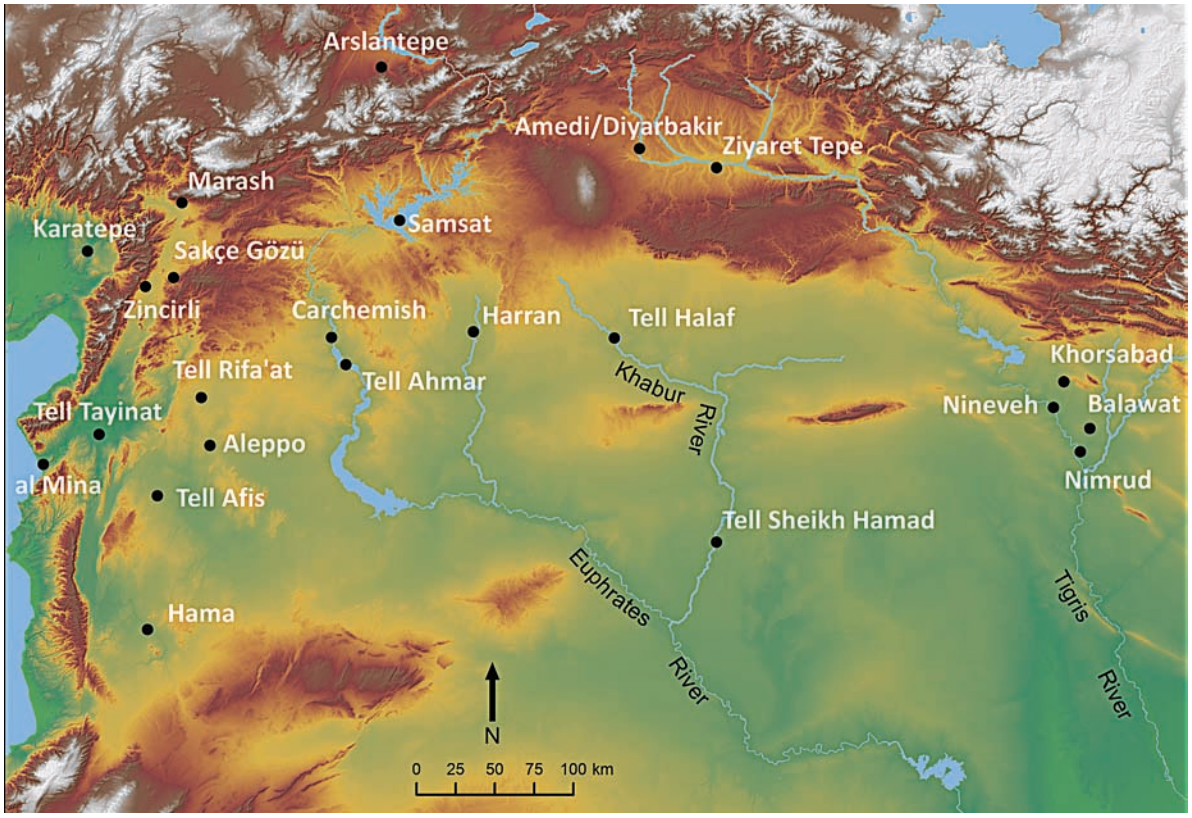

Fig. 1. Important Syro-Anatolian and Neo-Assyrian sites of the early first millennium (ca. 1000–720 B.C.E.). Map by the author.

terms to evaluate the specific role it played in its city or kingdom. Although a great many significant studies have been written about this type of building, these efforts have concentrated on the chronological and geographical origins of the building, the etymology of its putative appellation, or the determination of which archaeologically attested buildings or features of buildings belong in this architectural category (Börker-Klähn 1980; Bossert 1961; Frankfort 1952; Friedrich 1902; Fritz 1983; Halpern 1988: 47–49; Lehmann and Killebrew 2010; Margueron 1979; Meissner 1942; Meissner and Rost 1893; Naumann 1971; Novák 2004; Novák and Schmid 2010; Renger and Hrouda 1972–1975; Sharon and Zarzecki-Peleg 2006; Ussishkin 1966; Wachtsmuth 1958; Weidhaas 1939; Winter 1982; Wright 1985: 139).

Despite this long-standing intellectual history, few studies exist with the goal of understanding the *bīt-ḫilāni* in operational terms—how it was used by its inhabitants and its visitors, the functions of particular rooms, and the symbolic meaning of the building in the social and political life of the Syro-Anatolian city-state (for an exception, see Pucci 2008). This study begins to redress this lacuna in Near Eastern scholarship by examining the *bīt-ḫilāni* in its textual and visual context and by performing a series of formal analyses known as space syntax, borrowed and adapted from architectural method and theory, on the *bīt-ḫilāni* palace at Tell Tayinat. The results illustrate the integral role played by the visual properties of architectural layout and palace furniture, and the throne in particular, in the discourse of political authority in the Syro-Anatolian culture. The importance of the *bīt-ḫilāni* as a cumulative symbol whose role was to communicate political power is manifest in texts and imagery, but also in the configuration of space within the palace. The interpretations and analyses presented here suggest that when a building is deliberately constructed to convey power, it ensures that the message of authority is not lost on the visitor by signaling that authority in multifarious ways—in the layout of the rooms, in the furniture, in the decorative accoutrements, and in the

bodily presence of the authoritative figure—such that political power circulates throughout every aspect of the building.

ARCHITECTURE AND POWER: THE INTEGRATIVE APPROACH

In a review of theoretical approaches to architecture, Lawrence and Low (1990) divide scholarly treatments of the built environment into four broad thematic categories: social organization, symbolic approaches, psychological approaches, and social (re)production. The approach adopted here belongs roughly to Lawrence and Low's categories of symbolism and social (re)production. Symbolic approaches see the built environment as "an expression of culturally shared mental structures and processes . . . [buildings] play a communicative role embodying and conveying meaning between groups, or individuals within groups" (Lawrence and Low 1990: 466). The intellectual indebtedness to structuralism is clear, and when it became apparent that structuralism needed to be populated with actual human agents in order to present a full account of social life, approaches to architecture that fit in the category of "social (re)production" came to be prominent (Lawrence and Low 1990: 482–90). Within this framework, scholars turned to the likes of Foucault (1995), Giddens (1984), and Bourdieu (1977), who sought to understand the dialectical relationship between social structure as created by the built environment and the built environment as created by the agency of individuals. Moore, for example, argues that architectural historians have typically concentrated on only one side of the dialectic, treating architecture as a passive reflection of social structure (1996: 14). Such attitudes neglect architecture's capacity not just to *reflect* structure but also to *generate* it through people's usage.

It follows that one must adopt a methodology that incorporates not just the quantitative characteristics of a building but also its qualitative, symbolic aspects determined by the building's social context. Fisher (2009) has recently argued for an *integrative approach* to the built environment, combining formal analysis, on the one hand, with consideration of architecture's tendency to perform "nonverbal communication," on the other. Nonverbal communication refers to architecture's ability to communicate meaning to inhabitants and visitors (Rapoport 1990). Buildings accomplish this communication because "the environment acts on behavior by providing cues whereby people judge or interpret the social context or situation and act accordingly" (1990: 57). In a further passage, Rapoport writes, "environments are more than just inhibiting, facilitating, or even catalytic. They not only remind, they also predict and prescribe. They actually *guide responses*, that is, they make certain responses more likely by limiting and restricting the range of likely and possible responses" (1990: 77, emphasis in original). According to Rapoport, architecture communicates meaning through the deployment of *fixed-feature elements*, features that are permanent and unmoving like walls and stairs; *semi-fixed feature elements*, including furniture, curtains, plants, and so on; and *non-fixed feature elements*, meaning the behavior of humans in space (1990: 87–96).

This is a helpful way to conceptualize architecture, since it is appealingly intuitive. It is not difficult to apply this approach even in our daily lives, when we consider the architectural cues that help guide us toward appropriate behavior in settings like religious buildings, for example. Yet one wonders how integrating fixed and semi-fixed features of a building into a quantitative analysis of that building contributes to our understanding of that building's meaning if there is little or no direct information from the ancient builders and inhabitants themselves. Such information would be found primarily in the textual and art historical record. For this reason, although I support the incorporation of architectural *realia* into otherwise abstract architectural analyses, I propose a modification of Fisher's "integrative approach," preferring to add the integration of textual and artistic data, on the one hand, with both architectural quantification and the communicative properties of architectural *realia*, on the other. The present analysis moves from the former to the latter and concludes by integrating both approaches into a unified interpretation of the expression of political authority in the *bīt-ḫilāni*.

THE *BĪT-ḪILĀNI* IN HISTORICAL AND ICONOGRAPHICAL CONTEXT

Syro-Anatolian Palaces and Palace Accoutrements in the Assyrian Sources

For over a century, scholars have debated the *bīt-ḫilāni* structure mentioned in the annals of Neo-Assyrian kings from Tiglath-pileser III (r. 745–727 B.C.E.) through the reign of Ashurbanipal (r. 668–627 B.C.E.); already in 1893, Meissner and Rost titled their book

on the subject *Noch Einmal das bît ḫillâni*) Meissner and Rost 1893). A number of descriptive glosses accompany the Assyrian usage in various texts (*CAD* Ḫ: 184–85). The most common descriptor, for example, is that preserved in one of Tiglath-pileser III's summary inscriptions, which records, in line 18 of the tablet's reverse side, that the king built a *bīt-ḫilāni* "*tamšil ekal māt Hatti*," which Tadmor and Yamada translate as "a replica of a palace of the land of Hatti" (Tadmor and Yamada 2011: RINAP 1, Tiglath-pileser III 47, rev. 18).[2] This recurring clause contains what is perhaps the one aspect of the *bīt-ḫilāni* that is generally agreed upon by all scholars: that "Hatti" in the Neo-Assyrian period refers to the geographical area of the Syro-Anatolian city-states—that is, north Syria and southeastern Anatolia (Novák 2004: 335, n. 2). The Display Inscription of Sargon II is even more explicit, referring to the building under construction as a *bīt-appāti*, "the exact copy of a palace from the land of Ḫatti, which is called *bīt-ḫilāni* in the language of the land of the Amorites" (Fuchs 1994: 239, 353, translated from German by the author). From this passage, we learn that "*bīt-ḫilāni*" is not, in fact, a term native to Akkadian, but rather, by virtue of being described as deriving from the "land of the Amorites," is an expression that derives from north Syria. Sargon goes on to elaborate on the appearance of the building, describing four double-lion column bases to support cedar columns, and the *lamassu* portal guardians and orthostats he added to depict his military victories (Fuchs 1994: 239–40, 353–54; Winter 1982: 358). It would appear from Sargon's description that the *bīt-ḫilāni* is possibly part of a larger palace complex, not necessarily an independent structure (Winter 1982: 358).[3]

What seems incontrovertible from all of these passages is that the *bīt-ḫilāni* was (1) developed in the geographical area of the Syro-Anatolian city-states, (2) adopted from them by the Assyrians at least as early as the mid-eighth century (the lack of earlier textual references does not preclude the possibility of earlier architectural borrowings), (3) characterized at least in part by the presence of columns atop column bases, and (4) considered by the visiting Assyrians to be a palace (*ekal*), suggesting strongly that the Syro-Anatolian *bīt-ḫilāni* was used for administrative purposes and likely as the residence of the king. (At sites where more than one *bīt-ḫilāni* has been found, presumably only one was used as the royal residence, while all were used for administrative purposes.) The controversies begin as one moves away from the Assyrian royal annals into extrapolations designed to augment our knowledge of Assyrian and Syro-Anatolian cultural and political interaction. Problems associated with these extrapolations include the etymology and meaning of the construct phrase *bīt-ḫilāni*, the identification of the *bīt-ḫilāni* in the reliefs decorating Assyrian palaces, the identification of the *bīt-ḫilāni* in the archaeological record of Assyria, and finally, the identification of the *bīt-ḫilāni* in the archaeological record of the Syro-Anatolian capital cities.

In the context of this study, perhaps more important than etymological origins is the identification of the *bīt-ḫilāni* in the architectural record of the Neo-Assyrian and Syro-Anatolian capital cities. The presence of columns and porticos in the Neo-Assyrian *bīt-ḫilāni* as described in the annals would appear to be a reasonable place to begin a search in Assyrian architectural plans. Yet such a search does not take one very far: there is a pair of columns at one end of the lengthy Room XLIX (O) in Sennacherib's Southwest Palace at Nineveh (Barnett, Bleibtreu, and Turner 1998: pls. 6, 15; Paterson 1915), the unorthodox entrance to Ashurbanipal's North Palace through Room S, also at Nineveh (Barnett 1976: fig. 7), Palace F in the lower town at Khorsabad (Loud and Altman 1938: 75–77, pls. 41, 75), and possibly a portico entrance to Esarhaddon's Southwest Palace at Nimrud (Barnett and Falkner 1962).

Such scant archaeological evidence did not deter pioneering Assyriologists of the 19th century. Having found a building at Khorsabad, Palace F, that fit the bill sufficiently to inspire comparisons elsewhere (Puchstein 1892), the excavators of Zincirli, a site appropriately located in the "land of Hatti," then applied the expression to the several buildings with columned porticos that they discovered there (Luschan, Humann, and Koldewey 1898). From that time since, Syro-Anatolian structures that looked like the Zincirli buildings were likewise referred to as *bīt-ḫilāni*s. In other words, as Lehmann and Killebrew have recently reminded us, there are three kinds of *bīt-ḫilāni*s in the scholarly imagination: one as described in the Assyrian texts, another as identified in eighth- and seventh-

[2] Tadmor translated the phrase originally as "modeled after a palace of the land of Hatti" (2008: 172–73).

[3] However, it seems less likely that the columns as described in Sargon's Display Inscription were conceptually part of the larger palace instead of the *bīt-ḫilāni* specifically (Winter 1982: 358). The bronze column bases are described immediately following the mention of the *bīt-ḫilāni*, and, as Winter notes, a letter to Sargon specifically refers to the preparation of column bases beneath the columns of the *ḫilāni* (1982: n. 24).

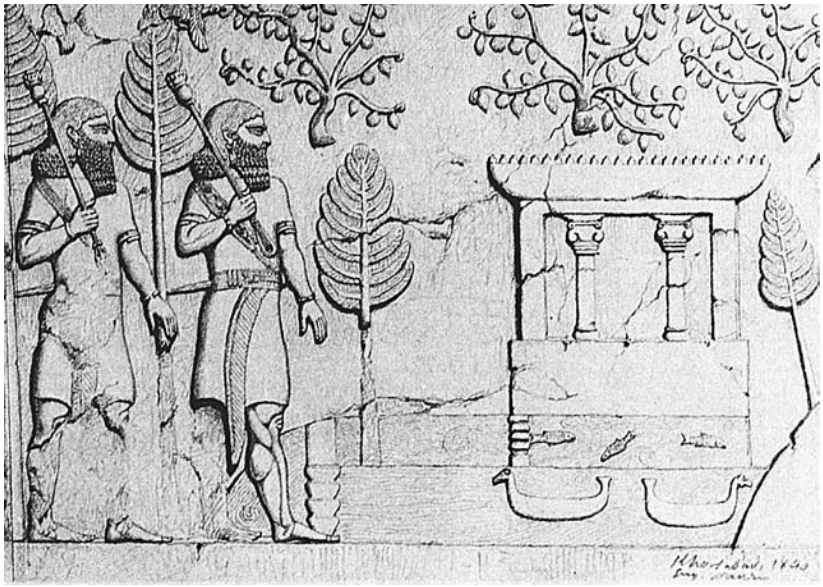

Fig. 2. Khorsabad, Room 7, Slab 12 (Albenda 1986: pl. 89). Drawing courtesy of Pauline Albenda.

century B.C.E. Assyrian palaces, based on those texts; and still another identified in ninth- to eighth-century B.C.E. buildings in southeastern Turkey and northern Syria, elements of which resemble what may be considered the defining features of the *bīt-ḫilāni* in Assyrian architecture—again as based on the Assyrian texts (2010: 24).

Closely related to the search for features of the *bīt-ḫilāni* in the Neo-Assyrian texts and in the architectural plans of the Neo-Assyrian palaces is the quest to identify the building type among the multifarious buildings depicted by Assyrian sculptors in the corpus of orthostat reliefs that lined the walls of Assyrian royal palaces. One particular building that appears in late eighth- and seventh-century reliefs that tends to get singled out in discussions of the *bīt-ḫilāni* is the modestly sized, freestanding structure clearly visible in two scenes (figs. 2, 3), one belonging to Sargon II (Albenda 1986: pl. 89; Loud 1936: pl. 83) and one to Ashburbanipal (Barnett 1976: pl. 23).[4] The example from the reign of Sargon II was located in the corner of the curiously isolated Room 7 of the palace at Khorsabad. This room was decorated with reliefs depicting a hunting scene which Irene Winter has suggested is located in the landscape of the Amanus as described in Sargon's Display Inscription (1982: 362). The building—sometimes called a pavilion, sometimes a kiosk—is clearly a building with a portico facade, and hence the *bīt-ḫilāni* association (e.g., Weidhaas 1939: 142).

Fig. 3. Nineveh, North Palace, Room H, Slabs 8–9 (Barnett 1976: pl. 23). Image courtesy of the British Museum.

The temptation to see in these illustrations a depiction of the *bīt-ḫilāni* is strong indeed, especially

[4] A third, more fragmentary example also exists from Room XXII of Sennacherib's Southwest Palace at Nineveh but is less discussed by scholars, presumably on account of its poor preservation (Barnett, Bleibtreu, and Turner 1998: pl. 224; Layard 1853: 232; Novák 2004: Abb. 16; Reade 1998–2001: fig. 6).

because of the undeniable presence of columns and column bases. But if we are to assign an archaeologically attested structure to these depictions at all, then there is a more suitable candidate—namely, the small temple *in antis* (Mazzoni 2010), sometimes referred to as a *megaron* (e.g., Harrison 2009b: 176). When we compare the porticoes attested in figures 2 and 3 with those of the temples excavated at ʿAin Dara and Tayinat, for example, the resemblance is clear (Abou Assaf 1996; Harrison 2009b; Harrison and Osborne 2012). It might be objected that the example from Ashurbanipal's North Palace appears to have four columns, not two, by virtue of the four clearly visible capitals. But the lack of column bases supporting the two outer "columns" speaks against this. These elements must not be columns but, rather, conventional endings, or *antae*, of extended long walls. One can then understand their palmette "capitals" as decorative embellishments, not capitals per se—embellishment that could have been effected through wood or even painted plaster.

If we unlink the association of the *bīt-ḫilāni* and the pavilion structure portrayed in Assyrian palace reliefs, however, we are left without any viable candidate for an artistic representation of the Syro-Anatolian palace. This suggests that another avenue must be explored if we are to take meaningful information about Syro-Anatolian palaces from Assyrian art. We know from the annals of Assyrian kings—Ashurnasirpal II and his son Shalmaneser III, especially—that the Assyrians received vast quantities of tribute from their Syro-Anatolian neighbors to the west. Such tribute could take the form of either raw goods—textiles, metals, livestock—or finished artistic projects. For example, Ashurnasirpal II pronounced that he received the following from Lubarna, king of Patina, around the year 870 B.C.E.:

> 20 talents of silver, one talent of gold, 100 talents of tin, 100 talents of iron, 1,000 oxen, 10,000 sheep, 1,000 linen garments with multi-coloured trim, decorated couches of boxwood with trimming, beds of boxwood, decorated beds with trimming, many dishes of ivory (and) boxwood, many ornaments from his palace the weight of which could not be determined, 10 female singers, his brother's daughter with her rich dowry, a large female monkey, (and) ducks. (Grayson 1991: RIMA 2, A.0.101.1, iii 71–77)

This list of payments from subject to suzerain includes specific items of Syro-Anatolian origin that we might expect to find in ostentatious Assyrian displays of received tribute, both in their reliefs and as material objects in the ground. In the tribute just cited, particularly intriguing is the inclusion of several items of furniture—couches, beds, boxes, dishes—and, with regard to the *bīt-ḫilāni*, the "many ornaments from his palace the weight of which could not be determined."[5] It follows that in order to take our understanding of the Syro-Anatolian palace forward, the Assyrian iconography to be examined is not that of architecture, but of furniture and other portable objects taken from those palaces. Some of the most elaborate components of Neo-Assyrian palace reliefs are the depictions of pieces of royal furniture. These are seen in many cases being used by the king while attentive on campaign, but also while relaxing in the tranquility of home. Items of furniture are also attested in the arms of palace attendees as they prepare for a royal event, as well as in the train of Assyrian soldiers presenting their booty from a vanquished city.

One motif that occurs repeatedly throughout palatial reliefs, at least from the time of Tiglath-pileser III and then consistently down through the reign of Ashurbanipal, is a visual emphasis on the throne. Of course, by virtue of the unavoidable physical association, the throne receives pride of place when occupied by the king. And yet it seems the throne occupies a special place in the imagination of Assyrian artists even when not occupied.[6] The elaborateness of the Neo-Assyrian

[5] Akkadian: ḪI.A.MEŠ *ú-nu-ut* É.GAL-*šú* ḪI.A.MEŠ *šá* KI.LÁ-*šá la-a ṣab-ta-at*. The sense of the expression "undeterminable weight" is more likely referring to the fact that the collection of "ornaments" was, by virtue of the irregular shapes of chairs, stools, and so on, too inconvenient to be weighed according to the standard system of minas and talents, not to the fact that the ornaments cumulatively weighed more than could physically be measured.

[6] A curious example of this phenomenon is attested in a relief belonging to Tiglath-pileser III, unfortunately now lost and known only through an unsatisfactory sketch a century and a half old. Nevertheless, the content is reasonably clear: the scene is the royal military tent; atop it stands a lioness(?), possibly as some kind of standard; within it rests the royal throne, devoid of occupant, yet with a figure kneeling before it all the same (Barnett and Falkner 1962: pl. 53). Assuming the relief was drawn with reasonable accuracy when it was discovered, what are we to make of this enigmatic scene? It is tempting to see it as Barnett and Falkner label it in their caption below the illustration: "Assyrian officers doing reverence to the king's empty throne and tent" (1962: pl. 53). In the commentary to this scene, Barnett says we see here "royal officials doing obeisance to the empty throne of their absent master, no doubt making their report to him, as the king himself does to his god after battle" (Barnett and Falkner 1962: xxiii). On its own, these statements might seem a stretch, given the lack of clarity in the drawing. But in the larger context of Assyrian palace relief iconography, it is not overly surprising to see the throne itself being the object of reverence, a material equivalent to the body of the king, as Barnett proposes.

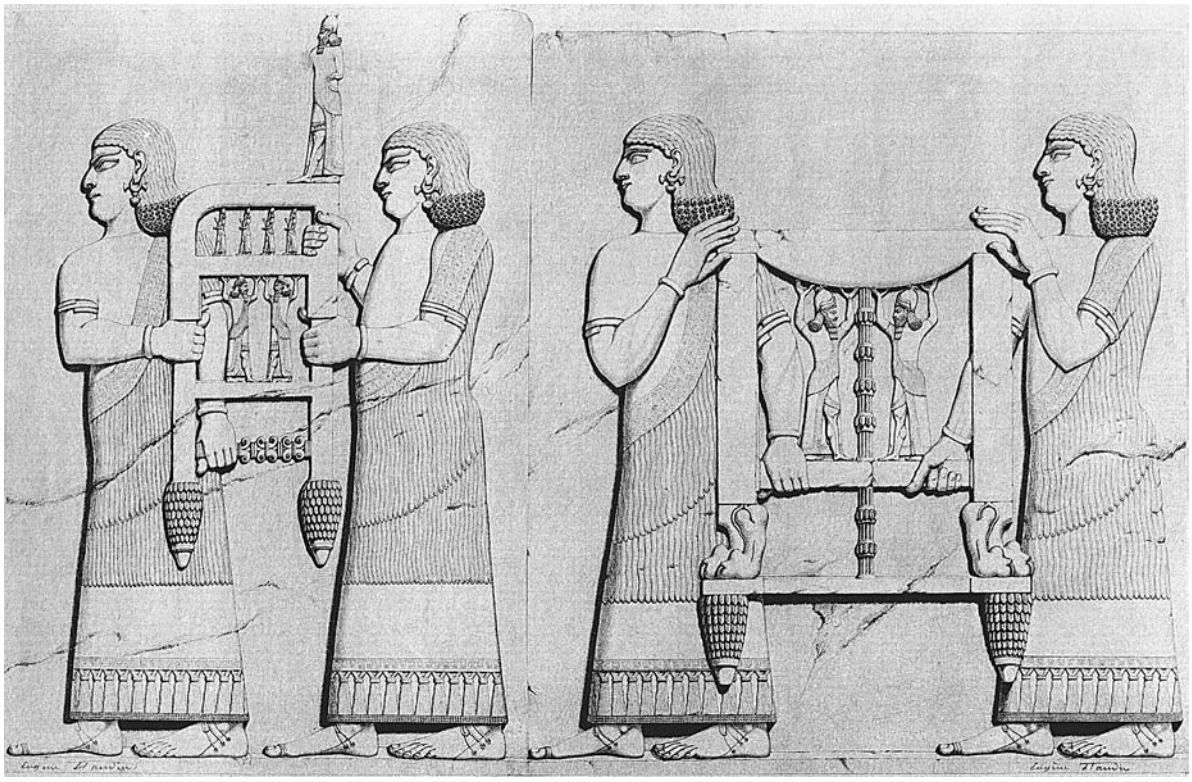

Fig. 4. Khorsabad, Facade L, Slabs 28–29 (Albenda 1986: pl. 48). Drawing courtesy of Pauline Albenda.

throne and its accompanying pieces—chariot-thrones, tables, footstools—is exemplified in the reliefs that lined facade L of Sargon II's palace at Khorsabad, the large west face of the palace's northern extrusion (Albenda 1986: pl. 12). Flandin's meticulous drawings of these orthostats show the intricate detail carved into these pieces of furniture, here shown being carried by Assyrian court attendants (fig. 4). It is also apparent that these pieces are precious objects: their reliefs received lavish attention, large scale, and a high-profile location in the palace suite.

Less clear is their place of origin. The simple proposal would be that Assyrian royal furniture was made in Assyria, and perhaps this was so in some instances. In the palace of Sennacherib at Nineveh, however, there are numerous scenes of furniture, including thrones, being carried by Assyrian soldiers away from conquered cities and toward the king for the presentation of booty. One particularly intriguing case is offered in figures 5–7, which show furniture-carrying soldiers emerging from a sacked city and passing through landscape features en route to presenting their goods before Sennacherib (Barnett, Bleibtreu, and Turner 1998: pls. 404–13).[7] That the defeated city is western is indicated not only by the lush wooded environment so often mentioned by Assyrian kings in their descriptions of northwestern Syria, but also by the presence of Phoenician-style balustrades on the windows of the buildings' second stories. Leaving aside the potential significance of these columned windows to the discussions surrounding the *bīt-ḫilāni*, such Levantine windows place the city, and thus also the furniture being removed, reliably in the Syro-Anatolian region (Harden 1962: 124–25).

This being the case, one wonders whether the location of this scene in Sennacherib's palace—the small Room XLVIII (M) at one end of the long hall Room XLIX (O), and immediately behind two large, and

[7] The wooded landscape here is evocative of the reliefs in Room 7 at Khorsabad, where we saw the representation of a Syro-Anatolian temple *in antis*—and perhaps it is worth noting that the upper register of the Room 7 reliefs, unfortunately very poorly preserved, show the bottoms of several pieces of furniture like those under discussion.

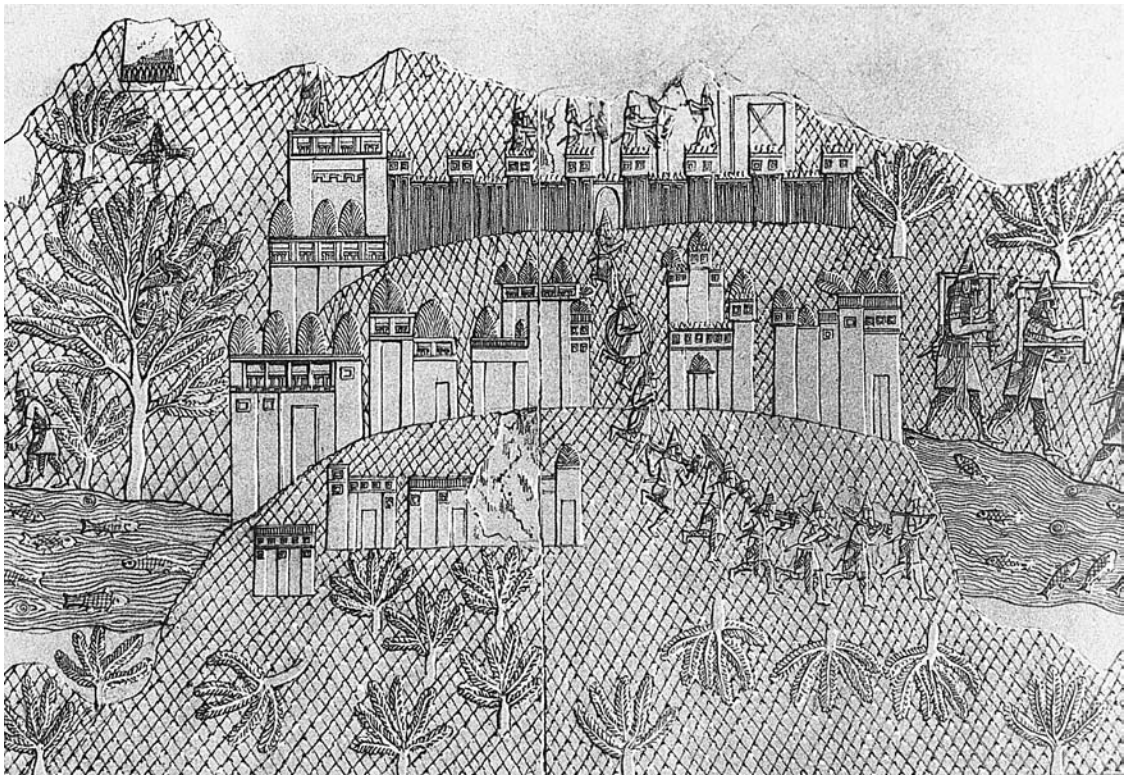

Fig. 5. Nineveh, Southwest Palace, Room XLVIII (M), Slabs 11–12 (Barnett, Bleibtreu, and Turner 1998: pl. 410). Drawing courtesy of the British Museum.

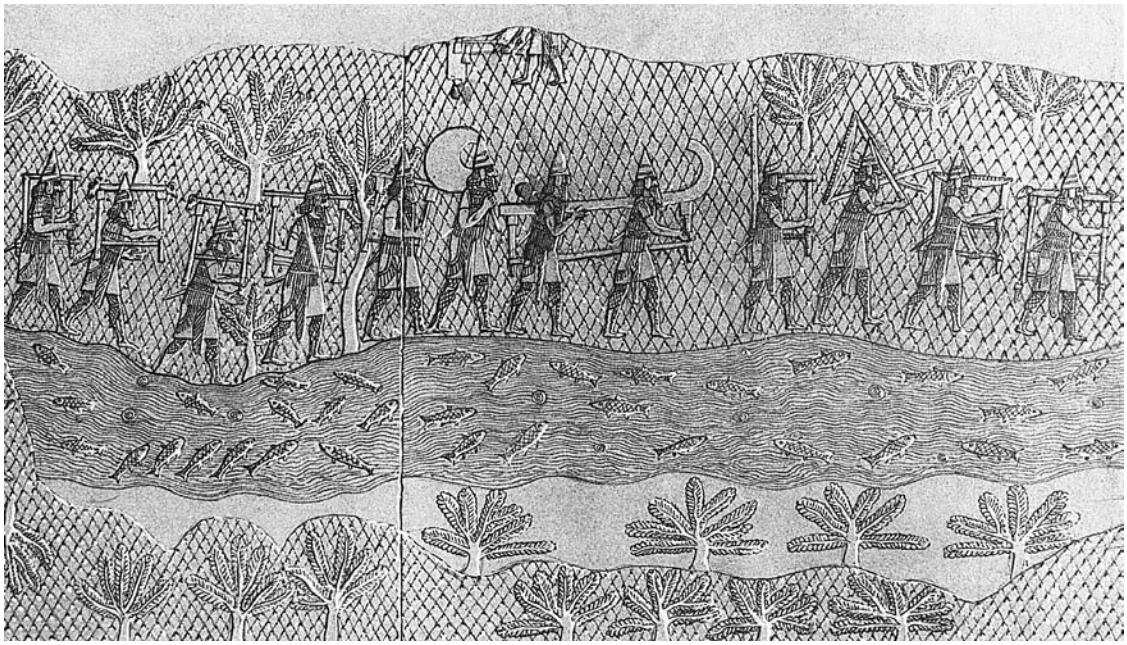

Fig. 6. Nineveh, Southwest Palace, Room XLVIII (M), Slabs 12–13 (Barnett, Bleibtreu, and Turner 1998: pl. 411). Drawing courtesy of the British Museum.

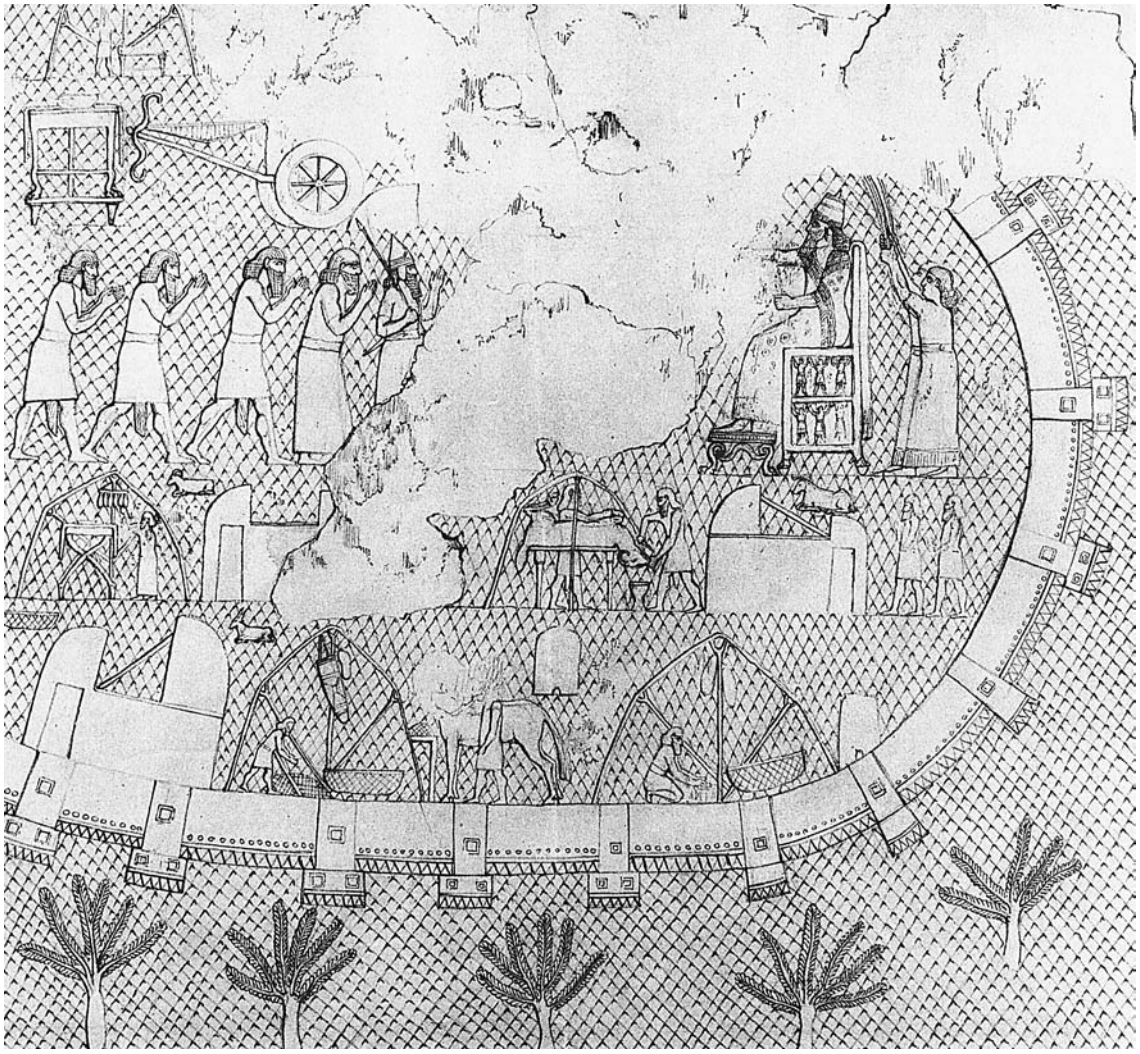

Fig. 7. Nineveh, Southwest Palace, Room XLVIII (M), Slab 20 (Barnett, Bleibtreu, and Turner 1998: pl. 412). Drawing courtesy of the British Museum.

functionally superfluous, columns—is an ironic coincidence, or a conscious combination of a western relief scene in a space accented with western-style columns (fig. 8). Either way, the scene ends with the king in his military camp, using and surrounded by the furniture carried toward him in the previous slabs. This scene would thus appear to confirm that Neo-Assyrian kings did not desire these objects merely for the sake of accumulating wealth and prestige but actually put western royal furniture to use themselves (Winter 1982: 355).

The clearest examples of this phenomenon are in that most famous of Neo-Assyrian reliefs, Ashurbanipal's garden scene from the North Palace, in particular slabs B and C from Room S[1] (Barnett 1976: pl. 45). Much like Room XLVIII (M) of the Southwest Palace, this room is characterized by the architectural feature of two columns at its entrance (Albenda 1976: 49–53; 1977). Slabs B and C show the king in repose, lounging on a couch with a curved back while his wife Aššuršarrat sits beside him. Both are being fanned by a pair of attendants. The number of western elements in the material culture shown in this scene is strikingly numerous (fig. 9). For instance, there is Aššuršarrat's *Mauerkrone* (Calmeyer 1987–1990), which is best interpreted as a representation of a city, and which possibly originated in north Syria, based on similar crowns being presented to Assyrian rulers among booty from western cities (Osborne 2011: 309–12). To this can be

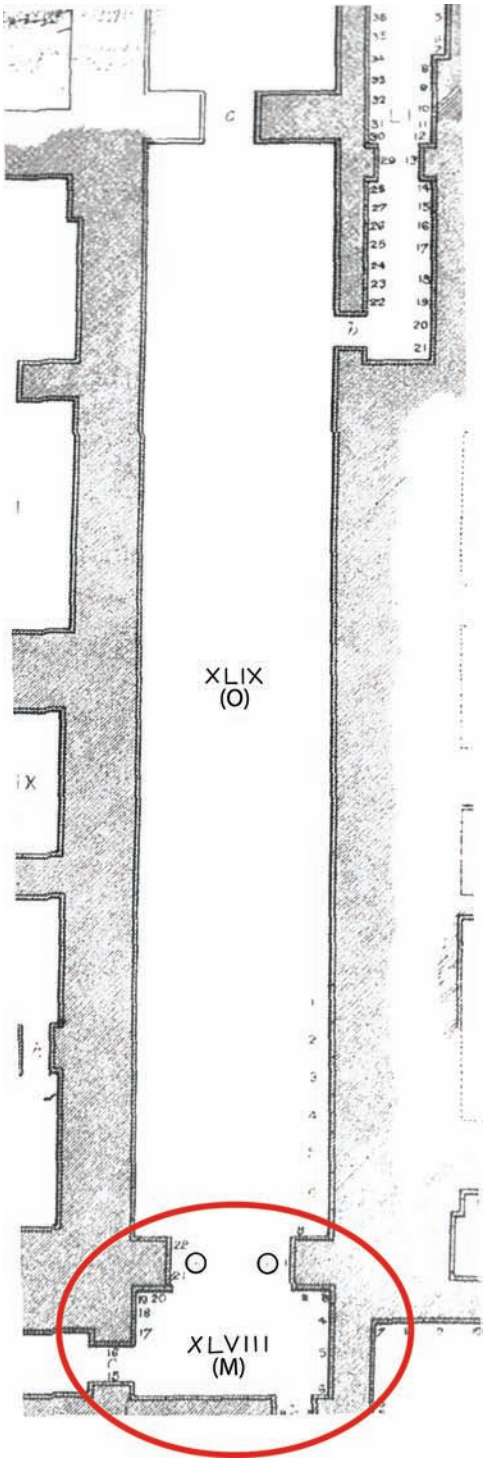

Fig. 8. Nineveh, Southwest Palace, Room XLVIII (M) (circled) and the columned Long Room XLIX (0) (adapted by the author from Barnett, Bleibtreu and Turner 1998: pl. 10). Base drawing courtesy of the British Museum.

added the lotus blossom held in Ashurbanipal's left hand, which parallels the Kilamuwa stela of Zincirli and the Ahiram sarcophagus (Orthmann 1971: pls. 63:c, 66:b, c, 67:d, Winter 1982: 366), the tripod bowl resting on the table (cf. Tell Halaf: Hrouda 1962: Taf. 58:65; Al Mina VIII: G. Lehmann 2005: fig. 3:4), the pyxis beside it carved with two *lamassu* figures (Albenda 1976: 63–64; Mazzoni 2001; cf. Zincirli: Struble and Herrmann 2009: fig. 8), and the gadroon, or fluted, bowl in Aššuršarrat's right hand (cf. Tell Halaf: Hrouda 1962: Taf. 47:2, 48:3, 16; Hama: Riis and Buhl 1990: fig. 57:395; Zincirli: Struble and Herrmann 2009: fig. 5; Luschan and Andrae 1943: Taf. 25:h–i, 53:c). Finally, there is the furniture itself: Ashurbanipal's couch, Aššuršarrat's chair and footstool, and both the main round table as well as a secondary square table bearing Ashurbanipal's bow and quiver, all resemble furniture in other Neo-Assyrian reliefs, including those from Sennacherib's palace depicting furniture being carted from a western city. The western character of the furniture is emphasized by the engraved ivory plaques at the top of the couch's legs. These plaques, a western decorative fixture especially prized by the Neo-Assyrian kings (Herrmann 1986; Winter 1973; 1976), contain the Syrian "woman-at-the-window" motif (Curtis and Reade 1995: 123).

This entire scene, in other words, is loaded with the material objects from Syro-Anatolian city-states, visual references that were surely not lost on visitors to the North Palace who entered the building through this room. When one adds the two large columns in the doorway and the very similar table in the libation scene from Room S proper, depicting Ashurbanipal pouring water that flows in a guilloche pattern[8] over four defeated lions, then the question is raised whether this entire room, like Room XLVIII (M) in Sennacherib's palace, was deliberately designed as a western-style unit, reminding visitors which culture had the upper hand in the imbalanced power relations between east and west.

The ivory plaques adorning the legs of Ashurbanipal's couch have two clear registers: the top is divided

[8] The guilloche pattern is ubiquitous in western carved ivories found in Nimrud and elsewhere in Assyria; it is also present in Syro-Anatolian reliefs, lining the bottom of the orthostats of the Long Wall at Carchemish, for example, and engraved in the low "rails" beside the stairs into the temple at ʿAin Dara (Crawford 2009). The guilloche is present in other media as well, appearing in the middle register of column bases such as those in the portico of Building I at Tayinat and Building K at Zincirli, and in the brick altar before Kapara's *bīt-ḫilāni* at Tell Halaf.

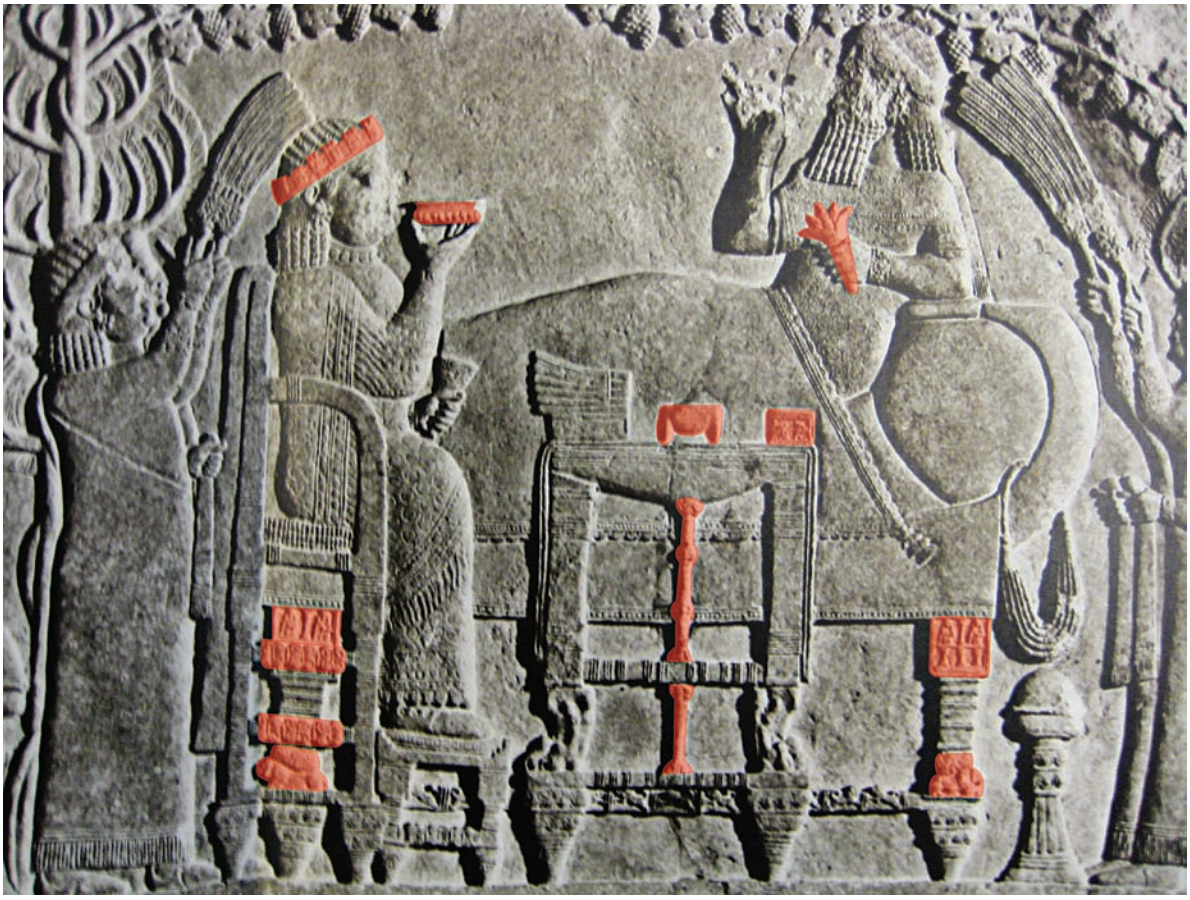

Fig. 9. Garden scene of Ashurbanipal, Nineveh, North Palace, Room S[1], Slabs B and C. Western objects shaded red. Table, couch, and chair not shaded for clarity (adapted from Barnett 1976: pl. 64). Image courtesy of the British Musuem.

into two spaces, each occupied by a figure, and the bottom is likewise divided, perhaps occupied by columns. Representations of columns in these small spaces would make sense, given that the legs of the couch (despite the leg under the king's feet being partially obscured by his wife's chair) extend downward and come to rest on what are clearly lion column bases. In this way, the royal—and, likely, western—couch and its occupant are both literally and metaphorically supported by columns and column bases not dissimilar from actual architectural features found in excavation. This pattern of royal furniture elements mimicking architectural features is also present in the throne on which Aššuršarrat sits (Curtis and Reade 1995: 123). The crossbars underneath the seat are composed of three pairs of palmettes, which are long-standing royal symbols of fertility in the Levant and which appear most prominently on the contemporary palmette capitals of that region (Shiloh 1979). Indeed, the thin central pole underneath the round table in front of her resembles an actual architectural column very closely, replete with column base and palmette capital. The only incongruous part about it is the apparent presence of several "capitals" up the length of the column; either this represents several columns stacked one on top of another, or it has a symbolic relevance that we cannot discern. That the table's central pole is a miniature column is made especially clear by its functional irrelevance, as the two neighboring legs on either side of it do the weight-bearing for the table. The central pole of the similar round table beside Ashurbanipal as he pours his libations to the dead lions in the relief mentioned above is even more stark in its architectural quality, culminating at its top with a blossoming lotus (Barnett 1976: pl. 59).

Figure 6 shows Assyrian soldiers in the time of Sennacherib carrying identical tables, as does figure 4, an image from Sargon's palace at Khorsabad. In the case

Fig. 10. Khorsabad, Facade L (adapted by the author from Albenda 1986: fig. 65). Image courtesy of Pauline Albenda.

of the latter, Flandin's drawing makes the architectural quality of the table's central column particularly apparent, although a photograph of the slab in question (now, unfortunately, in pieces) shows what Flandin's drawing does not: the palm leaves of the table's "capital" are very similar, if more schematic as a result of the small scale, to those of actual column bases in the Syro-Anatolian *bīt-ḫilāni*, including Zincirli Building K and Tell Tayinat Building I, the building under discussion in this paper (fig. 10) (Albenda 1986: fig. 65). Specifically, the top register of the Tayinat column bases shows detailed palm leaves in their familiar volute pattern but divided into metopes of roughly the same proportional size as the leaves depicted in Sargon's table (fig. 11).[9]

In short, the Neo-Assyrian kings made use of Syro-Anatolian royal furniture when it was captured as booty or surrendered as tribute. These very pieces of furniture are depicted in use in Assyrian palace reliefs and are at least partially composed of elements that imitate architectural features from the *bīt-ḫilāni* palace, in particular the column base, column, and

Fig. 11. Column base from *bīt-ḫilāni* palace Building I, portico, Tell Tayinat. Photograph courtesy of the Oriental Institute Museum.

capital. These recurring patterns bring all of these features—throne and other furniture, palace, and kingship—into a nexus of associations that would have been unmistakable to the palace visitor. This is an example of an isomorphism, in which a single pattern of meaning is manifested in multiple contexts—in this case, architecture and furniture. In the terminology of

[9] A set of four bronze palm capitals, each with 27 leaves, was found in Room AB of the Northwest Palace at Nimrud (Curtis and Reade 1995: 125, no. 85). With diameters of 15.5 cm, heights of 4.55 cm, and having been found as a set, it is likely that these pieces derive from a throne or another four-legged piece of furniture. It is also possible that the pieces were made in the Syro-Anatolian region, although this cannot be determined for certain.

Rapoport's nonverbal communication, the redundancy of the imagery that was at play in the Syro-Anatolian *bīt-ḫilāni*, as well as the imagery's manifestations in multiple media, would have played a strong part in evoking the suitable response from a visitor to the Syro-Anatolian palace, a response that was colored by the mutually reinforcing iconography of the furniture within the palace and of the palace itself, and that was intended to be an understanding of the all-encompassing nature of kingship as the natural order of things.

Syro-Anatolian Palaces and Palace Accoutrements in the Western Sources

The Luwian and Aramaic historical sources are all but silent regarding the specific nature of the Syro-Anatolian palace. The king did not leave annalistic accounts of his exploits and only rarely mentioned any building activity directly (for example, Katuwas, king of Carchemish, referring to his building activity involving the King's Gate in his door jamb of the same). Likewise, Syro-Anatolian programs of bas-relief do not approach the narrative complexity achieved in Assyria already by the time of Ashurnasirpal II, and there are no portraits of buildings in the reliefs of any Syro-Anatolian city (Orthmann 1971: Taf. 1–76).

This comparative silence regarding specifics of palace construction and layout on the part of Syro-Anatolian texts and reliefs does not mean that there is nothing about architecture to be gained from that material. It does suggest, however, that we have to approach it in a slightly different way. Like the Assyrian reliefs, we gain valuable indirect information about the palace through oblique references to activities and objects within it. Such references will not inform us about the nature of the building in a design sense—such as whether or not there were two stories, or what the function of each individual room was—but they can nevertheless tell us about some of the conceptions of space that were in play when the palace was created and the perceptions of space that were enacted when it was experienced by occupants and visitors.

The textual material from the Syro-Anatolian city-states, whether in Luwian, Aramaic, or Phoenician, presents a scenario very similar to the presence of western royal furniture in the Neo-Assyrian reliefs: an explicit association of the king—or, rather, of kingship—with the physical object of the throne. This trope has received little attention, perhaps because in modern English there is a common metaphor equating "sitting" with "ruling," an association that seems deceptively self-evident in the past and thus not requiring any further probing. Perhaps this metaphor *was* in play then the way that we use it today, as it seems to have been long before the Iron Age (Winter 1993: 27). Nevertheless, we have to consider the possibility that the connection of kingship and throne in the Iron Age was also a real relationship that depended on the existence of the material throne to be effective.

At Zincirli, a substantial Phoenician text reinforces this interpretation. In the 16-line inscription of Kilamuwa, the king holds a lotus blossom in one hand, as did Assyrian kings beginning with Tiglath-pileser III (Winter 1982: 366). In line 9, we read that "I, Kilamuwa, the son of Hayya, sat upon my father's throne"; and later, a passage in lines 13–14 records "Now, if any of my sons [line 14] who shall sit in my place does harm to this inscription . . . " (Gibson 1982: 35). That Younger felt compelled to add the gloss "(reign)" following the word "sit" in line 14 is indicative of today's predilection to consider royal "sitting" as a metaphor for "ruling" (2000: 148). Kilamuwa is clearly referring to kingship when he refers to sitting on his father's throne and to his sons who will sit there after he is gone. But the visual emphasis placed on the throne itself in Assyria, which was closely related to Syro-Anatolian practice, and now also in Phoenician art, suggests that Kilamuwa is being quite literal when he speaks of sitting in the throne. If that is the case, then actually performing the role of kingship by definition involved being physically present on the throne. The physical location of the inscription in the portico entrance to Zincirli's *bīt-ḫilāni* Building J, the space through which one passed en route to the throne room, would seem to reinforce this conclusion. The orthostat's location at the palace entrance also served to fuse king, kingship, throne, and palace together into an inseparable symbolic bundle.[10]

[10] One sees the association of legitimate kingship with the throne in texts dating as early as the late 11th or early 10th century. One of the earliest examples belongs to the Phoenician inscription carved into the lid of the Ahiram sarcophagus, discovered in the necropolis of Byblos. The second line of this inscription is a warning against other kings or commanders, stating that if they come up against Byblos, then "may the scepter of his rule be uprooted, may the throne of his kingdom be overturned, and may peace depart from Byblos!" (cf. Gibson 1982: 14; R. G. Lehmann 2005: 38; McCarter 2003: 181). The reference to the "throne of his kingdom" is an ancestor of the textual references of the subsequent three centuries, and the sarcophagus's participation in the discourse surrounding legitimate kingship in northern Syria and southeastern Anatolia is reinforced visually by the scene in bas-relief on the side of the tomb underneath the inscription: a king sits on his throne with winged sphinxes for its sides, holding a lotus blossom in one hand while his feet rest on a footstool, and before him stands a small table—very similar in its details to those attested in the Assyrian palace reliefs—with several standing figures behind it in the king's audience. Indeed, the only element of the scene that does not fit with

The words *sit*, *caused to sit*, *seated*,[11] and *throne* appear in passages in the Karatepe bilingual (where they are present in both the Phoenician and the Luwian exemplars) (Hawkins 2000: 50), twice in isolated stelae from Hamath (2000: 405–7), in the Karahöyük and Izgin stelae of Malatya (2000: 288–92, 314–15), in Carchemish inscription A21+ from the Great Staircase and Yararis's inscription A6 of the Royal Buttress (2000: 123–26, 158–60), on the *ex situ* colossal statue from Marash (2000: 255–57), and on the two pairs of podium blocks known as Boybeypınarı 1 and 2 from Kummuh (2000: 334–36). It is fair to refer to this literary trope as ubiquitous throughout the Syro-Anatolian region.

A reference to the seat of power comes almost immediately in the text of the massive Karahöyük stela from the site of the same name in the Elbistan Plain. Given the stela's early date and its role in legitimizing the newly founded state of Melid, it is not surprising to read right away that when the Great King Ir-Teshub arrived in the land only to find the city empty, his first act was the following: "§3. He found the city empty, §4. and he sat upon the *seat*, (or: and he set up a *seat*)" (Hawkins 2000: 289). The second possible translation offered by Hawkins makes more sense in the context of the stela's role in narratıng the launch of a new kingdom (Harmanşah 2005: 191–213). According to Armanis, the author of the inscription, the first event that needed to take place in order to create a functioning political authority in the region was to set up a seat. From the above discussion, it is reasonable to conclude that this statement is literal as well as metaphorical: for Ir-Teshub, and later Armanis, to claim legitimate authority, there needed to be a seat from which to govern.[12] By the time of a slightly later stela from Izgin, 9 km from Elbistan, the author, one Taras, Hero and Country-Lord of Malatya, is able to refer to this seat—in this case, using the logogram THRONUS, or "throne"—as his "paternal throne" (Hawkins 2000: 315), suggesting that these objects were passed down the lineage in the same way as kingship itself.

The fact that the logogram THRONUS, , resembles so closely the piece of the Syro-Anatolian furniture assemblage that I have argued is on display in Neo-Assyrian reliefs, both as booty and as furniture used by the Assyrian kings (cf. figs. 5–7 above), supports the interpretation that these objects are Syro-Anatolian in origin and thus usable in our reconstructions of Syro-Anatolian political authority.[13] In case there is any doubt that these statements refer to physical objects in addition to metaphorical concepts, the texts from the city-state of Kummuh referred to as Boybeypınarı 1 and 2 are quite clear on this matter. These two passages are two pairs of stone blocks which apparently served as podiums for the furniture described in the inscription (see the illustration in Hawkins 2000: 335 for a reconstruction of how these odd pieces stood). We learn from the first line of text on Boybeypınarı 1 that "[t]his throne [THRONUS] and this table [MENSA] I Panamuwatis, the ruler Suppiluliumas's wife, dedicated" (Hawkins 2000: 336). Evidently, in this example and, by extrapolation, less explicit examples, it is apparent that when royal furniture like thrones are mentioned, actual objects are intended, even when those objects carry symbolic value.

From the cumulative evidence of the iconography and inscriptions, it would appear that the material object of the throne and the metaphor of sitting in it as ruler were fused in a dialectical relationship of fact and symbol, in which the throne is at once a physical fact in space and a royal symbol in the texts, and sitting is at once a metaphor, and also a physical action necessary, for legitimate kingship.

Tell Tayinat, ancient Kunulua, has not provided an inscription that contributes directly to this discussion of Syro-Anatolian thrones. This is likely by virtue of the accident of discovery, which to date has unearthed dozens of tiny inscription fragments, only some of which can be joined, as opposed to large portions of inscriptions. However, even in the fragments brought to light at Tayinat, there is material evidence that helps confirm these arguments, especially the collection of fragments known as the inscription Tell Tayinat 1 (TT 1), pieces of which were found in the area of the acropolis and especially in the courtyard before Tayinat's *bīt-ḫilāni* Building I (Haines 1971: 41).[14] Fragments

the reliefs of Assyria is the sphinx on the side of the throne, and even this element is attested in Syro-Anatolian art in the form of column bases found at Zincirli (Luschan and Jacoby 1911: Taf. 66) and Sakçe Gözü (Garstang 1908: figs. 1–2).

[11] These words and phrases are generally represented by the logogram  , SOLIUM, only occasionally accompanied by phonetic complements. The inevitable grammatical ambiguity often makes it difficult to determine which translation is best—in particular, whether or not the phrase in question is using the logogram as a transitive or intransitive verb. See Hawkins's line-by-line commentary to the pertinent inscriptions for particulars (2000).

[12] Contra Hawkins, who interprets the clause quoted here as describing the "resettlement of the devastated land" (2000: 292).

[13] Note that this pictogram is also used for the logogram MENSA, "table" (Hawkins 2000: 27).

[14] David Hawkins, and before him Ignace Gelb, appear to have misunderstood the excavation records of the Syrian Hittite Expedition, placing in Gateway VII (the gate on the east side of the acropo-

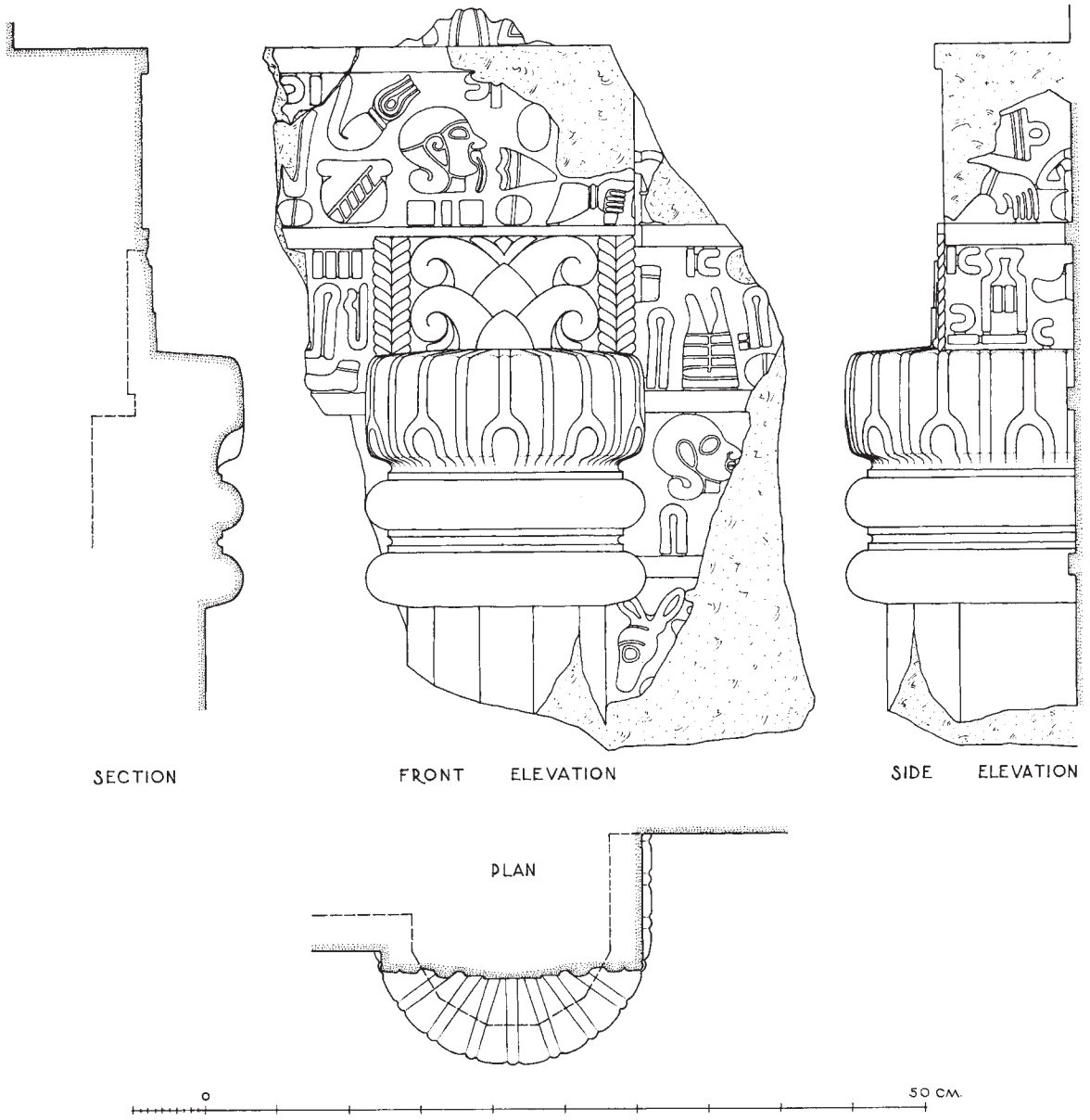

Fig. 12. Tell Tayinat Inscription 1, Fragment 1 of a monumental basalt throne (Haines 1971: pl. 118). Note the inverted column base-like feature at the top of the throne leg. Drawing courtesy of the Oriental Institute Museum.

1 and 2 of TT 1 are portions of a large basalt piece of furniture, decorated with imagery and with a substantial bas-relief inscription unfortunately too patchy to understand in detail (see Hawkins 2000: 366). But although the text is inaccessible, the iconography of the two fragments suggests that they derive from a large monumental throne, including two throne legs and the beginning of the horizontal crossbar in Fragment 2, attached perpendicularly to what is thought to be the back leg of the throne (fig. 12).[15] This is not, of

lis between the acropolis and the lower city) both the inscription fragments and pieces of a colossal statue (Gelb 1939: 39; Hawkins 2000: 365–66; 2009: 167). In fact, although the colossal statue fragments that were thought to be associated with the inscription fragments *do* come from that gate, the inscriptional material appears to have been scattered around the acropolis (Harrison 2009a: 174; see illustration in 2009b: 179; cf. Ussishkin 1989: 488).

[15] Fragment 2, the piece with the horizontal crossbar protruding perpendicularly from the top of the throne leg, is unfortunately not illustrated in the Haines report. For a sketch, see Hawkins 2000: pl. 190.

course, the actual throne that was used by the ruler of Patina, which would have been a wooden piece of furniture within the palace. Rather, it is a stone statue of a throne, not dissimilar to that found at the King's Gate at Carchemish (Woolley and Barnett 1952: 199) (and, like the Carchemish example, was perhaps originally located near the gate into Kunulua's palace compound, Gate V [Haines 1971: 55–57, pl. 104]). Nevertheless, the statue can be used as an indication of what the actual wooden throne may have looked like.

It is a pity that the monument is not better preserved, but the two fragments are highly informative on their own. The most interesting aspect of their iconography is seen in the back legs of the throne, which apparently consist of architectural columns like the ones that would have decorated the portico of the palace, Building I. This conclusion is reached primarily by virtue of the "capital" that rests on top of the leg/column: this element is indisputably derived from the column bases that adorned the original entrance to Building I (Floor 3), a base type that Frankfort referred to as "a peculiar flat cushion shape" (1952: 122) and that has nearly identical counterparts in Palace K at Zincirli. The main differences in the throne fragment are that the column base has been turned upside down—as would befit a column base used as a capital—and that its middle and bottom registers (or middle and top registers, depending on which way one looks at it) are schematically presented without their guilloches, rosettes, and palmettes.

We have already seen that furniture pieces, including thrones, tend to have architectural elements; indeed, the presence of these elements is part of the reason why these items seem likely to have originated in northern Syria and southeastern Anatolia. The throne portrayed in TT 1 would seem to confirm that reasoning. The significance of the architectural aspects of the Tayinat throne fragments is rarely acknowledged and has never been properly analyzed.[16] If the capitals of the throne legs are accepted as essentially the same as the archaeologically attested column bases, then we also can wonder if the many-sided nature of the column/leg beneath the capital—apparently 12-sided, if one assumes that the half of the column not visible would have been identical to the visible portion (Haines 1971: 41)—is likewise a faithful representation of what the actual wooden columns of the palace portico looked like. The same pattern is attested in the western-style table being carried by court attendants at Khorsabad (see figs. 4, 10), and indeed, returning to that relief reminds us again of how much that table's "capital" resembles the Tayinat column base. It is also not difficult to see in the volute palm leaves above the columns in both fragments of TT 1 the same pattern that adorns the top of the *antae* in the temple portrayed in Room H of Ashurbanipal's North Palace (see fig. 3), not to mention the limestone palmette capitals of the southern Levant (King and Stager 2001: 206–7; Shiloh 1979), and it is thus not unlikely that the palmette would have been the very pattern that stood atop the columns in the palace portico of Building I, Tell Tayinat's *bīt-ḫilāni*.

The throne fragments found at Tayinat serve as a pithy visual summary of what has been argued up to this point: since the Syro-Anatolian palace is not itself represented in either Syro-Anatolian or Neo-Assyrian art (once one disregards the specious "pavilions" that more likely represent the *in antis* temple), the next best place to look is in the palace's accompanying furniture, which was then identified in the Assyrian reliefs and now also in Syro-Anatolian material culture. Not only did this class of material provide insight into architectural aspects of the palace that were otherwise unknown, including the likely appearance of the *bīt-ḫilāni*'s columns, it also served as a powerful visual cue for communicating the symbolic and political nature of the building. It is not coincidental that Tayinat's basalt throne, an object so heavily emphasized in Syro-Anatolian texts, incorporated elements from the palace. In so doing, it became an important component of the building's total effect, ultimately combining the palace, the throne inside the palace, and the king on the throne, in a nexus of symbolic associations that rendered each of these three things at once representations of one another. That the throne was so utterly destroyed, possibly by the Assyrians in 738 B.C.E., is not surprising given the preceding analysis. As a highly charged symbol of kingship that encapsulated not just the king but also the king's palace, in addition to its own role of embodying kingship in material form, it would have been an important piece for political rivals to destroy, and possibly it *had* to be destroyed for the usurping power to claim legitimacy of its own.

[16] This, despite the caption to figure 12 of McEwan's preliminary report that "[t]his piece gives us the first evidence for the restoration of columns and capitals in 'Hittite' architecture" (1937: fig. 12), and the note in the final excavation report that "[t]he architectural details of the throne are important in that they show half of a twelve-sided column shaft topped by a capital somewhat different from the known examples of column bases" (Haines 1971: 41). Winter discusses the significance of the throne fragments in terms of their contribution to chronology (1973: 231–35). In his corpus, Hawkins notes the existence of the "ornate, projecting capitals" (2000: 365) but does not elaborate.

This last point brings us back to the Assyrian records, in particular the notice of Tiglath-pileser III's conquest of Tayinat provided in his annals. Tiglath-pileser describes the Patinean king Tutammu's breaking of an oath he had made with the Assyrian king and Tiglath-pileser III's subsequent capture of the city and harvesting of its booty. In the midst of the accounts of the spoil is line 8: ". . .] I set up my throne in Tutammu's palace" (Tadmor and Yamada 2011: RINAP 1, Tiglath-pileser III 12, l. 8). The palace is not destroyed. On the contrary, Tiglath-pileser III uses the opportunity to seize more lasting control and makes Kunulua into the Assyrian province of Kullani[17] by placing his own symbol of royal authority, his throne, where Tutammu's once stood. The precise moment at which the accomplishment of incorporating Patina into Assyrian suzerainty was achieved is the moment in which the local throne is replaced by the Assyrian throne. Given the above discussion, this would have been an act whose significance was unmistakable to the citizens of the kingdom.

Text and imagery, both local and foreign, indicate that the Syro-Anatolian *bīt-ḫilāni* palace was—or at least had elements that were—consciously designed as a structure that communicated the authority of the king through a series of carefully constructed and assembled visual indicators. With this qualitative aspect of the "integrative approach" to architecture complete, it now remains to be seen what can be contributed by the graphical and quantitative properties of space syntax.

SPACE SYNTAX ANALYSIS OF THE *BĪT-ḪILĀNI*

Space syntax is a theory regarding built forms that argues that the configuration of space, whether the arrangement of buildings in a town or the layout of rooms within a specific building, has a real and significant effect on human behavior. Space syntax encompasses a series of graphical representations and quantitative analyses that describe a building's makeup with regard to the ease or difficulty with which individuals move through the building's constituent units. Although it began in the 1970s, space syntax as it is operationalized today began with the publication of *The Social Logic of Space* (Hillier and Hanson 1984). Since that time, what began as an approach advocated by a handful of architectural theorists has become a mainstream feature of architectural discourse. In archaeology, space syntax is something of a niche subfield. There is not the same level of communication among archaeologists who conduct space syntax analysis as there is among practicing architects, but enough archaeologists have become interested in its methods that some degree of space syntax research in antiquity has been conducted in most parts of the world, including the ancient Near East (Banning 1996; Clark 2007; Cooper 1995; Cutting 2003; Düring 2001; Foster 1989; Grahame 2000; Hammer n.d.; Paliou, Wheatley, and Earl 2011; Richardson 2003; Shapiro 2005; Stone 2000; Van Dyke 1999).

As the name suggests, space syntax seeks to break down the built environment into its smallest constituent elements; it is the relationships between and among those units, not the units themselves, that determine the nature of a building. The salient point is that a building can be characterized by the way in which the rooms that constitute it relate to one another in space. Operating under a framework that examines buildings in terms of the configuration, or relationality, of spaces within them, it follows that there are certain social conclusions that can be made from a quantitative assessment of those relations (Hillier and Vaughan 2007: 206). None of this is to say that one can or should draw up a classificatory list of idealized forms such that buildings of type *x* necessarily derive from a society characterized by social or political behavior *y*. On the contrary, most real examples will inevitably be individual cases in which the differences between buildings even of the same basic type will be as significant as their similarities (Hillier and Hanson 1984: 82–83; Moore 1996: 93).

As both a theory and a set of analyses and interpretations, space syntax is a reductive enterprise. The process deliberately breaks down potentially complicated structures into units of space and connections between spaces, and explicitly removes all other attributes, including decoration and room size. Such an approach has its advantages, especially the facilitation of rapid visual and quantitative assessment of buildings, as well the enabling of comparison of buildings from different sites, regions, or periods. Nevertheless, its shortcomings must also be acknowledged. The most immediate of these for archaeologists pertains to the quality of the data set: space syntax is entirely dependent on accurate architectural plans, especially the locations of doorways which, in many ancient contexts, are only poorly known (Cutting 2003). This constraining factor means that only well-preserved buildings can be analyzed.

More substantial are the theoretical challenges that have been leveled against it. Space syntax has

[17] See Tadmor 2008: 57 for a discussion and bibliography of the philological problems associated with Kunulua/Kinalia > Kullani.

a tendency to downplay the role that human agency should have in our understanding of the built environment. Used on its own, space syntax ignores the fact that buildings are made and occupied by actual people, not by abstract forces to which humans are unknowing subjects (Falkenhausen 2003: 247). Space syntax shares with structuralism the problem of favoring structure at the expense of agency. At the same time, by ignoring spatially superfluous aspects of the built environment, such as decoration and room size, space syntax runs the risk—or, rather, the likelihood—of missing the symbolic and meaningful content of a building (Leach 1978; Pearson and Richards 1994: 26)—for example, the powerful messages contained in the Neo-Assyrian palace reliefs that surely affected the visitor's experience of space. Considerations such as these are precisely why an integrative approach like the one offered in this paper is necessary.

Although accurate interpretation of accessibility is necessarily contingent on an awareness of the larger cultural context, and especially awareness of cultural attitudes toward built space, access analysis operates under the general assumption that spaces characterized by greater ease of accessibility tend to promote social interaction, whereas those that are relatively secluded tend to create greater social exclusion. It is, therefore, important to note that patterns of accessibility predicted by these graphical and quantitative measures are confirmed repeatedly by studies of people's actual usage of space with respect to their movement through buildings (Hillier et al. 1996; Penn 2003; Peponis and Wineman 2002).

With the consideration of texts and iconography undertaken earlier, we now turn to an investigation of the physical relationships between spaces within the *bīt-ḫilāni* palace, focusing on the remains from Tell Tayinat. Since space syntax is so dependent on accurate architectural plans, especially with regard to the presence and location of doorways between rooms, it is necessary to provide a brief summary of what is known regarding the layout of the *bīt-ḫilāni* in the acropolis of Kunulua, ca. 900–738 B.C.E.

The Palaces of Kunulua during the Ninth–Eighth Centuries B.C.E.

The most imposing building on the acropolis of Kunulua during its pre-conquest independence, or Building Period 2 in the phasing developed by the excavators, is the *bīt-ḫilāni* palace structure composed of Building I and Building VI (fig. 13). This building, and the large Courtyard VIII in front of it, was accessed after entering the palace compound through Gate V, a

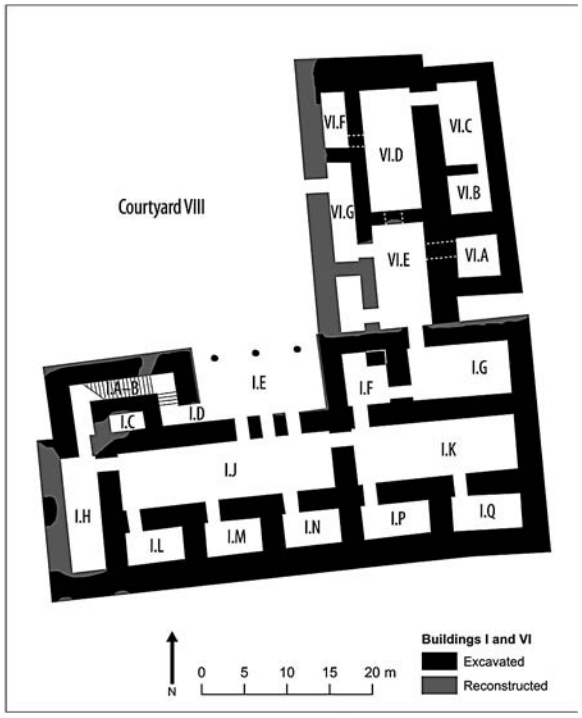

Fig. 13. Buildings I and VI, Tell Tayinat, Floor 3 (Building Period 2). Drawing courtesy of the Oriental Institute Museum.

building immediately west of Building I (Haines 1971: 55–57, pl. 104).

The terminological separation between what are really two wings of a single structure is the result of their being excavated at different times during the campaigns of the Syrian-Hittite Expedition. Building I was the first to be excavated because it occupied the highest part of the tell (McEwan 1937: 9) and, at 29 × 58 m, was quite a substantial structure. The cobblestone and pebble porch, Room E, was lined at the front with three large basalt column bases decorated with palmette patterns around the top and bottom, and a running guilloche and rosette pattern that encircled the middle torus (see fig. 11). These are the column bases that are represented in the monumental throne of inscription TT 1 and in furniture pieces in Neo-Assyrian reliefs. On the western side of the porch one entered Room D, a small vestibule that led to a stairway, of which the first four steps were preserved, up to the second story or roof. The small rooms A and B are in the northern and western spaces of this staircase area, respectively; presumably they were underneath the staircase from Room D, which was winding overhead. Room C, the central feature around which wound the staircase beginning in Room D, had no identifiable doorway on any of its sides, and Haines leaves open

the possibility that this space was filled, making it a solid pier to serve as the support needed for the stairway (1971: 48). From the porch, Room E, one entered the largest room of the palace, Room J. The threshold between these two rooms had been removed by later alterations of the palace and thus was reconstructed by Haines on the basis of later phases (Haines 1971: 46–47).[18] The rest of Building I was well understood by the excavators. It can be considered as comprising two main sections, a western and an eastern unit. The central feature of the western unit is clearly Room J, the palace's largest room at 25.10 m × 7.10 m. From room J one could enter several surrounding rooms. Also from Room J one passed into the eastern section of the building, a suite of rooms not dissimilar in shape from the square, or nearly square, Syro-Anatolian palaces like Zincirli's Hilanis II and III or the *bīt-ḫilāni* from Carchemish. Room K is the largest space in this unit, at 18.90 × 6.90 m. There are no particular uncertainties associated with the layout of these rooms and the passages between them (Haines 1971: 48–49).

From the room in the northeast corner of Building I, Room G, one passed through a doorway into Building VI, actually an attached wing of Building I. Haines notes that Building VI is similar in plan to the eastern unit of Building I, with the exception of its turned axis. Due to subsequent building activity, the western edge of Building VI was not preserved at this level, and thus Haines reconstructed several rooms or portions of rooms in this part of the building (1971: pl. 103). Unfortunately, Haines offers little justification for the layout he provides, which is problematic: not only are several walls reconstructed, but several doorways between known walls also had to be conjectured (from VI.E to VI.D, VI.E to VI.A, and VI.D to VI.F). The small proposed doorway from Courtyard VIII into Building VI is awkward, and perhaps the room would be more plausibly reconstructed as a portico, which would have the additional benefit of accounting for one or more of the three *ex situ* column bases found by the expedition (see below) (Haines 1971: pls. 113, 116–17). One space that Haines does not label is the room whose entire existence is hypothetical—that is, the only space with none of its four walls identified. This is the small space south of VI.G, west of VI.E, and north of I.F. For the sake of consistency with published accounts, I have kept this room in the building plan but will not be incorporating it in the following space syntax analysis. The same is true for Room I.C, the "staircase interior" of Building I.

The layout of the *bīt-ḫilāni* just presented is that which characterized the building during the Second Building Period, the excavators' designation for the stratum that was dated from the late ninth century until roughly the time of the Assyrian conquest in 738 B.C.E. (Haines 1971: 66, pls. 103, 106). This dating is supported by recent typological and comparative analysis of the ceramic remains from within the *bīt-ḫilāni*, including local and imported wares from Cyprus and the Aegean (Osborne in press). Prior to the late ninth century, this area was occupied by the massive Building XIV, a palace whose layout is unfortunately very poorly understood (Haines 1971: pl. 95), despite renewed excavations (Harrison 2009a: 178–79; 2009b: 183–84). During the Assyrian occupation of the site, Building I was modified by the increased restriction of the portico entrance and the addition of a passage from the portico into Room I.F. Building VI was covered by a large platform that extended over its entire area (Haines 1971: pls. 101–3, 106–8). Since they date to the period following the period of Kunulua's status as capital of the independent Syro-Anatolian kingdom of Patina, these modifications are not considered in further detail here.

Access Analysis of Buildings I and VI

"Access analysis" is an umbrella term for a number of quantitative approaches to the units of space, or rooms, that comprise a bounded space, or building, as defined by its enclosing outer walls (Hillier and Hanson 1984: 143–55). The first stage in the analysis is reducing the complexity of a building plan to its constituent components of rooms, represented by circles of equal size (regardless of actual room size), and relations of permeability between rooms (i.e., doorways) represented by lines. The exterior space outside of the building, referred to as the "carrier," or "root," is included in the graph as a circle, and is usually kept visually distinct from the circles representing the interior rooms by some kind of label. Each room of a particular "depth" from the carrier—that is, the number of spaces one must pass through in order to get from the carrier to the room in question—is aligned on the same horizontal plane, such that the resulting graph is *justified* according to how deep in the building each room is positioned. The final graph is thus referred to as a "j-graph."

[18] The alternative to Haines's reconstruction would be to propose that the palace's main floor was at the top of the stairs, and that the excavated remains thus belong to a basement level of secondary importance (McEwan 1937: 13). This scenario does not seem tenable, given the nature of several parallels for this structure from neighboring sites, especially Kapara's "Temple-Palace" at Tell Halaf and Palace K at Zincirli, which have identifiable doorways from the portico into the interior rooms.

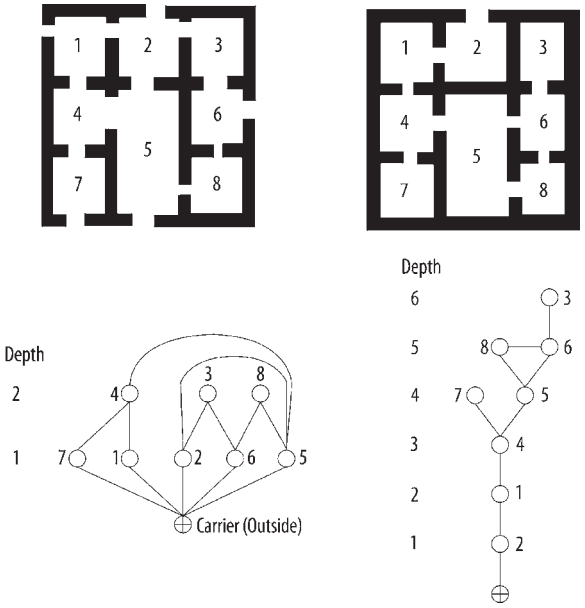

Fig. 14. Two similar buildings with different graphs (adapted by the author from Hillier and Hanson 1984: figs. 93–94, and Fisher 2009: fig. 1). Drawing courtesy of Elsevier.

Figure 14 shows two examples of a building and its associated j-graph. Both buildings have essentially the same outline and number of rooms, but their space syntax differs significantly on account of where the doorways between the rooms are located. The j-graph for the building plan on the left represents a much greater degree of accessibility than the plan on the right: in the building on the left, one can get from the outside to any room in two stages or less, while getting to Room 3 in the building on the right, for example, requires passing through six different stages. These syntactical differences, which surely affect one's experience of the building, are not immediately apparent in the buildings' architectural plans but are intuitively visible in their justified graphs.

The first advantage of the j-graph, then, is its ability to rapidly summarize and display the relative accessibility or segregation of a building in a visual format that can be immediately apprehended, even without any knowledge or appreciation of space syntax per se. Hillier and Hanson refer often to the syntactic properties of "symmetry" vs. "asymmetry" and "distributedness" vs. "nondistributedness." In their words,

> two spaces *a* and *b* will be: symmetric if *a* is to *b* as *b* is to *a* with respect to *c*, meaning that neither *a* nor *b* controls permeability to each other; asymmetric if *a* is not to *b* as *b* is to *a*, in the sense that one controls permeability to the other from some third space *c*; distributed if there is more than one independent route from *a* to *b* including one passing through a third space *c* . . . and nondistributed if there is some space *c*, through which any route from *a* to *b* must pass. (Hillier and Hanson 1984: 148)

It is clear from looking at the j-graphs of the examples in figure 14 that the left-hand building has a greater degree of symmetry and distributedness, while the building on the right has a greater degree of asymmetry and nondistributedness; the terms possess a visual quality that accords well with their formal definitions. In terms of the social significance of these properties, Hillier and Hanson (1984: 96–97) note that in many (though by no means all) instances, symmetry in a building tends to promote social integration between such social categories as inhabitants and visitors, while asymmetry is correlated with segregation between social groups. Similarly, a greater degree of spatial distributedness across a building plan tends to be related to diffuse spatial control, or power, while greater nondistributedness is associated with unitary, superordinate spatial control.

The j-graph also is a powerful analytic device in that it is from this graph that a number of quantitative syntactical properties of a building can be calculated. The first of these is depth, which, as noted above, simply refers to the number of spaces an individual must traverse to reach a particular room from another particular room. This is the most fundamental syntactical value, since it is used in the calculations of all other values. Depth is the syntactical property that is illustrated visually in a building's j-graph.

Figure 15 shows the justified graph of Buildings I and VI from Tell Tayinat, with its nodes colored such that every node of the same depth, in addition to being on the same horizontal plane, is also of the same color (for the sake of visual readability).[19] Figure 15 shows several features of Buildings I and VI that might not be immediately apparent on the plan of the building as provided in figure 13. Foremost among these is the parallel architectural layout that characterizes both wings of the building. Both Building I and Building VI have a single room at a depth of 1 (rooms I.E and VI.G,

[19] This graph was made with the aid of the AGRAPH space syntax program, a stand-alone piece of software developed by Bendik Manum, Espen Rusten, and Paul Benze and available for download from the website of the Faculty of Architecture and Fine Art of the Norwegian University of Science and Technology (Manum and Rusten 2009; Manum, Rusten, and Benze n.d.).

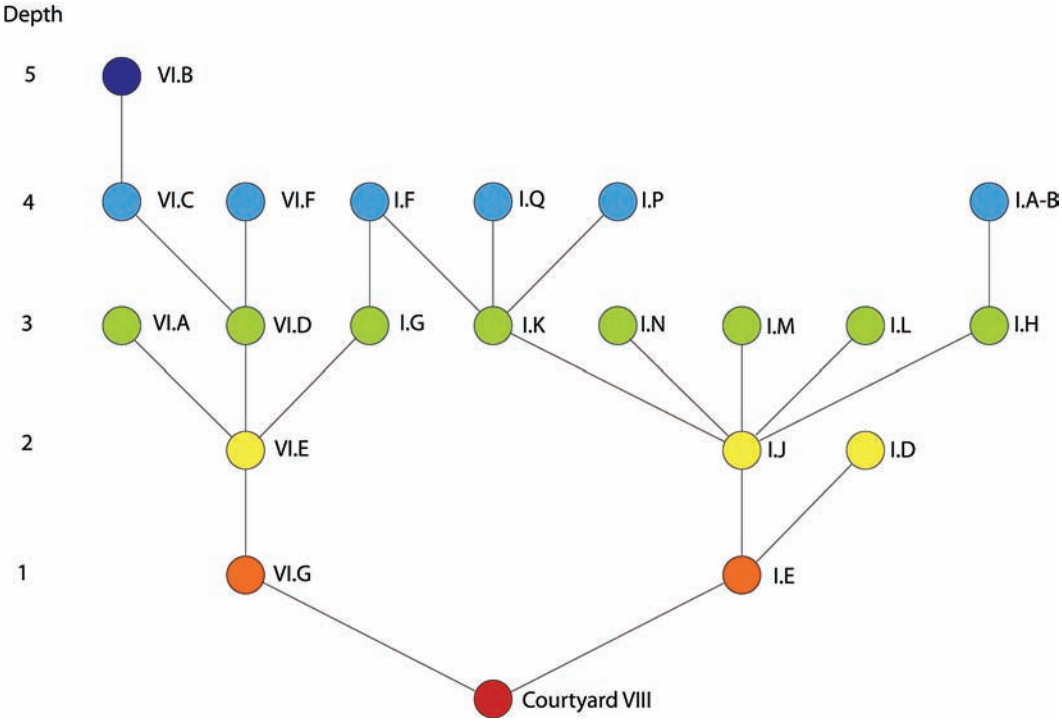

Fig. 15. Justified graph of *bit-ḫilāni* Buildings I and VI, Tell Tayinat, colored according to depth. Graph generated by the author using AGRAPH software.

respectively) which leads into a further single room at a depth of 2 (rooms I.J and VI.E). This latter room serves as its building's control point, from which the remainder of the building is accessed. Another feature to emerge from the j-graph in figure 15 is the limited range of options available to the individual moving into the building from the courtyard. In almost every instance, each room in the entire complex can only be accessed via a single, specific route; there are practically no alternatives available. What this suggests is that the palace can be characterized as nondistributed in the sense that in several—indeed, almost all—instances, access between two rooms is controlled by another room, and there is generally only one way to access a specific room. At the same time, figure 15 makes Building I/VI look fairly symmetrical. There is a significant exception to these generalizations, of course, and that is the link that exists between the two wings of the building in the passage between VI.E and I.G. This particular relationship of permeability will have the effect of mitigating the quantitative variables that indicate integration/segregation, as we shall see, but, as a single instance, does not counteract the overall impression of symmetry.

Before making interpretations about the nature of political authority as expressed in the spatial ordering of this building, it is helpful to look at these syntactical properties formally as well as visually in the building's ground plan. Table 1 summarizes the quantitative syntactic properties involved in access analysis.

Figure 16 displays the property of depth visually by combining it with the ground plan of Building I/VI, using the same colors as in the j-graph of figure 15. In this plan, we are reminded, for instance, that I.D has the same depth value as the presumably significant rooms I.J and VI.E. Since I.D is a staircase,[20] this similarity is likely not coincidental. Entering Building I at Room E, an individual was faced with the choice of whether to proceed into the building via Room J or whether to head to the upper floor. In light of this illustration, I find it quite implausible that these stairs (in this instance, at least, but also in those belonging to other Syro-Anatolian palaces) led only to a roof,

[20] Given that it is a room that was located *under* the stairs, note that Room I.A–B's depth—and all other properties discussed in what follows—derives from a movement pathway of I.E > I.J > I.H > I.A–B, *not* I.E > I.D > I.A–B.

TABLE 1. SYNTAX VALUES FOR TELL TAYINAT, BUILDINGS I AND VI, FLOOR 3 (BUILDING PERIOD 2), WITH COURTYARD VIII AS CARRIER

Room	*Depth (from Courtyard VIII)*	*Total Depth*[1]	*Mean Depth*[2]	*Control Value*	*Relative Asymmetry*[3]	*Integration*[4]
Courtyard VIII	0	61	3.05	0.83	0.216	4.63
I.A–B	4	93	4.65	0.50	0.384	2.60
I.D	2	77	3.85	0.33	0.300	3.33
I.E	1	58	2.90	1.66	0.200	5
I.F	4	59	2.95	0.75	0.205	4.88
I.G	3	62	3.10	0.75	0.221	4.52
I.H	3	74	3.70	1.17	0.284	3.52
I.J	2	57	2.85	4.08	0.195	5.13
I.K	3	56	2.80	2.66	0.189	5.29
I.L	3	76	3.80	0.17	0.295	3.39
I.M	3	76	3.80	0.17	0.295	3.39
I.N	3	76	3.80	0.17	0.295	3.39
I.P	4	75	3.75	0.25	0.289	3.46
I.Q	4	75	3.75	0.25	0.289	3.46
VI.A	3	82	4.10	0.25	0.326	3.07
VI.B	5	112	5.60	0.50	0.484	2.07
VI.C	4	93	4.65	1.33	0.384	2.60
VI.D	3	76	3.80	1.75	0.295	3.39
VI.E	2	63	3.15	2	0.226	4.42
VI.F	4	95	4.75	0.33	0.395	2.53
VI.G	1	64	3.20	0.75	0.232	4.31

Source: *AGRAPH* (Manum, Rusten, and Benze n.d.)
[1] TD = Σd_k, where d_k represents the depth value for each space k.
[2] MD = Σd_k / (k – 1), where Σd_k is the sum of the depth values d for each of the k spaces.
[3] RA = 2(MD – 1) / (k – 2)
[4] I = 1/RA

although there is no excavated evidence to prove this. The main reasoning in favor of a second story is the restricted number of rooms in the Building I/VI complex: it is difficult to imagine the king of Patina sleeping just one or two rooms away from the entrance to the building and the reception area. Figure 16 would seem to support the notion that from the porch, Room E, the building's inhabitants, including attendants, servants, and the like, were allowed upstairs, while nonresident visitors and activities pertaining to the "affairs of state" occupied the lower story, the level visible in the archaeological record.[21]

Another way to approach depth within a building's spatial units is to consider the property known as "total depth" (fig. 17). Total depth represents the sum of all

[21] Lehmann and Killebrew (2010: 27) argue that, on account of their being surrounded, the *bīt-ḫilāni* palaces' central rooms must have been illuminated by clerestory windows from a vertical extension beyond the roofs of surrounding rooms.

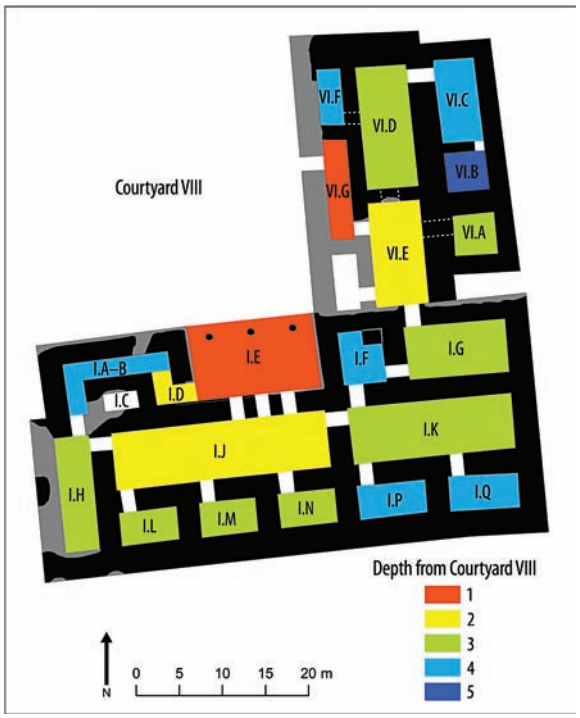

Fig. 16. Buildings I and VI according to depth from Courtyard VIII, with the same color scheme as figure 15 (Courtyard VIII's depth of 0 not shown). Base drawing courtesy of the Oriental Institute Museum.

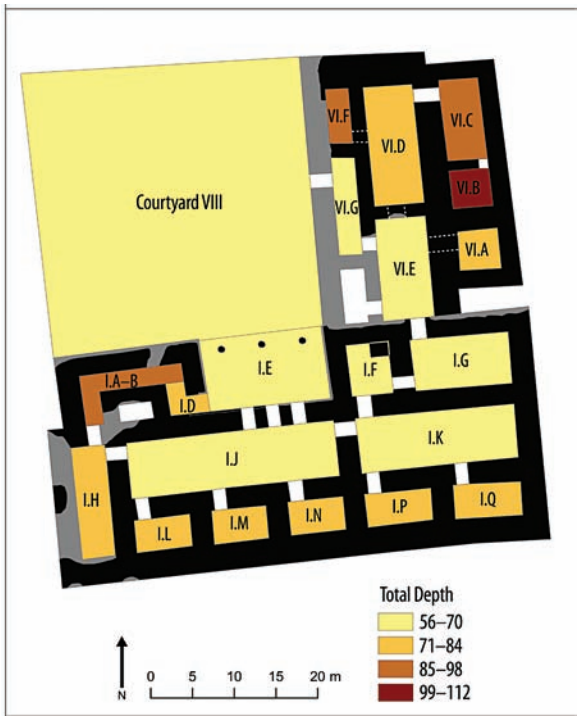

Fig. 17. Buildings I and VI according to total depth. Base drawing courtesy of the Oriental Institute Museum.

of the depth values from that node to the other nodes in the system, or Σd_k, where d_k represents the depth value for each space (Hillier 1996: 73). It measures a different phenomenon from "depth"—specifically, the depth value of a room as it relates to the rest of the building. This difference is subtle but significant: whereas depth is a local value, meaning that it looks at a room in relation to a single other space, total depth is a global value, as it calculates the depth of a room in relation to the entire building system. A comparison of figures 16 and 17 illustrates the difference between the two properties in Buildings I and VI.

One conclusion to be drawn from the appearance of the palace plan according to total depth is that the bank of rooms in the rear section of Building I are generally equivalent in relative depth. Whereas depth on its own had raised the possibility that rooms I.P and I.Q were somehow distinct from rooms I.H, I.M, I.L, and I.N—and they are, when considered with respect to the courtyard—total depth implies that rooms I.P and I.Q are not dissimilar from their western counterparts when treated as units of the larger palace complex. A second conclusion is the difference in the relative depths of Building I and Building VI. Whereas figure 16 had suggested that the two wings of the palace were (Room VI.B notwithstanding) essentially identical in this regard—and again, that is true with respect to the courtyard—figure 17 identifies Building VI as being noticeably "deeper" than Building I. Mathematically, this is a result of the larger number of rooms in Building I: reaching Building VI from Building I requires traversing a greater number of rooms than does reaching Building I from Building VI. These total depth results support the notion that Building I was more likely to serve as the arena for public reception, if one assumes that political events with visitors are less likely to take place in rooms of greater depth. Building I would thus appear to have been a more charged political space insofar as it was the location where relationships of power between inhabitant and visitor were actually negotiated.

To return to the local character of rooms in the palace complex, let us consider the syntax property known as "control value," which proposes a mathematical method to express the relative influence a room in a building exerts over its neighbors, based on the number of neighboring units with which it interacts. The

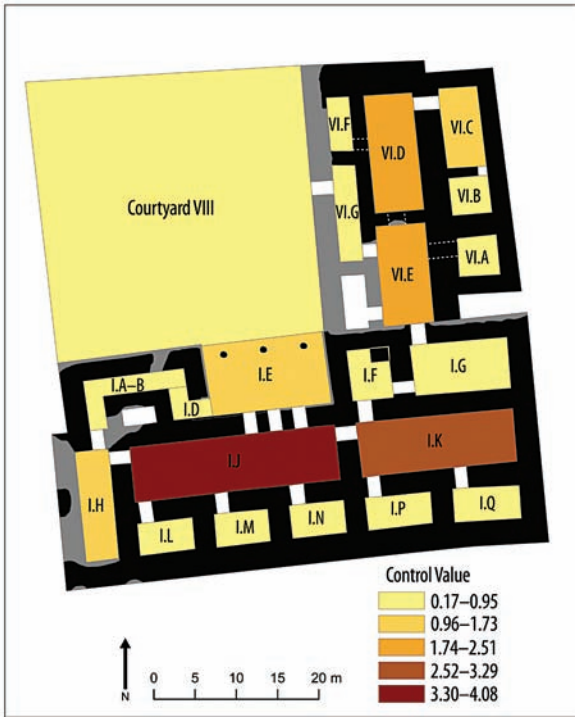

Fig. 18. Buildings I and VI according to control value. Base drawing courtesy of the Oriental Institute Museum.

control value is determined in the following way: each room in a building is assigned a value of 1; this value is then divided equally among the rooms' immediate neighbors, such that, for example, a room with four neighbors gives ¼ to each; the values each room has received from its neighbors are then totaled, and a higher total indicates greater control (Hillier and Hanson 1984: 109). Because each room gives a certain amount of value to each neighbor but also receives a certain amount of value from each neighbor, rooms with control values less than 1 can be considered relatively weak control spaces; those with control values greater than 1 can be considered relatively controlling (fig. 18).

The immediately striking feature of figure 18 is the dominance of Room I.J. At least according to the principle of the control value, I.J is, with a control value of 4.08, both alone in its category[22] and the only room to top a control value of 4 (table 1). Room I.K is likewise alone in its class range, having a control value of 2.66. These two rooms' high control values are a function of their having a high number of neighbors, neighbors that themselves have a low number of neighbors, such that I.J and I.K are giving small values to the rooms around them but receiving high values from them.

It remains to determine whether or not the mathematical property of control bears any relation to the human reality of this particular Syro-Anatolian palace complex. One response to this question is that this procedure is merely rendering rigorous and transparent a process that archaeologists and art historians have already been doing impressionistically anyway. Furthermore, architectural parallels already lead us to believe that Room I.J was a significant one—even the most significant one. Foremost among these is the known location of thrones in Iron Age palaces. These locations are usually determined from the stone throne bases or daises which are found in situ. Palaces J and K from Zincirli, roughly contemporaneous with Buildings I and VI at Tayinat, both have hearth fixtures in the left side of their equivalent rooms, J.3 and K.2, respectively, and K.2 even has a throne base against the wall behind the hearth (Frankfort 1952: 122–24; Luschan and Jacoby 1911: Abb. 175). Thrones are found in the equivalent locations in Assyrian throne room suites as well, beginning with Room B of Ashurnasirpal II's Northwest Palace and continuing throughout subsequent Assyrian palaces at Khorsabad and Nineveh (Turner 1970: pl. 38). In light of these parallels, it would seem that Room I.J is a very likely candidate for the palace complex's throne room, despite the absence of a throne base. Figure 18 further solidifies the point.

To what extent is the high degree of control also indicated for Room I.K (table 1; figure 18), as well as rooms VI.D and VI.E, an accurate reflection of the relative importance of those rooms? To address this, we may turn to a final syntax value, the property of "relative asymmetry." Symmetry, and its correlate asymmetry, can be understood as proxies for a building's integration or segregation, respectively. This is so because a symmetrical relationship between two spaces is one in which neither controls access to the other, while an asymmetrical association exists when one space does control permeability to the other. Because of its ability to summarize the accessibility of spaces in a building, relative asymmetry is the most

[22] These value ranges were determined in ArcMAP 10 using the "Equal Values" classification symbology, not the default classification method of "Natural Breaks (Jenks)." Data classification methods, including the several options offered by ArcMAP, have slightly different values depending on what one wants to emphasize or what statistical properties of values one considers most relevant to the question at hand. I have decided that dividing the total range into equal parts, here a range of 0.77/0.78, was the most representative treatment of the data.

significant quantitative value in access analysis (Grahame 2000: 34–36).

Relative asymmetry is, like total depth, a global syntactical property in that it assesses each room with respect to the larger system of the entire building. This is helpful analytically, since an absolute figure of relative asymmetry for a particular room is not informative until it is compared with other rooms in the building. Mathematically, to find a space's relative asymmetry, one must first establish the mean depth from that point, which can be defined by "assigning a depth value to each space according to how many spaces it is away from the original space, summing these values and dividing by the number of spaces in the system less one (the original space)" (Hillier and Hanson 1984: 108). This is summarized algebraically in the equation $MD = \Sigma d_k/k - 1$, where Σd_k is the sum of the depth values d for each of the k spaces (see table 1) (Grahame 2000: 35). With the mean depth values established, one then calculates relative asymmetry as follows: $RA = 2(MD - 1) / (k - 2)$. Relative asymmetry is standardized to fall always between 0 and 1. Because relative asymmetry is generally used to indicate integration, as opposed to segregation, it follows that values of relative asymmetry that approach 1 are segregated from the system, whereas values that approach 0 tend to integrate the system. Since this is inconveniently counterintuitive—ideally, we would like a value where a higher number, not a lower number, is associated with greater integration—the makers of AGRAPH have added "integration" to the tabular output of the j-graph, with the value of integration defined simply as the inverse of relative asymmetry, or 1/RA. Thus, both "relative asymmetry" and "integration" are present in table 1. Although, to my knowledge, integration as thus mathematically defined has never been implemented by archaeologists, I use it, and not relative asymmetry, in my visual display of integration because its greater intuitive appeal makes for a more straightforward presentation. Figure 19 shows the integration for Buildings I and VI.

The first thing about figure 19 to strike the viewer is, again, the distinction between Building I and Building VI. This has been a consistent outcome of the space syntax properties examined here, as we have seen that Building VI has greater total depth values, lower control values, and now lower integration values as well. In the case of integration, a good method to evaluate the two buildings is to compare the mean relative asymmetry of their rooms, calculated by summing the RA values and dividing that figure by the number of rooms (Hillier and Hanson 1984: 109). As figure 19 already suggests, although the mean relative asymmetry of the palace complex as a whole is 0.286, the mean relative asymmetry of Building I on its own is 0.265, while that of Building VI is 0.335. In other words, Building I has significantly greater integration than Building VI.

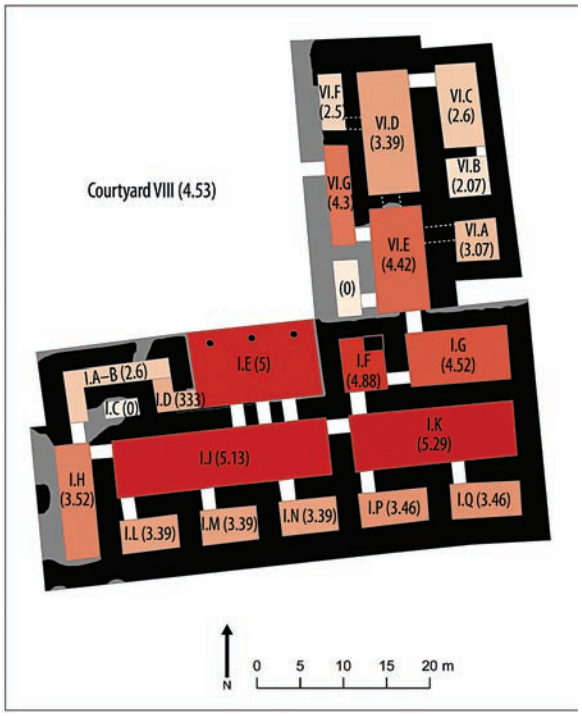

Fig. 19. Buildings I and VI according to integration (calculated as the inverse of relative asymmetry): darker shades of red indicate greater integration. Base drawing courtesy of the Oriental Institute Museum.

An additional point raised by figure 19 is that the most integrated room in the complex is not I.J, as one might have supposed based on that room's high number of immediate neighbors with access to and from it, or Room I.E., as might be supposed from its location at the interface between exterior and interior, but rather I.J's neighbor to the east, Room I.K. Figure 19's emphasis on I.K encourages us to reconsider its place in the architectural plan of the building complex, and, as the two doorways in I.K's northwest corner suggest, we realize that I.K played the crucial role of "pivot" between the two buildings. All pedestrians moving in either direction between the main, western unit of Building I and Building VI would have had to pass through this space. This suggests that Room I.K was a major center of social interaction, an unavoidable

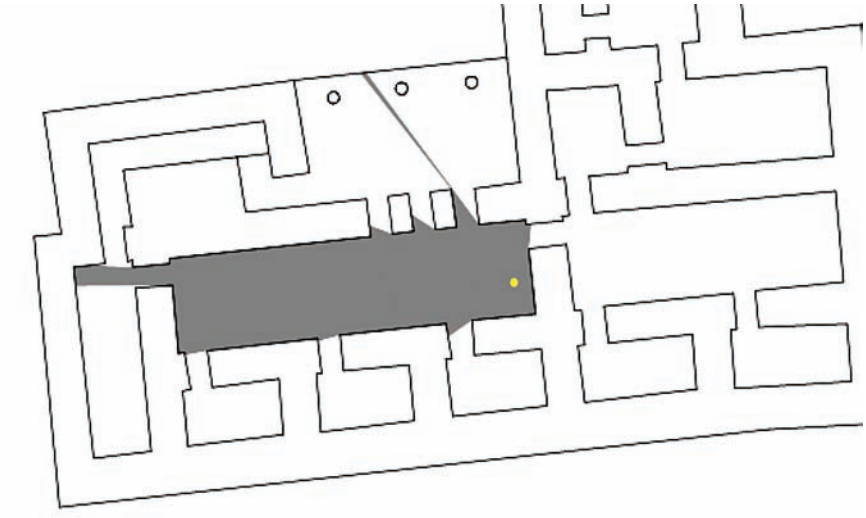

Fig. 20. Isovist generated from the likely location of the royal throne, here shown as a yellow point. Drawing by the author.

space for people heading to the reception suite of Building I, the apparently more private suite of Building VI, and the isolated rooms behind I.K.

Visibility Graph Analysis of Buildings I and VI

Isovist analysis is the study of patterns of visibility within buildings. Social theory and architecture since Foucault have considered visibility to be a major component of control, since it has, or has the ability to have, a significant impact on how individuals experience space. Most scholars accept the basic premise of isovist analysis that, in many (or most) situations, visibility within architecture behaves much the same way as physical accessibility, in that it too has the effect of restricting people from other people, features, events, and the information derived from those things (Fisher 2009: 448; Nielson 1995: 57). If that is so, then visibility, like access, serves as a powerful means of control.

An isovist is a two-dimensional polygon that one adds to a building plan, showing the precise area of the space in that building that is visible from a particular point (fig. 20). Creating isovist polygons from specific points is relatively straightforward and can be performed by hand. However, isovists can be generated with almost immediate speed through several automated programs developed in the architectural community. I have used the stand-alone program known as Depthmap, created by Alasdair Turner of the University College London's VR Centre for the Built Environment.[23]

[23] I am very grateful to Alasdair Turner for his help in getting me set up with this excellent program.

Figure 20 shows the isovist, or area, that is visible from a point placed on the eastern side of Room I.J, almost against the wall. This location is likely where the king's throne was placed in the building, if we accept analogies from neighboring contemporary sites such as Zincirli. The isovist from this point illustrates the large area of visible space from that point. As such, it is an exciting way to approach the experience of being in this space from that individual's perspective (Benedikt 1979). Not surprisingly, we see that the king (or, for that matter, anyone standing or sitting in this place) had a commanding view of the space before him. On its own, however, the isovist can only be so informative, particularly in buildings with square or rectangular rooms, such as Building I/VI, since the isovist does not tell us much more than we could already determine from the plan.

One way to utilize isovists in relation to the larger building might be to construct various isovists from different locations within a building and in that way begin to appreciate the experience of space as an individual moves through the building. Such a process, however, would be time consuming and visually inefficient. Instead, to incorporate isovists into the visual properties of the building at large, we can perform visibility graph analysis (VGA) (Turner et al. 2001). Operationally, the first step of VGA is to create a graph from which a number of properties can be calculated and displayed visually. Turner and his colleagues have devised a method for creating such a graph, and the accompanying piece of software, Depthmap, does the calculating and display. Creating a visibility graph involves filling a building with a number of points at a fixed distance from one another. I have filled Build-

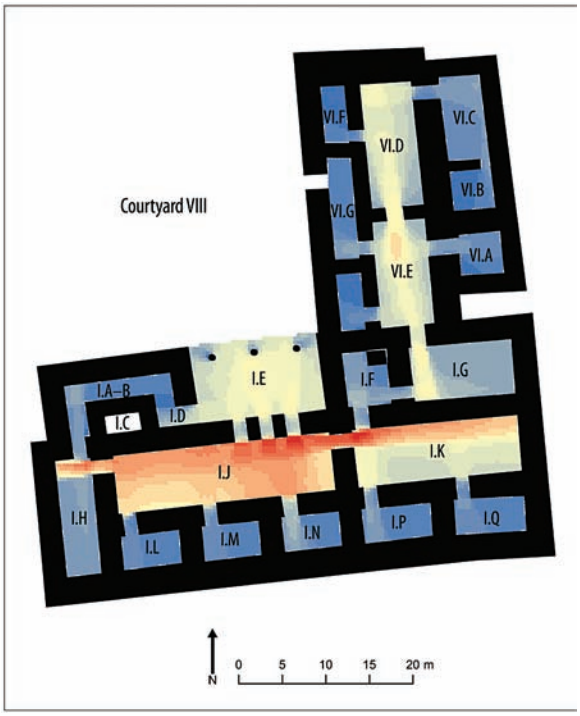

Fig. 21. Visibility graph of Buildings I and VI, blues showing low intervisibility, reds showing high. Base drawing courtesy of the Oriental Institute Museum.

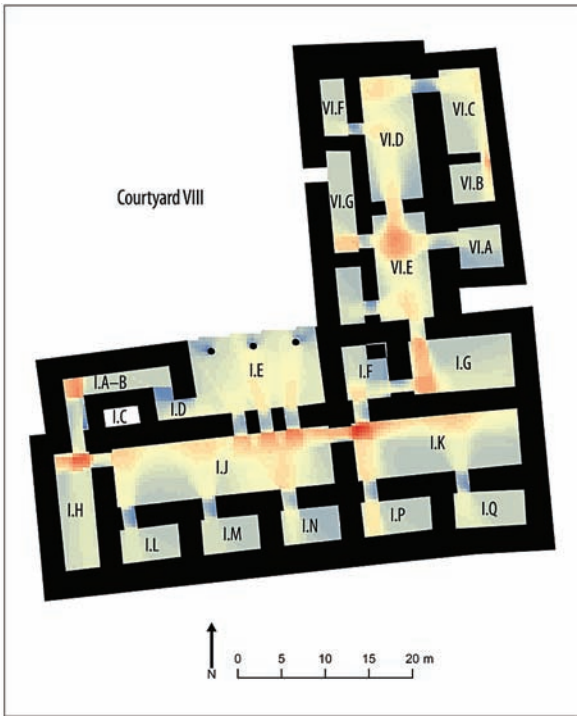

Fig. 22. Visibility graph of Building I/VI illustrating visual control. Base drawing courtesy of the Oriental Institute Museum.

ing I/VI with points 40 cm away from one another, with the intention of balancing the approximate width of a human body and achieving as high a resolution as possible. This stipulation results in 7,310 points within the interior space of Building I/VI. Depthmap then calculates the number of points visible from every other point in the graph, and colors the points (or rather, colors a small box around the points) according to this number. Points that are only intervisible with a small number of other points are shaded in the blue range, and points that are intervisible with a large number are shaded in reds.

Figure 21 shows the outcome of this process, the visibility graph, for Building I/VI, displaying the property of intervisibility known as "connectivity," or which points are visible from which points. Figure 21 shows quite clearly that (1) visual connectivity is concentrated in Room I.J, which was very likely the throne room, or reception area, of the building, (2) that the connectivity is aligned primarily on an east–west axis along the north side of rooms I.H, I.J, and I.K (even accounting for the fact that red patches at the doorways between I.E and I.J are determined partially by Haines's speculative reconstruction of that doorway), and (3) intervisibility is strongest at the northwest corner of Room I.K, the junction between the east–west axis of Building I and the north–south axis of Building VI. Though informative in its own right, an additional benefit of the visibility graph of figure 21 is that it contains all the necessary information from which a series of syntactic properties can be determined. With this graph, we are able to isolate several visual properties of the palace complex (Turner 2004).

Figure 22 shows the property of "visual control," closely related to the control value of access analysis. As in access analysis, visual control is a local measure and is calculated in much the same way: "each location is first assigned an index of how much it can see, the reciprocal of its connectivity. Then, for each point, these indices are summed for all the locations it can see" (Turner 2004: 16). The results displayed in figure 22 for visual control have interesting differences from access control: whereas I.J had the greatest control over access, I.K has the greatest control over visibility. Here we see again the importance of the northwest corner of Room I.K, the most visually controlling location in the palace. It is therefore reasonable to propose that this specific location was occupied by an official who regulated circulation in either direction and who had a good awareness of the goings-on within the palace. This visually dominant location was well suited to maintain control.

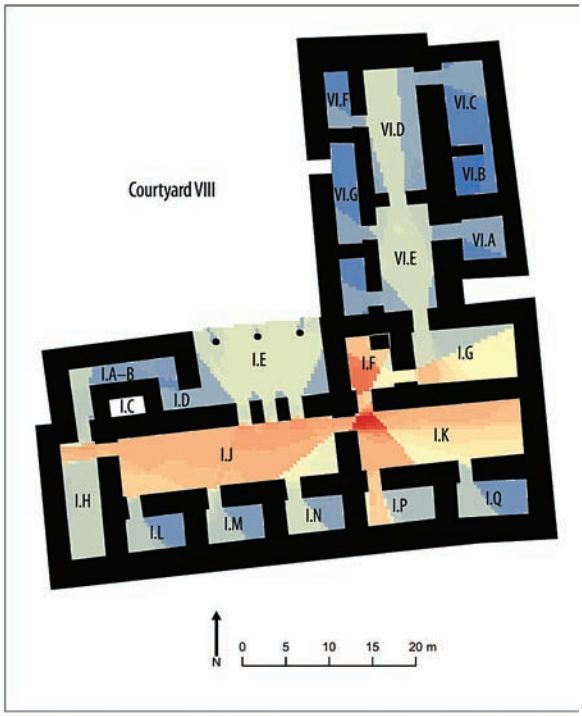

Fig. 23. Visibility graph of Building I/VI illustrating visual integration. Base drawing courtesy of the Oriental Institute Museum.

Likewise, "visual integration" is a normalized version of the mean shortest visual path from a point to all other points in the system (fig. 23).[24] The well-integrated spaces, shaded red, are visually shallow, while poorly integrated spaces, shaded blue, are visually deep. In the case of visibility analysis, it appears that the difference between visual control and visual integration is not overly significant. Although figures 22 and 23 show that Room I.J is characterized by a higher degree of visual integration than it is by visual control, the northwest corner of I.K has the highest values in both. Indeed, the visual integration shown in figure 23 gives the distinct impression of this small area drawing in its surroundings as if it possessed a gravitational force. Visual integration is negligible in the south bank of rooms in Building I and throughout Building VI especially, suggesting that these spaces were characterized by a high degree of restricted access and privacy. Visual integration is the property most closely correlated with empirically documented movement patterns of people through space (Hillier et al. 1996; Turner 2004; Turner et al. 2001). Although it cannot necessarily be known or demonstrated that people in the Iron Age behaved according to a similar correlation of visibility and movement, it is a reasonable proposal. If that correlation holds, then we have in visual integration further evidence suggesting that most of the movement within Building I/VI took place in the area in and behind the likely throne room, I.J.

As already described, space syntax analysis can only be conducted on relatively well-understood buildings. The western facade of Building VI is thus potentially problematic, since it has been mostly reconstructed by Haines. Modifying the layout of the outer wall of Building VI in the portion that has been reconstructed will not affect the access analysis already performed, since the syntactical relationships of the rooms remain the same regardless of how the layouts of the rooms are configured. However, since shifting doorways can affect lines of sight, the visibility graph analysis just conducted might change in different spatial configurations. For this reason, it is important to examine at least one other possible reconstruction of this space.

I noted above how Haines's proposed doorway from Courtyard VIII into Building VI seems incongruous with the entry to Building I. In light of Zincirli's suite of columned portico buildings surrounding a courtyard in the Unterer Palast (see Gilibert 2011: pl. 3 for competing scholarly reconstructions of this area), the doorway might equally plausibly be reconstructed as a portico, which would have the additional benefit of accounting for one or more of the three *ex situ* column bases found by the expedition (Haines 1971: pls. 113, 116–17). Modifying Building VI's entryway into a hypothetical double-columned portico with, as is the case with Zincirli's Building J, a long thin room to the left of the pedestrian as he or she stands in the portico facing the building, results in 7,533 points within the building's interior space using the same 40 cm interval postulated above. The visibility graph that results in the modified building plan is shown in figure 24. As with figure 21, this graph indicates connectivity, and is the base graph from which other visual variables are calculated.

Not surprisingly, figure 24 shows that opening the entrance of Building VI from a small doorway into a columned portico has completely altered the visual connectivity of the first few rooms into Build-

[24] There are several ways to normalize integration. The default method used by Depthmap is to apply Hillier and Hanson's *d*-values for access analysis's "real relative asymmetry" (1984: 111–13). Depthmap uses *d*-values automatically, as well as provides other normalizing options in case those are later found in empirical studies to be more accurate reflections of the use of space.

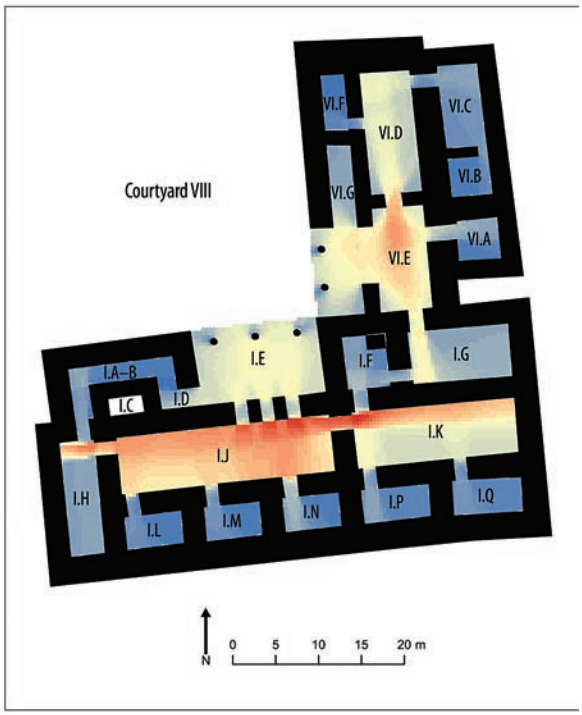

Fig. 24. Visibility graph of Buildings I and VI showing intervisibility with a hypothetical columned portico entrance into Building VI. Base drawing courtesy of the Oriental Institute Museum.

ing VI from the courtyard. In particular, it has rendered Room VI.E, Building VI's equivalent of Room I.J in Building I, far more visibly connected with the front of the building and, therefore, with the courtyard as well. If this reconstruction of Building VI's entrance is correct, then we have to consider the possibility that Room VI.E was potentially as significant a reception area for visitors entering the palace as was Room I.J.

However, it is also significant that the modified building layout has little or no impact on visibility beyond Room VI.E in any direction. The visibility graph of Building I is completely unchanged, as it is for all of the back rooms of Building VI. Even in Room VI.A, directly in line with the portico, the visual connectivity is essentially the same. This suggests that the findings discussed above regarding the *bīt-ḫilāni* as a whole remain basically consistent regardless of how one configures the entrance into Building VI. This same pattern—greater connections of visibility in the hypothetical portico and Room VI.E, but nearly identical connections everywhere else in the structure—is also attested in the visibility graphs for visual control and visual integration.

Discussion of Results

Several patterns have emerged from the preceding analyses of Buildings I and VI. Perhaps the greatest of these is that, generally speaking, Building I/VI can be characterized as having been at once relatively symmetrical, or integrated, but also nondistributed. Applying the social implications that Hillier and Hanson drew from these terms, we could say that the general symmetry of the palace complex encouraged the interaction of the inhabitants of the palace and its visitors. This conclusion of a relatively accessible interaction of insiders and outsiders was reaffirmed in the visual display of both access and visual indices, whereby the apparent throne-room and receiving area were repeatedly seen to be among the most integrated locations in the building, suggesting that receiving visitors was one of the main functions of this part of the building and likely one of the main roles of the king.

At the same time, however, the building complex is quite nondistributed, meaning that, in the case of almost every room, there is only one way to reach that space. The one exception to this principle is the linkage of Buildings I and VI created by the doorway between rooms VI.E and I.G. But more striking than that connection is the restricted access to spaces like the row of rooms at the southern end of Building I and the eastern end of Building VI. This too was attested in multiple ways, from the extreme disparities in control value between neighboring rooms to the complete visual seclusion of the back spaces. And even the one location where the building is syntactically distributed, the junction of Buildings I and VI, was shown through visibility graph analysis to have been the most tightly monitored location in the building, the northwest corner of I.K. In short, both access and visibility graph analyses indicate that inhabitants of the palace complex had a large number of opportunities to exert control over a pedestrian's movement by taking advantage of the building's spatial layout, a layout that encouraged, or at least permitted, such control to be effected.

The juxtaposition of the palace being both socially integrated and, at the same time, having a tendency toward spatial control, suggests that even while social interaction between visitor and inhabitant, or supplicant and king, could and likely did take place, that interaction could always be tightly supervised and controlled. The syntax of the building was such that it would only have required a few strategically placed individuals to ensure that no visitor could ever access parts of the

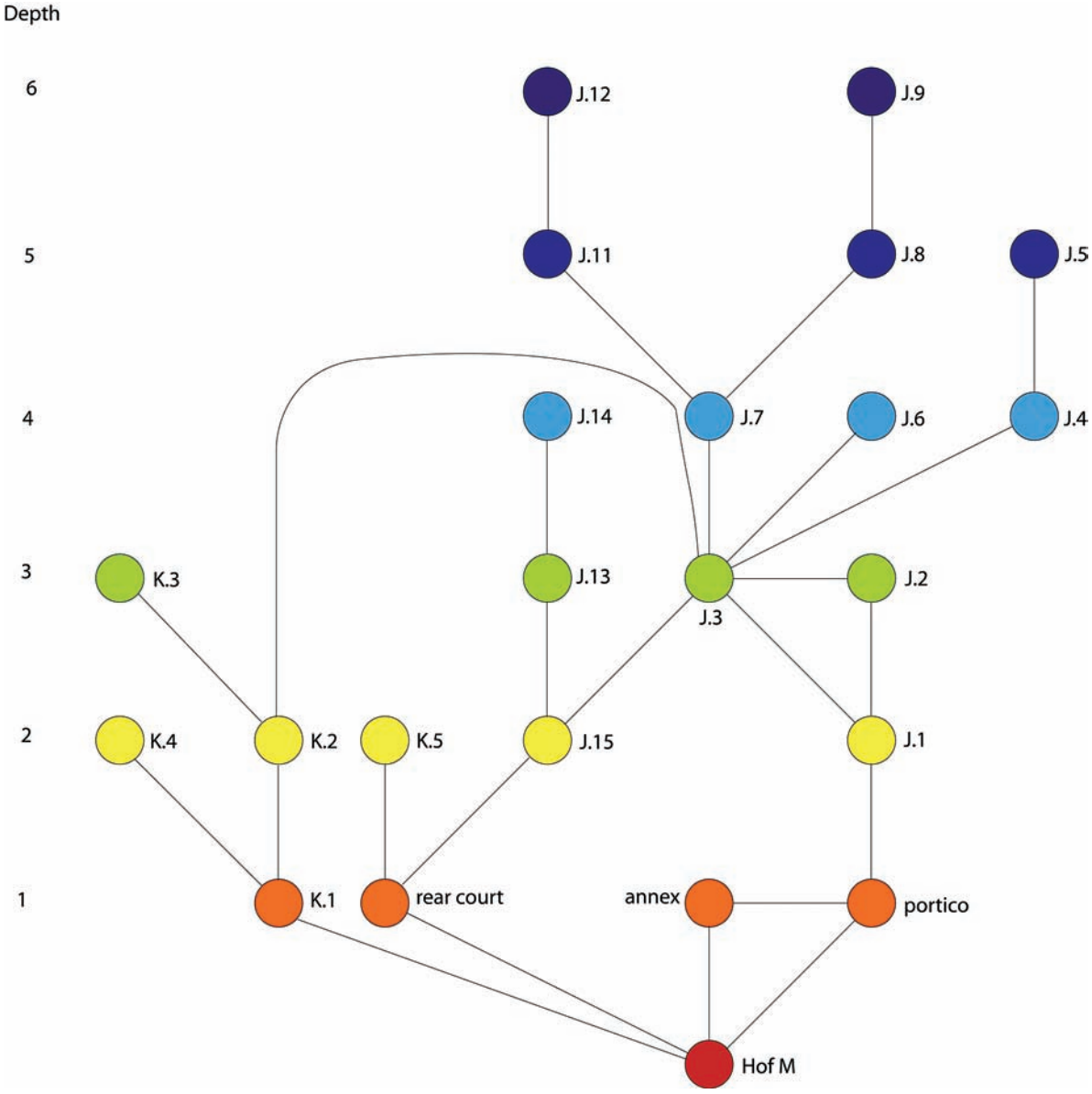

Fig. 25. Justified graph of *bīt-ḫilāni* Buildings J and K, Zincirli, colored according to depth. Graph generated by the author using AGRAPH software.

building that he or she was not meant to see. Social interaction between king and visitor was designed to take place—but strictly on the king's terms.

Tell Tayinat's *bīt-ḫilāni* was a good subject for space syntax analysis because of its relatively well-understood building layout. Most other *bīt-ḫilāni* structures are not sufficiently preserved to allow for analysis of this kind, primarily because of the absence of identifiable doorways between rooms, an essential feature for either access or visibility analysis to be successful. Such is the case, for example, with Building IV from Tayinat itself (Haines 1971: pls. 96–97), Kapara's palace at Tell Halaf (Naumann 1950: plan 4), and all of Hilanis I–IV at Zincirli (Luschan, Humann, and Koldeway 1898: pls. 26–28).

The only structure with a sufficient level of preservation for comparative purposes is the complex of Buildings J and K in Zincirli's northwestern area (Luschan and Andrae 1943: pl. 50). Though Building J does have a small number of doorways whose exis-

TABLE 2. Syntax Values for Zincirli, Buildings J and K, with Hof M as Carrier

Room	*Depth (from Hof M)*	*Total Depth*[1]	*Mean Depth*[2]	*Control Value*	*Relative Asymmetry*[3]	*Integration*[4]
Hof M	0	69	3.14	1.50	0.204	4.90
Portico	1	67	3.05	1.08	0.195	5.13
Annex	1	78	3.55	0.58	0.243	4.12
J.1	2	58	2.64	0.98	0.156	6.41
J.2	3	61	2.77	0.48	0.169	5.92
J.3	3	44	2	3.33	0.095	10.53
J.4	4	63	2.86	1.14	0.177	5.65
J.5	5	84	3.82	0.50	0.269	3.72
J.6	4	65	2.95	0.14	0.186	5.38
J.7	4	57	2.59	1.14	0.151	6.62
J.8	5	76	3.45	1.33	0.233	4.29
J.9	6	97	4.41	0.50	0.325	3.08
J.11	5	76	3.45	1.33	0.233	4.29
J.12	6	97	4.41	0.50	0.325	3.08
J.13	3	73	3.32	1.33	0.221	4.52
J.14	4	94	4.27	0.50	0.311	3.22
J.15	2	54	2.45	0.98	0.138	7.25
Rear court	1	63	2.86	1.58	0.177	5.65
K.1	1	65	2.95	1.58	0.186	5.38
K.2	2	56	2.55	1.48	0.148	6.76
K.3	3	77	3.50	0.33	0.238	4.20
K.4	2	86	3.91	0.33	0.277	3.61
K.5	2	84	3.82	0.33	0.269	3.72

Source: AGRAPH (Manum, Rusten, and Benze n.d.)

[1] TD = Σd_k, where d_k represents the depth value for each space k.

[2] MD = Σd_k / (k – 1), where Σd_k is the sum of the depth values d for each of the k spaces.

[3] RA = 2(MD – 1) / (k – 2)

[4] I = 1/RA

tence can only be hypothesized, the layout as a whole is sufficiently well understood to allow for space syntax analysis. Furthermore, the building complex consists of a joined pair of buildings much like Tayinat's Buildings I and VI, and the iconography of the column bases in the portico of Building K is so much like that of the Tayinat column bases that the two buildings must be broadly contemporary (Naumann 1971: 365–66; Winter 1973: 232–35), even though the final layout of the palace at Zincirli is the outcome of a complex constructional history (Pucci 2008: 34–37).

Without going into a full-fledged analysis of the Zincirli *bīt-ḫilāni* palace complex here, figure 25 illustrates the j-graph for the combined Buildings J and K structure at that site, and table 2 presents the same syntax values that were calculated for the *bīt-ḫilāni* at Tayinat. Building J/K has almost the same number of rooms as the Tayinat example (22 in Zincirli's Building J/K and 20 in Tayinat's Building I/VI); but despite this similarity and the basic resemblance in plan, the j-graph of Building J/K is noticeably different from the Tayinat example. The graph shows that Building J/K is significantly less symmetrical in plan, which indicates that there was a greater possibility for segregation between social groups using the space, such as visitors and inhabitants. The two causes of this difference

from the Tayinat *bīt-ḫilāni* are the rear entrance into Building J through Room J.15, an entrance that has no equivalent at Tayinat, and the relative shallowness of Building K. With respect to nondistributedness, however, the two buildings are similar: Zincirli's Building J/K is likewise characterized by several rooms having only one way of being accessed, suggesting, as with the *bīt-ḫilāni* at Tayinat, that spatial control was easily achieved by the inhabitants of the building.

Other similarities include the spatial seclusion of the rooms at the rear of Building J, closely paralleling the back rooms of Building I/VI at Tayinat, and, most significantly, the disproportionately high control value of a single room in the palace, Room J.3. As table 2 shows, Room J.3 exerts more than twice as much control as any other space in the building complex, though it must also be noted that it is precisely these doorways between J.3 and the rear rooms J.4, J.6, and J.7 that are conjectural (Frankfort 1952: 124). The presence of a large brick hearth at the west end of this long room supports the syntactical indication that Room J.3 was the most significant space in the building for receiving visitors, and that it likely served as a throne room. (Room K.2 appears to have been another and also has a relatively high control value.) Indirectly, the high control value of Room J.3 at Zincirli also buttresses the argument that Room I.J at Tayinat was itself a throne room, even though no hearth or similar feature was found in it.

Such similarities in the syntactical properties of *bīt-ḫilāni*s Building I/VI at Tell Tayinat and Building J/K at Zincirli lend credence to the generally accepted assumption that the *bīt-ḫilāni* palace is a coherent and identifiable building type that likely played a similar role at every site in which it is found. However, the differences that were identified, especially the symmetry of Tayinat's Building I/VI compared with the asymmetry of Zincirli's Building J/K, indicate that it remains essential to regard each manifestation of the *bīt-ḫilāni* on its own terms, and in its own unique archaeological context, before making social or political interpretations based on deceptively similar parallels.

CONCLUSION

The most productive way to explore political authority in the *bīt-ḫilāni* is to treat it from two perspectives: on the one hand, there are the qualitative insights offered by an examination of the ancient textual and iconographic records, and on the other, there are the benefits gained from more abstract, formal reasoning. By combining the two in a specific case study, this paper has attempted to move the discussion of the Iron Age *bīt-ḫilāni* palace beyond typology and etymology to the more significant questions of power and meaning.

A consistent theme running throughout the corpora of works of art and historical inscriptions, both Syro-Anatolian and Assyrian, is the importance of the royal throne and its nature as an object that fused the idea of legitimate kingship, the royal symbology of the palace, and the body of the king himself into a single object—or "semi-fixed feature element," in the phrasing of Rapoport's nonverbal communication—that communicated these messages to the viewer. This theme appeared in unexpected places, such as the furniture fittings seen in Neo-Assyrian palace reliefs, Luwian inscriptions that equate the establishment of the throne with acquiring rulership, Tiglath-pileser III's account of his own capture of Kunulua (". . . I set up my throne . . ."), and, of course, the monumental throne fragments that were discovered in the courtyard before Tayinat's *bīt-ḫilāni* and whose formal properties clearly demonstrate the visual equivalence of throne and palace.

This ubiquitous thematic consistency, together with the number of isomorphisms across multiple media—too many to be mere coincidence—is extraordinary unto itself, but additional insight into the relationship of the palace and political power was gained when we looked to the quantitative methods of space syntax. These analyses illustrated aspects of the actual performance of kingship in space. One of these aspects that became clear over the course of the analysis was the unique significance of Room I.J in Building I, a room that, if cultural and regional parallels are valid, can only have been the throne room of the palace. The palace was laid out in such a way that encouraged interaction at the interface of visitor and king but that nevertheless restricted visitors in their freedom of movement and kept them within this reception area. To demonstrate the meaningful relevance of this fact, consider that, once restricted to the reception area by the syntactical properties of the *bīt-ḫilāni*'s layout, the visitor to this building occupied an architectural space that was constructed out of symbols associated with kingship—columns, column bases, capitals, and the like—and shared that space with the throne, an unmistakable symbol of kingship (with or without the presence of the king), which was itself built out of architectural elements associated with the palace—columns, column bases, and volute capitals. These associations were present in writing and artistic display,

just as they were present in physical space, to ensure the greatest possible efficacy of the *bīt-ḫilāni*'s message of political authority. The tightly bound nexus of symbols that the *bīt-ḫilāni* embodied communicated the unmistakable message of authority to all who entered it, just as did the orientations of the walls themselves.

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