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# Architecture, Materialization and the Duality of Structure: a Maya Case Study of Structurally Shaped Innovation

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*This article addresses the problem of structural determinism in archaeological explanations of material culture change, specifically architecture. A discussion of Giddens' structuration theory emphasizes the duality of structure. The concept is updated by drawing on Gell's theory of agency in art and recent ideas on play, innovation, freedom and consensus prevalent in anthropology and archaeology. This approach shows that material culture is changed through structurally shaped innovation, such that agency is distributed across time, among groups regionally and among elites and commoners. The theoretical exposition develops a case study including discussion of an architectural grammar, ethnohistoric analogy and activity-area studies involving ceramic incense burners. The case study is the Classic–Postclassic transition (AD 750–1200) among the Maya of Petén, Guatemala. While earlier explanations of architectural change in this region focused on an in-migration event, the current investigation posits a Postclassic reconfiguration of Maya architecture, specifically changes in 'C'-shaped stone benches, based on structurally shaped innovation and a distributed view of agency. The benches served as stages for more heterarchical ritual performances with the incense burners as opposed to the hierarchical ritual performances common in the Classic period. This account overcomes structural determinism by allowing for diversity and cultural specificity in our views of agency.*

In a review article, Joyce and Lopiparo (2005) lament the false division of structure and agency in archaeological theory. They demonstrate that archaeologists often fall into structural determinism, despite the widespread use of agency theory in archaeology. The duality of structure concept can overcome this problem, but while the concept is crucial to Giddens' (1979; 1984) structuration theory, it is poorly developed within his own body of work. Others (e.g. Sewell 1992) have tried to apply the concept through various critiques and amendments, as I discuss below. Integration of the duality of structure concept in structuration theory and recent work on the materialization of culture as an active locus of agency potentially can help to overcome this false division.

The duality of structure concept indicates that structural properties of social systems are both medium and outcome of the practices which they

recursively organize. For archaeologists trying to use this notion in their work, Giddens' (1984, 25) lack of discussion of it is compounded by biases in archaeology. Pauketat (2000; 2005) notes that in complex societies agency is often ascribed to the urban elites while rural commoners have deterministic roles in explanations (Schwarz 2004; cf. Adams & Jones 1981; Eickelman 1989; Ball & Taschek 1991, 157). Another problem is that archaeologists believe agency to be active across a broad range of processes from the formation of states, to the creation of buildings and even choices of pottery decoration (Dobres & Robb 2000; Pauketat & Alt 2005). However, discussion of the divergent spatial and temporal scales involved in these processes and their interlocations with agency has not been developed fully (Barrett 1988; 2000; Dobres & Robb 2000). Giddens' (1984, 119–32) structuration theory provides little information on understanding human agency in



**Figure 1.** Map of the Lake Petén region, Guatemala showing the location of sites discussed in the text.

architectural design, where styles shift over decades, or in other forms of material culture production, while he discusses extensively day-to-day social encounters, specifically how architectural settings help to structure these encounters (McCall 1999, 18).

In order to contribute to rectifying this situation, I here present a discussion of agency and structuration theory and a case study, relating to the Classic Maya Collapse. The analysis, focusing on the Petén Lakes region, Guatemala (Fig. 1), discusses an architectural grammar (Schwarz 2004), ethnohistoric analogy and activity-area studies, specifically censer ritual. In particular, this article examines the increased use of 'C'-shaped masonry bench structures and ceramic censers in certain contexts during the Terminal Classic (AD 800–1000) and Postclassic periods (AD 1000–1525) (Figs. 2–3). Rather than seeing the adoption of these benches and censers as indicating in-migration of outsiders into the Petén region, a popular hypothesis (Thompson 1970; Fox 1980; 1987; Tourtellot 1988; Webster 2002), I infer that agents within smaller Postclassic communities reformulated their own material culture. This article makes three interrelated points:

1. rural commoner agents undertook significant and effective action in the wake of the decline of central authority, leading to important changes in architectural design and censer ritual; they were agents partially determining their own material culture;
2. agency works on different temporal and spatial scales and integrally involves material culture, in

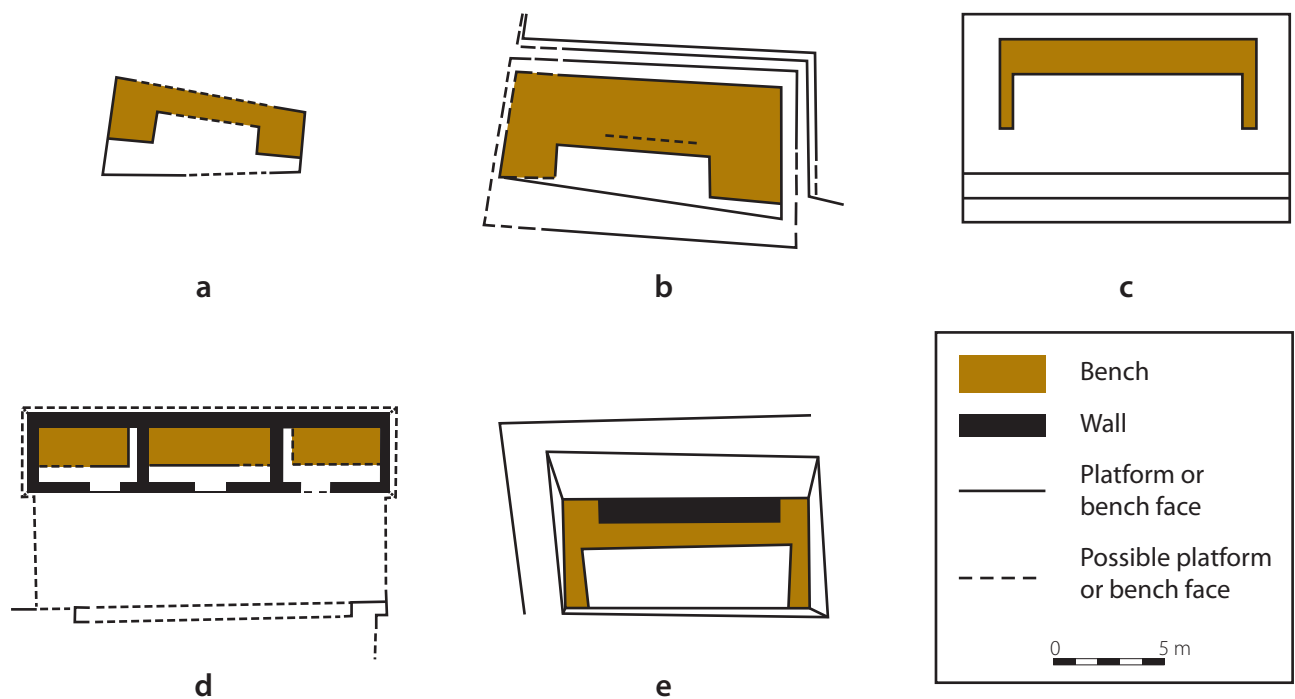
ways that are undertheorized by Giddens (1984) and Bourdieu (1977); and

3. archaeologists should view agency as distributed through objects and buildings through time to overcome previous static conceptions of agency (Gell 1998; Keane 1997; 2003; Gosden 2004, 171).

The key to understanding the reformulation of material culture resides in recent ideas in archaeology and anthropology on play, innovation, freedom and consensus, as I describe below (Sewell 1992; Keane 1997; Gell 1998, 256; Buchli 1999; Meskell 2004; 2005a; Joyce & Lopiparo 2005; Miller 2005). These above-cited authors deal with how artefacts are materialized in cultures and how material culture change comes about. Their ideas involve broadening our consideration of agency so that:

- agents are seen as changing material culture through structurally shaped innovation (Sewell 1992);
- agency resides congealed within material culture;
- agency is distributed across time;
- agency is distributed among groups regionally (Gell 1998); and
- agency is distributed among elites and commoners (Buchli 1999).

In this view, agential forces are present wherever we encounter an effect; agency is distributed by some subjects upon others and the creative products of a person or persons are distributed across social space and time with myriad effects, both intended and unintended (Miller 2005, 12–13). It is the working out of this distributed agency through people and objects



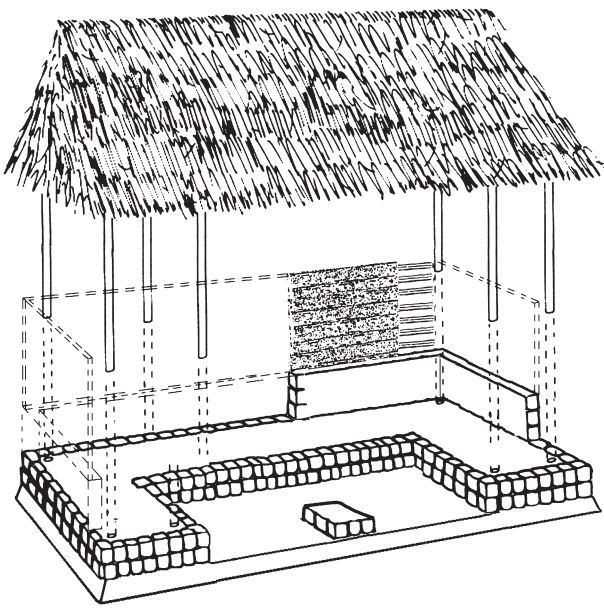
**Figure 2.** Examples of bench structures in Central Petén discussed in text: a) *Tepijilote-Bayal phase Seibal C-32d* (Tourtellot 1988, 100); b) *Bayal phase Seibal A-38* (Tourtellot 1988, 120); c) *Dos Pilas N5-3/3A, a presentation palace* (Demarest et al. 2003, 125); d) *Tikal 4H-14* (Becker 1999, fig. 35); e) *late Late Classic/Terminal Classic bench structure at Michoacan* (Rice 1986, fig. 9.7).

that makes up a large part of the history of events and processes which anthropologists and archaeologists study (Keane 1997; Gell 1998). These newer views are compared against expectations derived from structuration theory and practice theory and these theories modified accordingly.

For example, while Bourdieu's (1977) practice theory reveals the role Kabyle houses play in structuring social life, the 'agent-proof' quality of Bourdieu's practice theory and the snapshot character of his ethnographic work (Sewell 1992, 15) mean that his theory is inadequate for some archaeological tasks. Bourdieu's *habitus*, or habitual dispositions, appears to have the weight and stasis of tradition. It is the sedimented accretion of history, but Gell (1998) demonstrates the spatiotemporally distributed and dispersed nature of agency in material culture as agents change it, so clearly agency can be encountered in architecture and the activities that take place within the built environment. Maya archaeology is replete with examples of stonecutters remaking building designs and meanings attributed to the built environment and through their actions changing the material reality with which people contend on a day-to-day basis.

Miller (2005) remarks that we need to set Giddens' and Bourdieu's models in motion. Joyce and Lopiparo (2005) suggest that a version of practice or structuration theory that allows for more freedom of action is needed in archaeology. It is both the degree to which freedom of action jostles with convention in the materialization of culture and the scale and pace at which different kinds of change (Barrett 1988; Gosden 1994; Thomas 1996; Hodder 2000; Kohring *et al.* 2008) occur that are undertheorized. A modified version of structuration theory could help understand the materialization of culture over time. This article contributes toward developing such a theory by discussing how current ideas about play, innovation, freedom and consensus can be used to better understand ritual practices in general, and the development of heterarchical ritual practices<sup>1</sup> among the Maya, specifically.

Changes in the design of Postclassic Maya open halls, which were used as stages upon which ritual activity was enacted (Schwarz 2009), took place on a multi-decadal time span, and supplanted hierarchical ritual that reproduced the political system in the Classic period. Regionally, a mosaic pattern of change evidenced across the Central Petén, Guatemala (Schwarz 2009) and the complexities of the architecture mean



**Figure 3.** Postclassic bench structure. (Adapted from Tourtellot 1988, fig. 7.)

that one should model negotiations and interactions among multiple agents or collectivities over an extended period as having been responsible for the resulting pattern (Gell 1998; Glassie 2000; Knapp & van Dommelen 2008).

Gell's (1998) theory of agency in art demonstrates that material objects can be ascribed the qualities of agency, at least a qualified, secondary or partial agency within a culture (Robb 2005, 132; Preucel & Mrozowski 2010a, 17).<sup>2</sup> He discusses the agential qualities attributed to artworks and by extension certain items of material culture (Dobres & Robb 2005). His work focuses on ways in which the production and use of art or other material culture occur within a network of social relations, as I elaborate below. Masonry benches are conceived of as extended artefacts, endowed with agency by their creators and patrons and, having long time-scale life histories, they create fields of social action that reverberate for decades (Robb 2005, 132–3). Gell's (1998) discussion of the interrelationships between artists, patrons, prototypes and recipients in art and material culture production is also useful here, as I describe below.

This article also focuses on assessing the importance of effigy censers in Petén. Censers come in a variety of forms and include ceramic vessels decorated with spikes, ceramic ladles and modelled depictions of gods and ancestors. Although long studied as ceramics or sculpture, the use of effigy censers by the ancient Maya has seldom been seen in dynamic performative

contexts, outside of royal censer ritual and even then static portrayals are common. Meskell's (2004; 2005a,b) work on ancient Egypt is also noteworthy as a comparison. She described how statuary and other imagery were materializations of socioreligious relationships within ancient society. Materialization ties to notions of the divine. Specifically, Egyptian statues were an 'instantiation of individual permanence' (Meskell 2005a, 53). Statues were conceived of as being born, not made, having clothing and receiving food and drink offerings. This is similar to how recent northern Lacandon Maya treated their god pots, a form of effigy censer. The Egyptian statuary 'as a supra-object was considered an effective and legitimate agential intermediary' in agential exchanges (Meskell 2005a, 57). Images were conceived of as having an active role in social life and were not simply symbols or vehicles, but were materializations of the gods themselves, a point I make for my case study as well. The use of anthropomorphic or effigy censers within and adjacent to Petén Maya buildings was a materialization of socioreligious practice that tied practitioners to their gods and ancestors (Gillespie 1999; Pugh 2001; 2002; Schwarz 2009).

It is important to conceptualize the kinds of intricate exchanges among agents that characterize 'object worlds' in archaeological studies (Meskell 2004, 2) of material culture. Meskell (2004), Joyce (2011) and others have shown that Gell's theory of agency and objects can be operationalized in archaeology if enough relevant contextual data are brought to bear on a case study. This article describes briefly what has been written about Maya benches, focusing on the Classic–Postclassic transition period. Bench structures from different sites are evaluated as an object world to develop insight into the historical development of this architectural form (Glassie 1975; Muller 1979; Chipindale 1992; Preucel 2006). Ethnohistoric analogy derived from northern Lacandon Maya censer ritual within god houses helps the reader to contextualize the nature of agential exchange. The Lacandon conceived of the god house as an animated semiotic environment<sup>3</sup> and this environment appears similar to the bench structures of the archaeological case study (Schwarz 2004; Pugh 2009) and certain Classic period structures. Thus, the exploration traces the cultural specificities of shifting realms of material culture (Meskell 2004) within a sociological context, structuration theory, which is modified to accommodate an appreciation for changeable materialities (Meskell 2004; Miller 2005). This viewpoint supports an expansive conception of agency and the capacity for innovation within social life (Sewell 1992; Gell 1998; Joyce & Lopiparo 2005).



### Duality of structure and social change

Some archaeologists adopt structuration and practice theory in critique of certain processual or historical explanations of social change (Burley *et al.* 1992; Robin 1999; 2002; Funari & Zarankin 2003; Schwarz 2004; 2009; Hutson & Stanton 2007; Wynne-Jones & Kohring 2007; Coupland *et al.* 2009; Preucel & Mrozowski 2010b). As Joyce and Lopiparo (2005) state, most of these works describe structure and agency as being opposed or in a dialectical relationship or they posit a historic process of alternating periods of little change or consensus (structural determination) and innovation (agency). My own earlier work included, most studies do not make specific statements about degree of freedom of action, nor do they derive from defined philosophical stances. They come to structuration or practice theory from an exasperation at the lack of appreciation of human dynamics (e.g. lack of attention to choice or resistance) in much earlier archaeological work (Hodder 1982; Johnson 1989; Robb 1999; Dobres & Robb 2000). In addition, they are attracted to the sociological sophistication present in Giddens' (1979; 1984) structuration theory and the seeming applicability of Bourdieu's (1977) practice theory that relates directly to architecture.

Other archaeologists take a discontinuous view of culture change that divorces structure from agency in an effort to rescue archaeology from structural determinism. Their views derive partly from an *a priori* opposition to explanations that invoke the structuring effects of material culture in society (Shanks & Tilley 1987a,b; Tilley 1991; 1999; 2001; 2002; Gosden 1994; Buchli 1999). They take a position of radical agency or ambiguity (Preucel & Mrozowski 2010a) because they posit that unfettered by the shackles of structure there is a free form working-out of culture that is visible in artefacts. These works have various philosophical bases, including deconstructionism, phenomenology and realism. For example, Buchli (1999, 5, 12), in his study of post-Soviet Russian architecture, states that structuration and practice theory are 'consensus theories of material culture', i.e. spent forces that cannot explain why or how a society changed its architecture because these theories cannot deal with the 'play' inherent in the creation of material culture (cf. Preucel & Bauer 2001, 86).

With a more expansive view of Giddens' structuration theory, rather than jettisoning the structure–agency relationship, which has roots in Western philosophy and social science (Sewell 1992; Gerrans 2005), one can clarify and modify structuration theory for archaeological purposes to overcome structural determinism. Focusing on the duality of structure concept, Joyce and Lopiparo (2005, 365) wrote that

structured agency is inseparable and has the capacity to 'recapitulate and transform prior actions...' such that 'sequences' are created 'that we can recognize as structures at the scales of the individual technical practice to collective coordinated experience'. Structure is both the medium and outcome of human activities which it recursively organizes (Giddens 1995, 107). Structures are rules and resources, or sets of relations, organized as properties of social systems, which are activated by social interaction. Structures include signification, such as modes of communication, domination, such as political power, and legitimation, such as norms or religious institutions. Structure both constrains and enables social action. Even actions that disrupt the social order by breaking conventions are mediated by structured forms, leading to a reconstitution of structure by the same action, although in a modified form (Giddens 1995, 239). The relationship of structure and agency is interconnectedness that belies simple opposition (Kirk 1991, 109; Hays 1994, 59). Most critically, the duality of structure concept means that agents can innovate or improvise in 'structurally shaped ways that significantly reconfigure the very structures that constituted them' (Sewell 1992, 5). This point was not mentioned in Giddens' formulation of the theory but Sewell's amendment to structuration theory is potentially useful for archaeology.

### Terminal Classic transition

Archaeologists have viewed the collapse of Classic Maya states as the result of deterministic processes such as inter-elite competition and warfare (Webster 2002; Demarest *et al.* 2004) or environmental change (Gill 1998), among other reasons. Debates on the Maya Collapse include the roles of elites and commoners (Culbert 1973; Chase & Chase 1992; Lohse & Valdez 2004) and cultural dynamics leading to the collapse (Demarest *et al.* 2004; Schwarz 2004; Aimers 2007). In the Central Petén, building of monumental architecture declined during the Terminal Classic period (AD 800–1000), and the decline is considered a major indicator of this collapse. It should be noted that this article does not attempt to determine the cause(s) of the Classic Maya Collapse itself or comment on the utility of the concept, but rather focuses on the problem of structural determination in explanations of material culture change in archaeology. Specifically the article examines how human agency, including agency distributed through changing use of architecture and portable incense burners, figured in the Classic–Postclassic transformation of society, particularly in small communities, and thus how the rural Maya navigated the Collapse period.

A group of archaeologists thought that in-migration of outside ethnic groups was a causal event in the Maya Collapse (Thompson 1954; 1970; Fox 1980; Tourtellot 1988). Some scholars still hold to this view (Webster 2002). One strain of this thinking is that certain architectural and artefact styles arrived with Terminal Classic migrants, in effect, were transplanted into Petén during a period of change for example from the Petexbatún region (Fig. 1; Webster 2002). Archaeologists linked 'C'-shaped bench structures (Figs. 2 & 3) and central altars in plaza groups (Becker 2003) to the in-migration of Maya or non-Maya peoples (Thompson 1970; Fox 1980; 1987). Archaeologists have seen Seibal, which had a late florescence and large numbers of these 'C'-shaped bench structures, as influenced by these hypothesized in-migrants (Rice 1986; Tourtellot 1988) (Fig. 2a,b). Recent reconstructions of the Terminal Classic period, particularly in certain regions, posited cultural and population continuity (Rice *et al.* 1998; Andres & Pyburn 2004; Rice & Rice 2004; Schwarz 2004; 2009) and have sought to understand continuities and transformations, including how the failure of Classic states may have created conditions for smaller communities to express emergent identities and local autonomies. 'C'-shaped benches were also prevalent at late sites in other regions of the Maya Lowlands, such as Yucatan, Mexico. At Ek Balam, Structure GS-12-1 is a platform with a 'C'-shaped bench facing two shrines (Bey *et al.* 1997, 238). Platforms with 'C'-shaped benches and walls are present at other Terminal Classic to Early Postclassic sites like Uxmal and Sayil, Yucatan (Tourtellot *et al.* 1992) and Lamanai and Actuncan, Belize.

Maya benches have diverse origins and manifestations in the Preclassic and Classic periods though and the Terminal Classic florescence of stone benches is but one moment in the history of this architectural form. At Tikal, structures that have 'C'-shaped benches with armrests date as early as the Late Preclassic (250 BC–AD 250) (Valdés 2001, 154–6; Harrison 2003, 86–94). Some are thrones and some benches are interpreted as sleeping platforms or other forms of domestic furniture. At Classic Dos Pilas, Guatemala, an open-fronted 'C'-shaped hieroglyphic bench, N5-3/3A, sat at plaza level. Demarest and colleagues (2003) hypothesized it to have been a presentation palace where the Maya royalty received visitors and royalty viewed ceremonies (Valdés 2001, 151–2). Possibly, the public viewed these ceremonies from the nearby plaza. 'I'-shaped and 'U'-shaped benches at Copán, Honduras, including hieroglyphic benches, provide some of the most direct evidence of the use of benches in the Classic period, as described below.

'C'-shaped bench structures occurred in a variety of settings from the presentation palaces and thrones that are present in acropoli (the built-up civic-ceremonial centres), elite residences and range structures. Range structures are long, low masonry buildings with multiple rooms, each with a single doorway, arranged horizontally along the edge of the plaza. Their functions are unknown. 'C'-shaped benches also occur in certain masonry structures in quadrangular structure groups arranged around plazas (generally interpreted to be houses) (Becker 1999).

At Copán, hieroglyphic benches illustrate a sense of the hierarchical, divinized settings prevalent in certain Late Classic period bench structures at a polity centre. El Grillo seat (Structure 10-K4) is in an elite domestic plaza group next to the main acropolis of Copán. A stonecutter carved an 'I'-shaped bench inside this masonry structure and dedicated it to himself. Noble (1999, 270) translates the hieroglyphic inscription as: 'Dedication of the lordly carved (the) sun-sky seat, his seat, Kean-Chan (a personal name) the youthful heir of the first sacred territory, he the supernaturally sanctioned one'. Noble (1999, 142) states that the seat, *kun*, belonged to a lineage patron who employed cosmological, patriarchal and socio-political references to reinforce the existing political order. Grube and Martin (1998) proposed that the final glyph *aj-na-be*, 'the supernaturally sanctioned one' may also be read as 'stonecutter' (Noble 1999, 142).

The famous House of the Scribes, Structure 9N-82, is a 'U'-shaped bench at an elite residence at Copán that was occupied by a royal scribe. The bench is carved with images of Pauhahtunob and the Cosmic Monster (mythological beings), along with hieroglyphic references to the scribe's lord, Yax-Pac, the divine king of Copán. Hieroglyphs on the bench, which are only partially translated, indicate that the scribe '...dedicated his house Mak Chanil the child of Lady Aj-Kin, the successor of Kuk-Kawil (unknown verb) he burned copal in the censer (??? unknown name), it was made of clay, the house offering...', and then a direct reference to Yax-Pac is made (Schele & Freidel 1990, 330–31).

Fash (2000, 131–5) called Structure 22A at Copán a *popol nah*, or community house, a designation that emphasizes a public political function for bench structures. Façade texts reference lineage heads who appear to have been supernaturally sanctioned. The last three Copán rulers brought together representatives of the various lineal subdivisions of the kingdom at this *popol nah* for apparently political activities. Other studies of bench structures suggest cross-cutting political, religious, ritual and domestic functions and considerable diversity in uses (Tourtellot 1988; Schwarz 2004).

Structures 9N-82 and 10-K4 demonstrate what little is known about artisans of the time, stonemasons and scribes, and their patrons as well as how benches were animated with iconography and hieroglyphs, effectively divinizing these settings, while referencing and reproducing the political hierarchy. Structure 9N-82 shows how censers played a role in rituals that took place at benches, in this case a house dedication.

Maya stone benches also have been identified as ancestor veneration shrines (McAnany 1995; Gillespie 1999). Gillespie (1999, 234–40) gathered published archaeological evidence and ethnohistoric accounts demonstrating that low altars and stone benches were two of multiple forms of such shrines that provided a ‘focal point for contact with the supernatural realm’. In the elite context, benches are implicated as ‘seats-of-authority’ in which authority and legitimacy were connoted by the ancestral connections invoked (Noble 1999, 93; Christie 2003). Venerative practices included placement of burials in benches and altars, use and deposition of anthropomorphic and non-image censers, and making of offerings at these benches and altars. Evidence of these activities is found at regional sites (Pugh 2001; 2009; Schwarz 2004; 2009). Ethnohistoric documents record the display of statuary in such settings (Thompson 1951; Gillespie 1999). Effigy censers can be interpreted symbolically as simply representing the gods and ancestors. But, based on the realization that agency can be ascribed to objects in many cultures (Gell 1998; Meskell 2004; Miller 2005) and on ethnohistoric evidence detailed below, these rituals created an animated presence of the deity or ancestor, in the form of the effigy censers. In the elite Maya context, Bachand and colleagues (2003, 245) argue that statuary was an instantiation of ‘the flesh’ of a Classic Maya noble rather than merely being solely symbolic of the noble. This point of view opens up consideration of the performance aspects of materiality, specifically focusing on distributed agency.

Previous reconstructions of architectural change (Fox 1980; 1987; Tourtellot 1988; Webster 2002) lacked perspectives on how architecture is structured by society, reciprocally how architecture structures society, and how a change in society might be reflected in architectural design practices and actions carried out within buildings. Instead, the focus was on overall resemblance of ‘C’-shaped benches in different sites and regions: similar forms were taken uncritically to indicate the ethnic identity of migrants arriving in the region (Kremer 1994; Jones 1997). A closer examination is needed of how the Maya changed their bench-altars and how they changed their uses of them.

In the discussion below, activity-area analyses of associated artefacts and features were the principal

means of determining the functions of bench structures. These activity-area analyses were described in greater detail in prior studies (Schwarz 2004; 2009). Inferences derived from the activity-area studies are supplemented by analysis of archaeological context and make use of the data and interpretations of other archaeologists (e.g. Tourtellot 1988; Pugh 2001). Also, the accounts of the Spanish missionaries who visited Petén Lakes Maya settlements are important because the missionaries saw and commented on their benches, altars, censers and statuary (e.g. Avendaño y Loyola 1987 [1705]). Considering these data sources, form was not the main means of assigning bench function. There were other uses for benches within Maya buildings as well, such as sleeping platforms and generalized domestic furniture. I have chosen not to focus on these domestic uses in this article but rather on benches in open halls, which were used as altars for rituals and as seats for important political and religious proceedings.

### Scale and innovation in material culture change

Multiple temporal and spatial scales of phenomena are visible in the operation of the social world. The localities, regionalisms and varying temporal rhythms of material culture production and distribution provide important frameworks by which objects, ideas, individuals and communities are constituted (Kohring *et al.* 2008, 103). Lifeways in ancient states developed along trajectories involving multi-decadal, subdecadal, yearly, seasonal and daily processes, some of which are cyclical, and operated at interregional, regional and local spatial scales (Barrett 1988; Gosden 1994; Thomas 1996, 38; Robb 2007, 287–341). How macro-political change, such as the decline of a state, plays out on a daily scale or in settings of commoner interactions in the face of a crisis is variable and depends on how of structure and agency are related.

The relationship of microscale change to macro-scale processes is where Giddens’ structuration theory becomes interesting and in some ways is not adequately developed for the kinds of problems archaeologists deal with in material culture studies. Giddens analyses daily events in terms of Goffman’s (1963) encounters (Kohring *et al.* 2008, 103), a dramaturgic or theatre model of social interaction. Social interaction develops in the contexts of co-presence of actors, as determined by time–space practices (Kirk 1991, 113) such as modes of regionalization. Giddens (1984) details regionalization of front regions and back regions as important means by which interaction is controlled via the presence-availability of people for social encounters. Regions of space develop both within settlements (e.g. cities or villages) but also



within neighbourhoods and buildings. Front regions exist where social interaction is formalized and ritual conduct and utterance prevail (the equivalent of on-stage). Back regions are private realms where there is less social differentiation expressed, more deviation from norms and the dissipation of social tensions is possible. Giddens conceptualizes back regions as off-stage. While Giddens (1984, 122–9) presents much information about how architecture provides a stage for structured microscale interaction he provides little information about how architecture and other forms of material culture are designed and skillfully deployed within society to affect such structured interactions.

Gell (1998) delineates the complex relationships that can exist between the creator of the material culture (e.g. architect and/or builder), the viewers or recipients (e.g. visitors to a building), the prototype (a typical or archetypal building), and the patron (a sponsor of a particular building). Although space precludes a full discussion, briefly stated, Gell indicates that certain kinds of material culture can, in some sense, be considered to be agents; buildings reflect the intentions and actions of their creators. They elucidate responses of viewers and users, and, in the proper context, they promote certain social relationships among people, for example between patrons, builders and visitors. Agency is distributed through objects and across time in this attenuated fashion. Gell's theory of agency in art and architecture has advantages in discussing social exchanges mediated by material culture and in its focus on the production of material culture, such as censers. For Gell, agency also congeals in portable material culture, for example, in images used in worship (often termed idolatry). Such a richly textured theory of the social production of art and other material culture interdigitates with the duality of structure concept. That is because material culture involves production and use in a context of social interaction suffused with agency. And then their reproduction newly (re-)creates these relationships and/or allows outcomes similar to, or different from, the original building, based on goal-oriented behaviour, reflexive monitoring, practical necessity, historical contingency, a combination of these (Gell 1998; Keane 2003; Joyce 2011), or unintended consequences of action (McCall 1999; Robb 2004). In Sewell's (1992) terms, structurally shaped configuration and reconfiguration of material culture is the operation of agency.

Joyce and Lopiparo (2005), Dobres and Robb (2000; 2005) and Gell (1998) identify certain types of analyses that are useful for assessing agency in material culture production. For Joyce and Lopiparo (2005, 365), 'successful archaeological studies use networks or chains as models or metaphors for connections in

sequences of actions over time', for example the *chaîne opératoire*. Dobres and Robb (2005, 163) also support efforts to develop empirically grounded middle-range analytical techniques to understand collective forms of agency (Robb 2004, 107). Similarly, Gell (1998, 166–7) utilizes formal analyses of art to identify axes of coherence and divergences within a corpus of material culture through time by making detailed comparisons of the morphology of related forms. In the case study, an architectural grammar (Glassie 1975; Chippindale 1992) was applied to the architectural corpus of 'C'-shaped benches and similar structures (Schwarz 2004). The focus is on a close examination of bench form and prevalence of certain arrangements of walls, stairs, altars and attached patios, which change in ways I discuss below.

### Continuity and change in Petén 'C'-shaped bench structures

Schwarz (2004) presents an architectural grammar of Petén Maya 'C'-shaped bench structures. The grammar analysis is a comparison and detailed study of how the morphology of 'C'-shaped bench structures developed during the Classic to Postclassic transition period. Due to the length of the architectural grammar analysis and its many illustrations it is impossible to present the data and analysis in their entirety. Rather, I present a brief discussion of findings and direct the reader to the original study.

Through a rule-based grammar, the analysis helps to identify temporal continuities or novel introductions in the architectural corpus (Preucel 2006, 108–9) of 'C'-shaped bench structures during the Classic to Postclassic transition. The unit of analysis is the rectangular cell, which is a masonry platform. The platform is modified in a series of steps into a room with a bench with a specific morphology. The analysis models the design process through the subdivision or replication of the rectangular cell (i.e. a masonry platform). Creation of design rules represents this design process, which progresses through illustration of the modified platform to that of a finished platform with an increased horizontal or depth order. The number of subdivisions or replications applied to the design to achieve the final form provides a record of the complexity of the architecture, as described below. Then, the elaboration of the form is modelled by the addition of benches, walls, stairs, altars, etc., which are described in the listed design rules.

The grammar method also provides a proxy measure of complexity, with depth order (number of subdivided spaces) indicative of the hierarchy of spaces and extent of enclosure, i.e. the creation of



**Table 1.** *The architectural corpus under study.*

Site: Structure groups	Bench structure	Period(s)/Phase(s)	Dates	Reference
Dos Pilas: N5-3/3A	'C'-shaped presentation palace	Late Classic/Nacimiento	AD 600–761	Demarest <i>et al.</i> 2003
Tikal: 4G-1	'C'-shaped benches at residences*	Late Classic/Ik-Imix	AD 600–830	Becker 1999
Tikal: 5G-1	'T'-shaped benches at residences	Late Classic/Ik-Imix	AD 600–830, possibly earlier	Becker 1999
Seibal: A-30 and C-31	'T'- and 'C'-shaped benches at residences	Late Classic–Terminal Classic/Tepejilote-Bayal	AD 650–950	Tourtellot 1988
Michoacan: one unnamed structure group	'T'- and 'C'-shaped benches at residences	late Late Classic–Terminal Classic/Hobo	AD 750–1000	Rice 1986
Motul de San José: Group D	'C'-shaped bench at residence*	late Late Classic–Early Postclassic/Pakoc-Chilcob	AD 780–990**, likely later	Foias <i>et al.</i> 2000
Ixlú: Str. 2015–2017, Str. 2003–2006	'C'-shaped benches at open halls	Terminal Classic–Early Postclassic/Hobo-Aura	AD 800–1200	Rice <i>et al.</i> 1998
Seibal: C-15, C-32, C-33 and D-36	'T'- and 'C'-shaped benches at residences	Terminal Classic/Bayal	AD 830–950	Tourtellot 1988
Quexil Islands: Q1–Q2, Q14–Q18A	'C'-shaped bench at open hall	Terminal Classic–Late Postclassic/Romero-Cocahmut	AD 890–1180**; AD 1420–1540**	Schwarz 2009
Zacpetén: Str. 732	'L'-shaped bench	Late Postclassic/Dos Lagos	Terminal Classic and later	Pugh 2001

\* 'C'-shaped bench divided by armrest; \*\* AMS radiocarbon date(s) of occupation

front and back regions (Giddens 1984; Gell 1998). Horizontal order is indicative of a continuum from relatively simple façades to complex façades that emphasized repetition (Glassie 1975), monumentality or other qualities. The measurement of architectural complexity, as a form of variation of material culture production, is based upon a comparison of depth and horizontal complexity and prevalence of certain descriptive design rules that vary between the two time periods.

In a sense, the technique models architectural design competence but does so with the knowledge that one is not likely modelling the actual design processes of the ancient Maya, which are unknown, but, rather the analyst creates an after-the-fact model of competence (Preucel, 2006, 106–7).<sup>4</sup> Since the analyst produces written descriptions that capture the commonalities and differences of the design of multiple structures, the creation of the grammar helps the analyst develop understanding of the organization, coherence and distinctive features of the architecture of each period. Previous formal design analyses yielded insight into the axes of coherence (Gell 1998) that give a particular style continuity (Muller 1979). Alternatively, grammars have provided insights on shifts in architectural style as new exogenous influences replace an existing style or as an existing style is adapted to new circumstances (Glassie 1975; Muller 1979). Most successful grammar analyses have been carried out on samples illustrating the long-term development of particular archaeological styles in

architecture or other material culture within a region (e.g. Muller 1979; Preucel 2006). Forms of material culture in the historic period, but for which few or no written records exist, also have been successfully analysed by grammars (Glassie 1975; Gell 1998). The outcome of the architectural grammar with a diachronic sample is that one has a detailed-enough view of variability over time that one can make informed inferences or interpretations about concepts such as play, innovation, freedom and consensus in material culture production, but one is not directly measuring these concepts.

The basis for inclusion in the analysis is architectural groups in the Petén Lakes region, focusing on groups with bench structures. Also, architectural groups from outside the region are included, specifically those thought to have influenced the architecture of the region. The corpus consists of dated, well-excavated and illustrated examples of 'C'-shaped, 'L'-shaped and 'T'-shaped bench structures from ten sites spanning the Late Classic to Postclassic transition (Fig. 1; Table 1). Sixteen structure groups are in this portion of the corpus, which includes over 80 structures, although not all structures in each structure group are bench structures.

The sample of such structures is limited, but the combination of structures dated with associated ceramics, radiocarbon-dated occupations (Schwarz 2009) and the architectural grammar analysis (Schwarz 2004) leads to the conclusion that change in architectural design in the Petén Lakes region was

**Table 2.** Abbreviated listing of rules for describing structure morphology (from Schwarz 2004).

Heading	Descriptive rule	Presence in corpus
I.	<b>Subdivision of cells</b>	
	<b>A. Depth subdivision</b>	
	1. Cells may be sub-divided into up to three ranks	C/PC
	2. Cells are stepped upwards as depth increases through creation of multiple platforms	C
	3. Cells are stepped upwards as depth increases through creation of a bench	C/PC
B. Horizontal subdivision	1. Cells are subdivided horizontally through different height platforms, creating up to three depth subdivisions	C
	2. Cells are subdivided horizontally by the creation of complex bench forms and the addition of altars	C/PC
II.	<b>Replication of cells</b>	
	<b>A. Horizontal replication</b>	
	1. Replication may create three or rarely more cells	C
	2. Replication of the entire building plan	C
	3. Replicated cell is rotated creating an 'L'-shaped plan	C/PC
<b>B. Depth replication</b>		
1. Replication creates a frontal patio	C	
2. Replication creates a back room	PC	

Key: C = Classic; PC = Postclassic

a multi-decadal process, not a rapid replacement as proponents of an in-migration event have claimed (Fox 1987; Tourtellot 1988).

Four trends in the development of the 'C'-shaped bench structures (Tables 2 & 3) are evident from the grammar analysis:

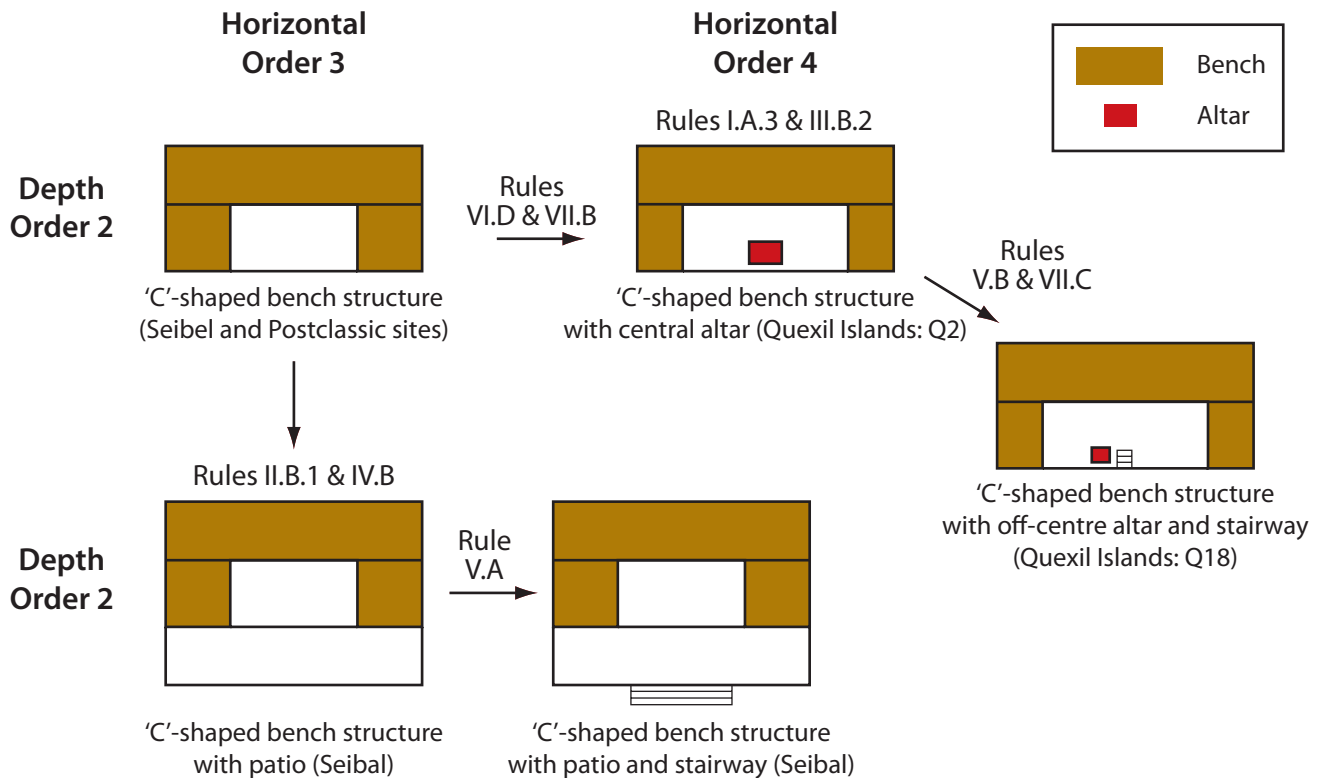
1. 'C'-shaped benches have antecedents in the Classic period where they are alternatively low presentation palaces (Fig. 2c) or central thrones in multiple-room range structures at Tikal, Dos Pilas and other sites.
2. At many larger sites, the Classic Maya designed range structures with multiple horizontally-arranged rooms containing benches (Fig. 2d; Table 2:Rule I.B.1). Architects created a complex horizontal order of architecture. The Postclassic Maya made single frontal rooms centred on open horizontal façades and they made frontal façades less complex (Figs. 2e & 3).
3. The Classic Maya designed stairways extending along broad frontal façades (Fig. 4; Table 3:V.A.). These stairways are outset. The Postclassic Maya

**Table 3.** Abbreviated listing of rules for describing the elaboration of structures.

Heading	Descriptive rule	Presence in corpus
III.	<b>Form and placement of masonry walls</b>	
	<b>A. Full-height walls surround the cell, except for frontal entry</b>	C
	<b>B. Half-height wall(s) is/are placed....</b>	C*/PC
	1. as a backing wall	PC
	a. Wall does not extend across entire length of the structure	PC
b. Wall is broken by a back entrance	PC	
2. on two or three sides, leaving the front open	PC	
3. as in III.A.2, but including a backroom with four walls	PC	
IV.	<b>Form and placement of patios</b>	
	<b>A. Formal raised patio is symmetrically placed to the lateral sides of the building</b>	C
	<b>B. Formal raised patio is placed symmetrically in front of the building</b>	C/PC*
<b>C. Informal patio is level to the surrounding plaza surface</b>	C/PC	
V.	<b>Form and placement of stairway</b>	
	<b>A. External stairway extends along most of the length of the building</b>	C
<b>B. External stairway is restricted to central entryway and is inset</b>	C*/PC	
VI.	<b>Form and placement of benches</b>	
	<b>A. Bench is a rectangle ('I'-shaped)</b>	C/PC
	<b>B. One bench wing is extended at a right angle (an 'L'-shaped form is created)</b>	C*/PC
	<b>C. Two bench wings are extended (a 'C'-shaped form is created)</b>	C/PC
	<b>D. Bench wings are placed in the frontmost part of the structure</b>	C*/PC
	<b>E. Bench has raised 'armrests' that divide the wings of the bench surface from the centre</b>	C
<b>F. Bench is subdivided by a walkway</b>	C*/PC	
VII.	<b>Placement of square altars</b>	
	<b>A. Altar is added to the bench surface</b>	PC
	<b>B. Altar is placed on frontal portion of the building in approximate centre</b>	PC
<b>C. Altar is placed on frontal portion of the building in an off-centre position</b>	PC	

Key: C = Classic; PC = Postclassic; \* Occurs during this period but is not common.

designed narrow inset stairways that are centred on the building front in the Postclassic period (Fig. 4; Table 3:V.B). They reduced verticality and frontal design elements. For example, raised frontal patios are uncommon at Petén Lakes Postclassic 'C'-shaped structures, whereas they were previously common. Buildings become less imposing in the Postclassic.



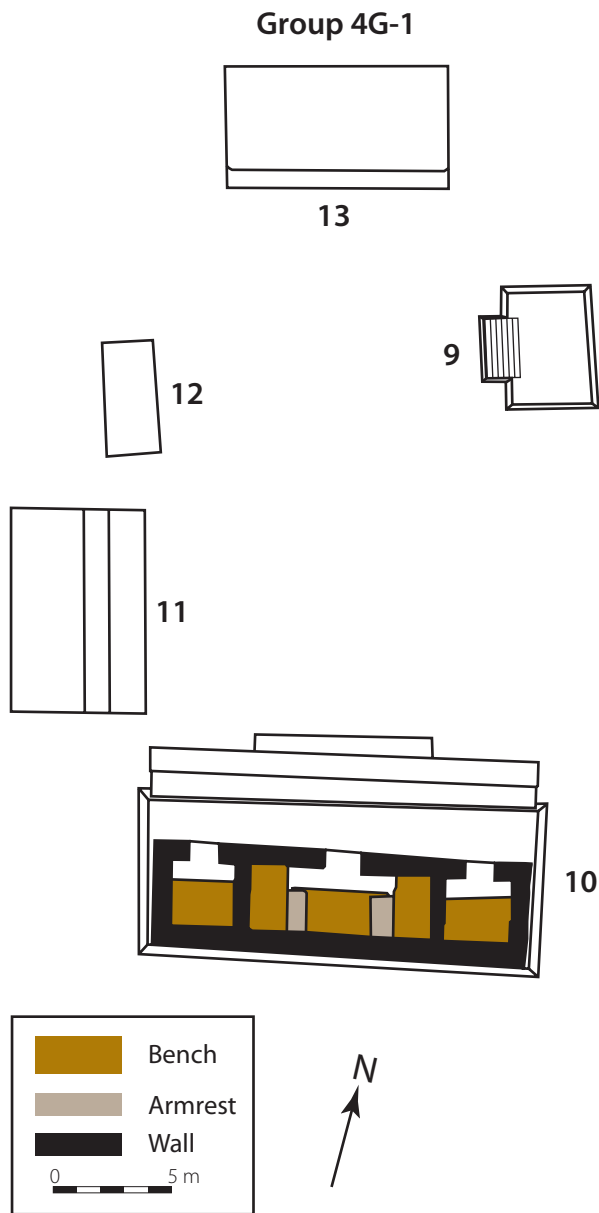
**Figure 4.** Elaboration of 'C'-shaped bench structures.

- In effect, the Postclassic Maya moved their benches forward within structures. Benches are closer to plaza space both vertically and in terms of the number of spaces that must be crossed horizontally to reach the bench rather than Classic examples which are often separated from view or access by frontal walls, patios (Fig. 4; Table 3:III.A & IV.B) and outset stairways. Since Postclassic benches structures were open-fronted (Table 3:III.B) their designers thus created greater visibility of the bench from the plaza.

While archaeologists know of low 'C'-shaped presentation palaces at Classic period Petén sites, such as one at Dos Pilas, they were not very common. It was Tepejilote and Bayal Phase Seibal (after AD 650) in which 'C'-shaped bench structures first became common in plaza groups that Tourtellot (1988) identifies as residential in nature. 'C'-shaped benches were found at Seibal both with and without frontal patios. Stairways, when present, are outset and broader while Postclassic stairways are narrow, centred and inset (Fig. 4). Another trend is that the Postclassic Maya sometimes placed low stone altars centred within the open fronts of 'C'-shaped bench structures. Frontal patios are uncommon (Figs. 3 & 4; Table 3:IV.B & VII.B).

Architects/builders at larger Classic sites such as Tikal often built complex, multi-room horizontally arranged buildings (Fig. 5), for example, Tikal 4G-10 (Fig. 6). The Terminal Classic Maya in Petén made these multi-room buildings less commonly. Maya at Group D at Motul de San José retained the Tikal-like bench form within a central chamber (Fig. 6). The central chamber had a 'C'-shaped throne-like bench with 'armrests' (Fig. 6; Table 3:VI.E) while adding a Postclassic-style colonnade. It appears to be a very late Terminal Classic example. At other sites such as Ixlú, the Quexil Islands and Michoacan though the architects/builders built unadorned 'C'-shaped benches by the Terminal Classic period and benches with armrests are not known. 'L'-shaped benches were also common at Ixlú and Zacpetén (Fig. 7; Table 3:VI.B). Benches tend to be lower and broader than in the Classic Period.

There is great deal of continuity in the architecture of the Classic and Postclassic period, as the design rules common to each period indicate on Tables 2 and 3 (C/PC). An axis of coherence within this style (Gell 1998) is the form of elevated burial shrines on the east side of plazas (Becker 1999; Schwarz 2009). The analytical focus though is on understanding the extent of transformation in 'C'-shaped bench structure



**Figure 5.** Late Classic period 4G-1 from Tikal.

morphologies (Tables 2 & 3, PC), which is a major change in the architecture. How can we assess this architectural transformation? As mentioned, the widespread adoption of 'C'-shaped benches by the Maya in the Central Petén took many decades with these bench forms first present in presentation palaces such as Late Classic Dos Pilas (AD 600–761) and elite architectural groups in Classic centres such as Tikal, where they appear to be thrones, and Copán (in the seventh and eighth century AD). Thus, bench structures served public functions as presentation palaces for royalty and elites, possibly with sizeable audi-

ences. However, most bench structures were within more restricted settings in elite residential groups. In the case of Kean-Chan the carving of the bench was a major statement of his affiliation with a powerful political hierarchy and cosmological trappings. One would expect a limited audience for rituals associated with this structure due to limited space within the structure and exclusionary cosmological and political statements made in the text.

As described in detail elsewhere (Rice 1986; 1988; Schwarz 2009) the Maya adopted the broader 'C'-shaped bench forms in houses beginning at Seibal but the trend did not emerge as a large-scale phenomenon until the Terminal Classic Maya built residences and open halls at small centres such as Ixlú and in the Quexil Basin (after AD 800) (Figs. 2e, 8 & 9). A comparison of these forms (Fig. 4) and the rules used to describe the changing morphology of them (Table 4) indicates the extent of the transformation and suggests that changing display characteristics along the frontal façade was an important reason for the transformation (see below). It is important not to ascribe a uniform or hegemonic character to the modifications described above though. Evidence from individual sites evinces change differently with some common trends evident, creating a mosaic pattern of change across the region (Schwarz 2009). The grammar illustrates many combinations of differently configured masonry elements, so there is variability associated with each particular structure in relation to the whole corpus and it is only in aggregate that the trends mentioned above are clearly evident.

The amount of plaza space available for viewing of rituals that were performed within the 'C'-shaped bench structure was variable from the very small viewing spaces present in enclosed Classic-period buildings, to large areas visible from open-fronted buildings at Postclassic Ixlú, which had expansive plazas, and the relatively small plazas available in crowded islands and peninsular sites like the Postclassic Quexil Islands and Zacpetén. Nonetheless the smaller Postclassic plazas still provided larger areas with visibility from open-fronted buildings than enclosed Classic bench structures did.

#### Agency in ritual practice

It appears that the design of 'C'-shaped bench structures changed as actors in previously secondary rural communities asserted a design competence that did not emphasize monumentality or hierarchy to the degree present in the Classic period but instead was community-centred around open halls (Schwarz 2004). The Maya enacted new architectural designs



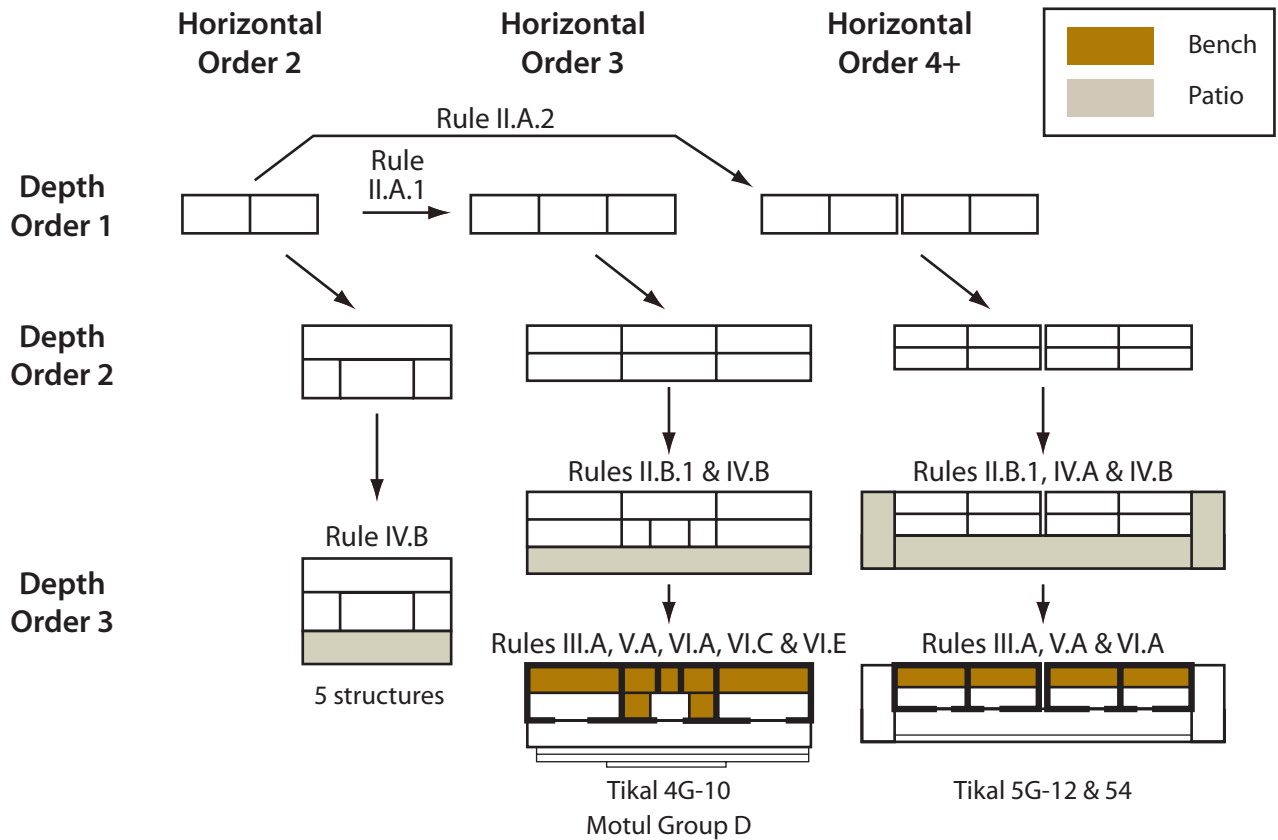


Figure 6. Classic multi-room bench structures.

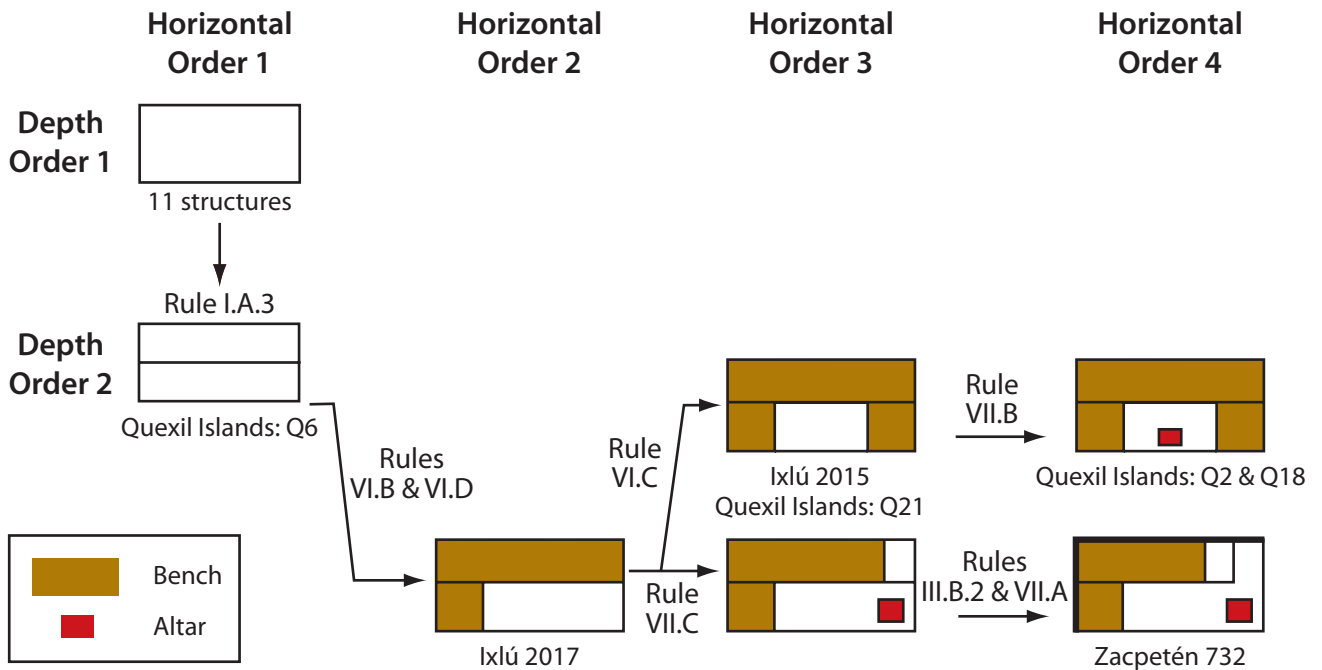
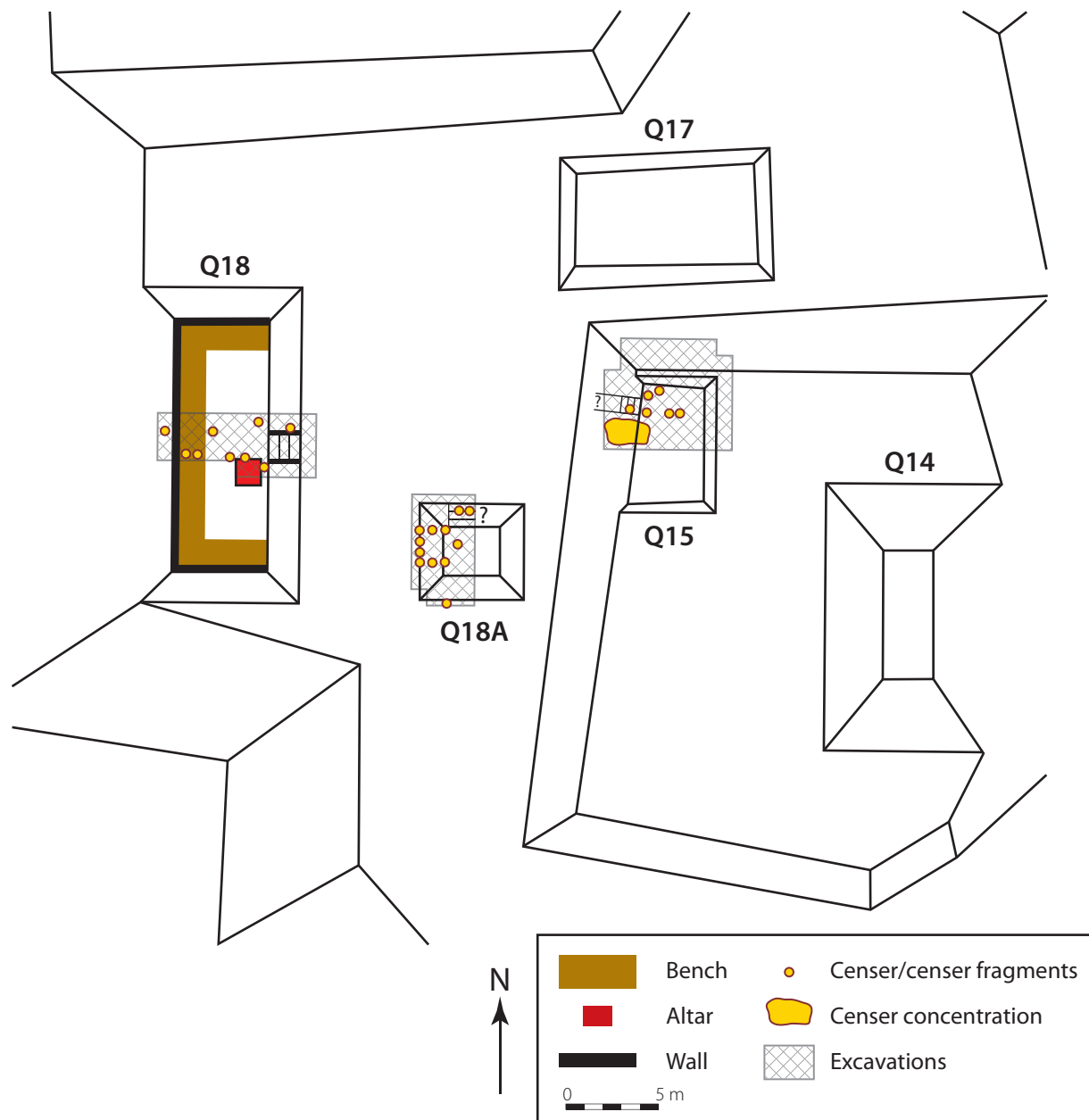


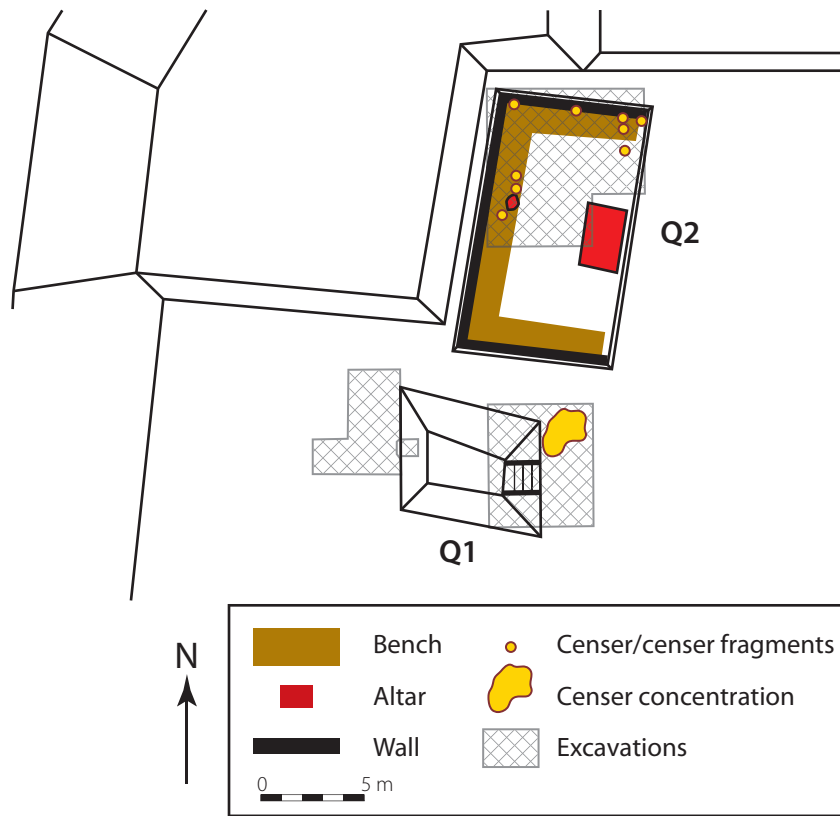
Figure 7. Postclassic structure morphology as modelled by subdivision of architectural cells.



**Figure 8.** Quexil Islands Postclassic structure group, Q14–Q18A. Censer sherds were recovered from the bench of Q18, the altar in front of the bench and adjacent shrines (Q15 and Q18A).

and the changing architecture may be tied to the changing social dynamics of architects, builders, patrons, communities and recipients, e.g. users or visitors to these structures (Gell 1998, 13; Glassie 2000). A trend of dehierarchization<sup>5</sup> of architecture, less complex and ostentatious façades, more plaza-level façades and open-to-the-front 'C'-shaped bench arrangement fostered creation of a stage where the Maya performed rituals and displayed censers (Table 4).

The Postclassic Petén Lakes Maya developed a less-hierarchical regional society as a series of competing heterarchical ethnic groups and polities (Jones 1998), in which people in polity centres (Avendaño y Loyola 1987 [1705]) and certain rural communities undertook rituals at open halls. The Quexil Islands community in the Early Historic period did not have its own chief but was under the control of the king of the Petén Itzá. Open halls had public functions, such as governance, receptions of visitors and religious

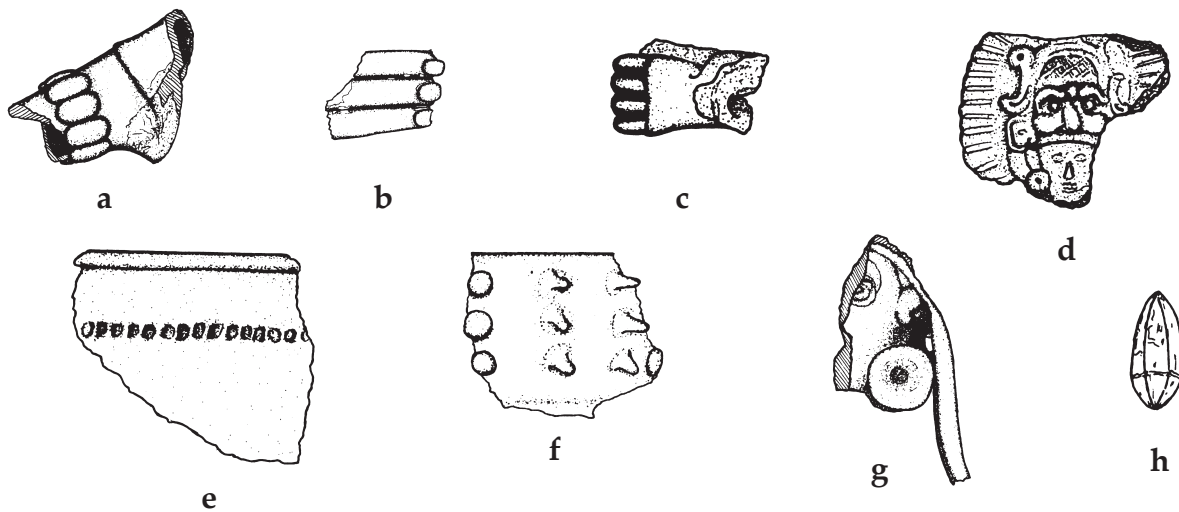


**Figure 9.** Quexil Islands Postclassic shrine and open hall, Q1–Q2. Censer sherds were recovered from the bench of Q2, the altar on the bench and the shrine (Q1).

**Table 4.** Rules indicative of changing display characteristics for bench structures.

Heading	Summary of descriptive rule	Presence in corpus	Notes	Dramaturgic effect on staging of ritual
II.A.1	Horizontal replication of cells may create three or, rarely, more cells	C	<ul style="list-style-type: none"> <li>Absent from Postclassic corpus</li> <li>Postclassic structures are centred on a single cell (or at most two cells)</li> <li>Usually a single room has an open front oriented to the plaza, eliminating horizontally arranged multi-room structures</li> </ul>	Creates a single stage
II.B.1	Replication creates a frontal patio	C	<ul style="list-style-type: none"> <li>Absent from Postclassic corpus</li> <li>Lack of patio has the effect of bringing the bench closer to the plaza</li> </ul>	Brings ritual practitioner, censers or other statuary and audience closer together
III.B.2	Half-height walls placed on three sides of cell, leaving open front	PC	<ul style="list-style-type: none"> <li>Effect is to render in full view the interior of structure from the plaza including bench</li> </ul>	Enhances visibility of bench from plaza
V.A	External stairway extends along most of the length of the building	C	<ul style="list-style-type: none"> <li>Elimination of external stairways is part of the reduction in monumentality of façades in the Postclassic period</li> </ul>	Creates less ostentatious façade
VI.C	'C'-shaped bench has bench wings at front of structure	C*/PC	<ul style="list-style-type: none"> <li>'C'-shaped bench is moved forward in the Postclassic in comparison to Classic-period examples, increasing visibility from the plaza</li> </ul>	Enhances visibility of bench from plaza
VII.B	Altar added to bench or placed just in front of bench within building	PC	<ul style="list-style-type: none"> <li>Altar is located so that offerings would be placed on or next to bench</li> </ul>	Provides focal point for ritual action

Key: C = Classic; PC = Postclassic; \* Occurs during this period but is not common.



**Figure 10.** Ritual artefacts found at shrines, altars and benches on the Quexil Islands: a) modelled arm fragment from anthropomorphic ceramic censer; b–c) modelled fingers and hand from anthropomorphic ceramic censers; d) ceramic figurine head with mask; e) ceramic censer body sherd; f) ceramic spiked censer fragment; g) fragmented modelled depiction of a face from a ceramic censer; h) quartz crystal.

and ritual functions (Jones 1998; Pugh 2001; Schwarz 2004). Thus it is possible to hypothesize that religious specialists living in this small community had the ability to conduct rituals at this small site, while the high priests and king staged rituals in the Itzá capital, Noj Petén (Fig. 1). While the latter scenario is indicated in the ethnohistoric documents (Jones 1998), there are few mentions of ritual activities in small communities and the archaeological evidence is the only concrete information on ritual at rural Postclassic sites. One would suspect that audiences for rituals would be local villagers, perhaps on a restricted basis by lineage relation or other distinction, while at the polity centre ritual would be more restricted, i.e. to elites.

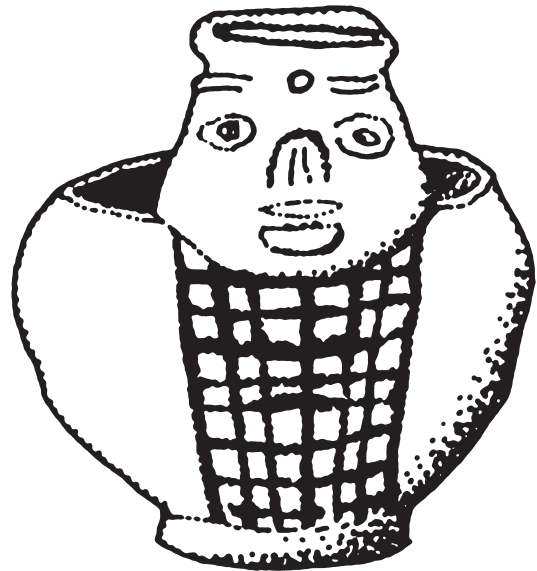
On a day-to-day scale, the duality of structure, the capacity to recapitulate and transform prior actions (Joyce & Lopiparo 2005), is visible as the Maya carried out rituals in these open halls, as can be inferred via the archaeological record and ethnohistoric analogy. Spiked censers, present in low numbers throughout the Late Classic period in large ceremonial centres, became more common during the Terminal Classic period (Rice 1999) and are evident at smaller settlements of the Terminal Classic and Postclassic periods, like the Quexil Islands (Schwarz 2009). Fragmented spiked censers were found at open hall structures Q18 and Q2 (Figs. 8 & 9). Also, anthropomorphic image censers were found, mostly as small fragments, in addition to other ritual items such as quartz crystals and ceramic figurines (Schwarz 2009) (Fig. 10).

Censer rituals were tied to Maya ancestor veneration. They were materializations of these cultural processes and provided both visual and olfactory cues, which enhanced their efficacy. Maya spiked censers appear to represent earth and fertility themes (Rice 1999), while image censers represented Maya gods and ancestors (Pugh 2002). The Maya intensified their use of image censers during the Postclassic period. Maya architects/builders created ground-level architectural façades in the Terminal Classic period and brought forward the benches and made them more visible. A stage was fashioned for the enactment of these censer rituals. These Postclassic settings were front regions where formalized speech and ritual were appropriate. Viewing of rituals from the benches or plaza would have created a setting of co-presence among actors that substantiated the politico-religious legitimacy of the proceedings. Maya ritualists used modelled image censers and figurines and these would have provided powerful reinforcements since the display of ‘idols’ – a practice so condemned by the Spanish conquerors and priests (Avendaño y Loyola 1987 [1705], 39) – was so vital to Maya religion (de Landa 1941 [1579]; Thompson 1951; McGee 1990; Gillespie 1999). Following Gell (1998) and Meskell (2004), the Maya did not just conceive of censers as representative or symbolic of certain gods and ancestors, they *were* divine animated essences, as I infer by ethnohistoric analogy and evidence from Classic Maya statuary (Bachand *et al.* 2003). Gell (1998, 115) makes the point that image censers and other statuary showing human





**Figure 11.** Effigy censer image from the Petén Lakes site of Nixtun-Ch'ich'. (Adapted from Pugh 1995.)



**Figure 12.** Modern Lacandon god pot from the Usumacinta Valley, Mexico. (Adapted from Palka 2009.)

or humanoid faces provide a visage that facilitates emotive communication between the ritual practitioner, any audience and the gods and ancestors. Such censers were common in the Postclassic Petén Lakes region (Fig. 11). Censer ritual also provided olfactory sensations that enhanced the proceedings. The burning incense, usually in the form of copal resin, created copious smoke and a fragrant scent. The ancient Maya considered copal incense to be the equivalent of blood (Meskell & Joyce 2003, 140–41).

Ethnohistoric documents provide an analogy to the agentic semiotic environment that Postclassic Maya open halls must have been. Using these documents, historical studies indicate that Petén Lakes populations fleeing the Spanish Conquest of AD 1697 contributed to the formation of northern Lacandon communities in the subsequent Colonial period (AD 1697–1821) (de Vos 1980; Schwartz 1990). Pugh (2009) details similarities in ceremonial buildings and ritual practices between Early Historic Petén Lakes communities and the northern Lacandon, who were still carrying out their traditional rituals as recently as the 1990s.<sup>6</sup> Other researchers have noted that the parallels between these cultures are striking (Henderson 2010; McGee 1990) despite the many centuries of change among the Lacandon and Petén Lakes groups. Thus, the evidence indicates that the northern Lacandon of the Usumacinta Valley in Mexico are closely linked to certain Postclassic–Colonial Maya populations from the Petén Lakes region and Yucatan and have similarities in their material culture (de Vos 1980; Schwartz

1990; Boremanse 1998; Pugh 2009), making the below analogy appropriate.

For the northern Lacandon, *balche* ceremonialism is the basis for their religious and ritual life and most major ceremonies are carried out in god houses (McGee 1990). *Balche* (a fermented drink made from tree resin) is consumed in conjunction with recitations of prayers and songs, ritual activities and the burning of incense in god pots. The god pots are often arrayed in front portions of the god houses (Davis 1978), which parallel locations of Postclassic archaeological finds of fragmented censers (Fig. 8). 'L'-shaped and 'I'-shaped formations of wooden benches provide seats for the ritual participants, another parallel with Postclassic bench forms (Schwarz 2004), although of course masonry benches are all that remain archaeologically.

God pots appear to be similar to the more elaborate Postclassic image censers (McGee 1990, 49; Pugh 2009) although their simplified form is a stylized head with an open-mouth orifice (Fig. 12). The Lacandon conceive of god pots as corporeal versions of the gods and they are models of the human body (McGee 1990, 52–3). They are ritually fed food (such as maize) and *balche* through their mouth orifice. Interestingly, in order to be considered animated beings, stones gathered from Maya ruins had to be placed within the god pots (Boremanse 1998, 21; McGee 1990, 52). These stones are termed *kanche*, or benches, among the Lacandon. This term also is shared with the modern Itzaj speakers of Petén (Hofling & Tesucún 1997, 374),

*k'anche*, where it refers to seat, chair or bench. Among the Lacandon, the entire god house and the ritual participants are also animated. Circles of red annatto paint mark beams and posts on the god house. In addition, the faces, white tunics and headbands of the Lacandon participants were painted with red splotches, and the god pots themselves were painted with red splotches. Davis (1978, 173) and McGee (1990, 85) infer the red paint to be related to blood symbolism.

Creation of censers among the northern Lacandon involved arduous trips to ancient Maya ruins to gather materials such as clay and *kanche*. Censers then were produced and consecrated via ritualized activities. Censer use or life cycle followed an eight-year cycle, and old censers were destroyed after termination and censer renewal was undertaken (McGee 1990, 51–2). Although details of use or life cycle are not yet clear for archaeological censer materials, they are often found in contexts indicative of ritual breakage or termination (Rice 1999) and/or ritualized deposition (Pugh 2001; Schwarz 2004), including on and around these bench structures and at altars and shrines. Based on ceramic characterization studies, censer production and distribution in the Petén Lakes region appear to be regionalized as most censer styles are found at individual sites and lake basins (Rice 1996; Cecil 2001) and some censers bear stylistic similarities to censers from other regions such as Yucatan, Mexico.

The main point which I wish to emphasize here, over and above the historical links between these cultures, is that the detailed analyses that ethnographers left us portray the agentic force and animacy that Maya peoples viewed such ritual settings. It must not be considered, however, that Maya culture was unified, homogeneous or static across centuries. Rather, the approach I take is to seek understanding of how agency, including distributed agency and the animacy assigned to objects, was in active tension with the long-term structures that characterize these related groups. This structure–agency relationship is key to the way individuals and groups innovated with material culture, and thus how the Petén Lakes Maya made themselves and changed themselves with their material culture and ultimately made themselves anew within their specific historical circumstances.

### Discussion and conclusions

While certain investigators stated that 'C'-shaped bench structures arrived in the Petén Lakes region with Late/Terminal Classic migrants from outside regions (Fox 1987; Tourtellot 1988; Webster 2002), this scenario is unlikely, based on evidence collected at

rural sites such as the Quexil Islands (Schwarz 2004; 2009) and in adjacent lake basins (Rice *et al.* 1998). The reason is the long-term process of architectural change and its mosaic quality (Schwarz 2009) across the region as indicated by archaeological evidence which argues against a rapid influx or replacement of populations in the Terminal Classic period. Instead, the grammar analysis summarized above indicates the results of a long-term architectural transformation. The Maya enacted a dehierarchization of architecture; they built less complex and ostentatious façades and made other changes, creating, in effect, a stage within these 'C'-shaped bench structures, or open halls, which provided a focal point for ritual display. Ritual display appears to have been tied to ancestor veneration and worship of Maya gods. This conclusion throws open the question of internal social transformation within a setting of Classic–Postclassic cultural continuity.

Giddens' dramaturgic analysis of structured interaction within front regions helps explain the architectural transformation. Shifts in the architecture of bench structures created a stage for display of censers, statuary and offerings in the front of the structure. Censers, statuary and ritual specialists would have been visible to any audience during rites. Essentially a reconfiguration of the front region is posited, but Giddens' views on regionalization provide little information on the actual creation of architecture, which fostered such encounters. This and other aspects of the transformation are best explained with respect to the duality of structure and recent theories of materialization.

The Maya shifted use of 'C'-shaped bench structures over many decades across the Central Petén, a fact that may indicate an involved process of social negotiation. The dialectical model of alternating innovation (agency) and stasis or resistance to change (structure) provides the most obvious explanation of this period of change. However, a critique provided in recent work on materialization (Meskell 2004; Miller 2005) explodes this notion of agency and its application in archaeology. The critique relates to the view of the ancient Maya as creating subjective cultural codes in order to produce objective architecture, which is reproduced with little variation except due to outside influences (Thompson 1970; Fox 1987). Instead of the subjective cultural production of an objective artwork by a culture-bearer, Gell's (1998) conception is that subject–object distinctions break down (Gosden 2004; Meskell 2004; 2005b) in agentic communication, and, emically, various human agents interact with non-human agents in an animated semiotic environment, an endless and complex process that spins off persons and things (Miller 2005, 38–43). This viewpoint means

that agency is always part of the materialization process because actors are regularly communicating and interacting with the object worlds that they created.

In the case of Kean-Chan, the Copán stonemason created the bench and written text links him with cosmological and sociopolitical themes. He appears to have thus expressed and amplified his identity emically within the political hierarchy and sociocosmic semiotic environment both within his small house and at Copán. Hieroglyphs at the House of Scribes (9N-82) at Copán indicate censer ritual was carried out within a similar enclosed elite setting. But the power to reinforce hierarchy and enclose ritual action can be turned around through deft and competent actions over time and architects, builders and ritualists in the Petén Lakes region innovated skillfully to create open-fronted stages (benches) more suited for heterarchical performances with censers instead. This innovation involved a choice to change their architecture and thus involved human agency.

Thus, the 'play' (Buchli 1999, 12) or freedom of action (Joyce & Lopiparo 2005) needed for structuration theory to work is visible, for example, in the temporal, spatial and social dynamics of the working out of material culture change (Preucel & Bauer 2001, 94; Robb 2005) among social groups. This was the conjuncture (Hodder 1991, 31) created among groups of Maya changing their architecture and developing the censer cult. The provisioning of a stage where censer ritual took place was a long-term change process that facilitated ongoing multiple encounters among sponsors, architects/builders, ritualists, divine agents (as instantiated by the censers) and likely the audiences of the rituals. Also, whereas 'C'-shaped bench structures were used with censers in limited elite settings in the Classic period, by the Postclassic period censer ritual was prevalent at 'C'-shaped bench structures at both elite centres and smaller rural sites such as the Quexil Islands. This change is symptomatic of power negotiations between elites in larger centres and people living in the hinterlands and resulted in the development of heterarchical practices in the Postclassic period.

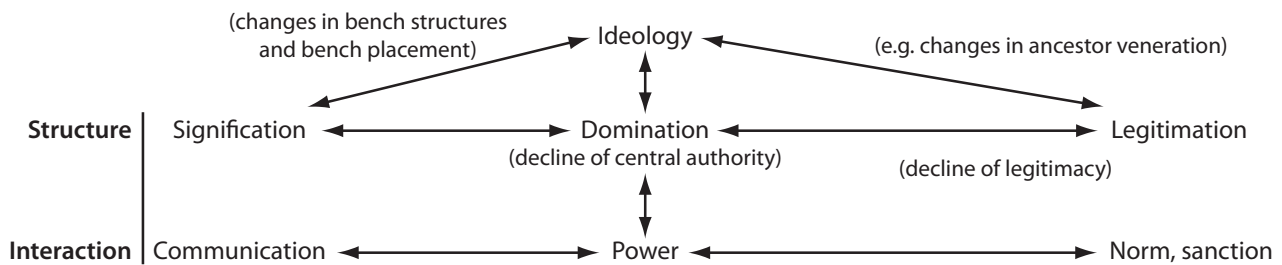
Censers had a culturally specific production sequence, apparently regional distribution networks (Rice 1996; Cecil 2001), specific ritual deployments and as yet poorly understood end of use lives. The divinized censers may have provided human agents with access to an emic world of gods and ancestors and a direct facilitation of socioreligious legitimacy (Fry 1985; Gillespie 1999, 236–40; Pugh 2009). Production was part of the materialization of the socioreligious lives of the multiple persons and groups involved with building open halls, making ritual paraphernalia and carrying out rituals.

The Maya transformed an institution, that of ancestor veneration, within the newly redesigned open halls, and the consensus developed for action regionally over a span of time must admit a more dispersed, situated and non-individualized view of agency (Keane 1997; Gell 1998; Johnson 2000; Robb 2004; 2007; Preucel 2006, 87–8; Knapp & van Dommelen 2008). This dispersed, situated view in agency is a playing out of social relations through agents' disparate actions that results in the mosaic quality of material culture across the region. I suggest that the cross-currents of change are thus recorded in the history of this form of material culture (Gell 1998). In this case, as in many archaeological studies, the agential process remains only partially visible as can be inferred from the outcomes of action, e.g. the material remains archaeologists find.

Giddens' structuration theory (Fig. 13; Table 5) helps explain change within the Terminal Classic Petén. Modifications to it account for the changing design of architecture and the animated semiotic environment created by ritual practices carried out in 'C'-shaped bench structures. Benches served as stages for more heterarchical ritual performances with the incense burners as opposed to the hierarchical ritual performances common in the Classic period. Giddens posits that social domination and legitimation in a hierarchical society are linked phenomena. In this case, the decline of central authority led to a decline of the legitimacy of Maya kings and elites in general and possibly shifting religious identification, as the divine mandate of kings was undermined (Fry 1985). In turn, the prevailing ideology may have shifted, in the form of the symbolic order that is inherent in architecture. I do not claim that macropolitical structures do not matter or impose their realities on small, rural communities, just that these communities had ways of innovatively responding to these macropolitical shifts, reconstituting and shaping their social lives and establishing a new symbolic order in the wake of failure of institutions (Schwarz in press). The Maya pursued dehierarchization of architecture and some small, rural communities, such as the Quexil Islands, which previously had little ability to stage rituals, in the Terminal Classic and thereafter built open halls. The change process does not appear to have been radically discontinuous or resulted in sweeping changes. Rather the record indicates localized pathways of change with details differing for individual sites or groups of sites (Demarest *et al.* 2004). Trends of dehierarchization (Schwarz 2004; 2009) and increasingly open façades (Andres 2005) are evident at several sites though and larger versions of the open halls at the Quexil Islands were present in large elite centres such as Zacpetén (Pugh 2001).

**Table 5.** *Changing structural properties in Terminal Classic Petén Lakes communities.*

Structure	Changes in structural properties (e.g. institutions)	Interpretation
Signification	Symbolic order of architecture Censer ritual	<ul style="list-style-type: none"> <li>• Dehierarchization of architecture, less ostentatious façades</li> <li>• Creation of single focal stage for ritual display at each structure</li> <li>• Rise of imagistic censer ritual at bench structures</li> </ul>
Domination	Collapse of states	<ul style="list-style-type: none"> <li>• Collapse allows increased autonomy of Petén Lakes communities (Schwarz 2004; 2009)</li> </ul>
Legitimation	Ancestor veneration	<ul style="list-style-type: none"> <li>• Increased censer ritual indicates that local communities legitimized themselves through agentic communication with gods and ancestors</li> </ul>



**Fig. 13.** *Structuration model of architectural change in Central Petén (adapted from Giddens 1984, 29).*

Individual practitioners and groups participated in a dense network or field of relations (Gosden 2004; Robb 2004, 107; 2007, 14) where individual actions can only partially be accounted for or known. Architectural and ritual change emerged from these extended, distributed agentic engagements of multiple individuals and groups and existing extended artefacts (the regional corpus of buildings). Dehierarchization and creation of a single stage for ritual display are modifications of signification, a shift in the symbolic order evident in architecture (Giddens 1984, 31).

The shift is the active and varied responses of local populations to the decline of central authority. The results appear to have been a shifting ideological identification and the reworking of the legitimation of authority. Uses these benches and altars were put to also changed. Imagery associated with Maya gods and ancestors was moved forward to the frontal façade of structures and made visible in a semiotic environment and engagement with materiality not evident in the same way previously. The Maya thus reasserted the salience of benches as they repositioned these ritual displays and modified the ideological representations associated with them. There were multiple meanings that were undoubtedly recognized variously by the architects/builders, patrons, ritualists and audiences involved with creating and experiencing Postclassic architecture so the trends identified in this article are likely only the most evident among those meanings, and not all meanings necessarily were recognized in the same

way by all individuals and groups engaged with the architecture.

Rather than a dialectic of structure and agency there is a dialectic of materialization or objectification (Miller 2005, 38) in which agency and structure are integrally fused in operation. The focus of materialization, the social context of production and use, is best served by an approach that integrates current ideas on play, innovation, freedom and consensus. This approach broadens our view of agency and shows that agency is distributed across time, among groups regionally (Gell 1998) and among elites and commoners (Buchli 1999). Necessarily this approach grapples with issues of scale (Kohring *et al.* 2008), for example, the long-term and regional nature of shifting material culture production in Postclassic bench forms that was described above and the sub-decadal cycles of production and use of censers in a regionalized context. Such concerns are best accounted for by a distributed and situated view of agency across a variety of social groupings (Gell 1998; Keane 1997; 2003; Robb 2004; 2007) rather than focusing on elite goal-oriented individualizing agents (Johnson 2000). When domination inherent in Classic Maya society collapsed, rural communities significantly transformed their architecture and their innovation created a new architectural setting. Thus, the Maya expressed agency in new ways, such as changes in ancestor veneration, and shifting macropolitical conditions facilitated these changes, but did not determine them. The agents that changed Maya ancestor veneration practices nonetheless built on existing structures.



Specifically, an act of architectural redesign that was infused with agency and structure would have looked like the changes evident in Figure 4. Postclassic Maya made 'C'-shaped benches that reference previously known 'C'-shaped forms (e.g. from Seibal). But they used less-monumental inset stairways and added central altars where censers and other offerings could be placed during rituals and seen by an audience due to the open-fronted design. Such changes were simultaneously innovative and referenced preexisting forms, showing skillful use of prospection and retrospection.

Thus, agency was subject to cultural specificities of the particular situation. The duality of structure concept potentially rejuvenates structuration theory only if understood in this context. Part of seeking to understand how agents 'innovate in structurally shaped ways that significantly reconfigure the very structures that constituted them' (Sewell 1992, 5) means that archaeologists must grasp the distributed modalities of such change. Innovation does not always occur as replacements or giant leaps forward. Change among a group of architects or builders can occur because of changing needs for and uses of these buildings. In these cases, reworking in form occurs that is variable (Joyce 2011), due to temporal and scalar factors that bely central coordination. This kind of change is a distributed manifestation of agency.

The duality of structure concept means that the habitual dispositions and sedimented accretions of history can yield to change but recent work on materialization indicates they change via these culturally specific forms of agency. Both the Postclassic use of open halls and the censer cult developed in very specific directions but 'C'-shaped bench structures have Classic period antecedents (Demarest *et al.* 2003) as do censer rites (Noble 1999; Rice 1999). Structural determinism is overcome by appreciation of the varieties of agency (Gell 1998) and specific histories (Johnson 1989; 2000). Thus, to find the greater freedom of action that Joyce and Lopiparo (2005) are seeking, archaeologists must identify agency in these cultural specificities (Meskell 2004, 3, 115), which in some cases, such as the Petén Lakes Maya Classic–Postclassic transition, provided references to and reconfigured already extant material culture forms which were internally reworked into new institutional expressions.

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### Notes

1. In this case, heterarchy is described as situations in which different elements cannot be ranked or subordinated to a single organizational principle because they are based on qualitatively different values (Ehrenreich *et al.* 1995; Harris & Robb 2012). Ritual performances with censers in Postclassic sites were more heterarchical than Classic ritual because, among other factors, rituals were carried out in open halls with benches in small villages, such as the Quexil Islands, and at larger sites such as Zacpetén and Topoxté. A more hierarchical ritual system is known for the Late Classic period and it was more exclusionary of rural settlements.
2. Meskell (2004, 77), Miller (2005), Preucel and Mrozowski (2010a) and others make clear that the sort of agency imputed to objects can only be considered a secondary emic sort of agency that is defined by the human agents. This partial or secondary imputation of agency recognized for objects can be extended to animals as well (Hill 2011).
3. An animated semiotic environment is defined as a built environment that is cognized and referenced as agentic and where communication is believed to take place between human occupants and the other agents associated with it (e.g. ancestors). Elements of a building exterior, interior and/or its furnishings may be considered to be animated. Temples or house environments may have this quality (e.g. Gell 1998, 251–5; McGee 1990).
4. Typically competence has been defined as the ability to design a culturally correct artefact (e.g. building) but Gell (1998, 256) makes the point that Maori meeting houses should be considered both traditional and innovatory. The meeting houses were dominated by traditional design elements but these meeting houses also have non-traditional elements that are oriented toward the political triumph of representing one's ancestors with 'superior magnificence and sophistication'. Competence needs to be viewed as changeable and future-oriented through use of skillful prospection and retrospection rather than focusing on static conceptions of cultural correctness.
5. Dehierarchization: The Maya expressed a decrease of hierarchy in Postclassic architecture as opposed to Classic architecture. In this case, hierarchy is defined as complex architectural designs that emphasize height, monumentality, nested structures (such as plazas),

repetitive façade designs and multi-room asymmetrical structure plans with increased depth order and/or horizontal order. Postclassic buildings featured reduced height, monumentality, reduction of nesting and complex plaza configurations, simplification of façades, reduction of number of rooms, increased symmetry of structure design and decreased depth order and/or horizontal order (Hillier & Hanson 1984).

6. For example, Pugh (2009, 368–9) makes the case that in the seventeenth century some Kowoj, one of two principal ethnopolitical groups in the Postclassic/Early Historic Petén Lakes region, migrated to the Usumacinta Valley and mingled with refugee groups from Yucatan to become the Lacandon, an ethnogenesis that occurred under extreme threat from the encroaching Spanish Conquest. The Itzá are the other principal ethnopolitical group in the Petén Lakes region (Jones 2009). He states that ‘Kowoj ritual practices of the sixteenth- and seventeenth-century, as we understand them archaeologically, are remarkably similar to the twentieth century northern Lacandon’ (Pugh 2009, 368). In his study, Pugh (2009) demonstrates the high likelihood of this close cultural relationship by bringing together diverse data sets that illustrate the similarities between the two cultures and he notes some differences. He describes similarities of their ceremonial buildings, incense burners and Lacandon ritual as reported ethnographically (Davis 1978; McGee 1990) in comparison to archaeological evidence of Kowoj Postclassic rituals. Pugh also marshals other scholars’ archaeological data (Palka 2005), linguistic data (Hofling 2009, 78), surname data (de Vos 1980, 222–3) and historic accounts (Schwartz 1990, 34) to further buttress his proposal of a close relationship between Late Postclassic/Early Historic Petén Lakes groups (the Kowoj and Itzá) and the Lacandon. This close relationship was originally proposed by de Vos (1980, 213–24) and has been supported by other ethnohistorians (Schwartz 1990, 34, 299, 318). This body of interpretation makes the ethnohistoric analogy, advanced here in support of the exploration of agency attributed to objects (Gell 1998), both appropriate and historically accurate.

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