The Ancient Maya Marketplace

The Archaeology of Transient Space

Edited by

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THE UNIVERSITY OF ARIZONA PRESS

TUCSON

The University of Arizona Press
www.uapress.arizona.edu

Printed in the United States of America
20 19 18 17 16 15 6 5 4 3 2 1

ISBN-13: 978-0-8165-0041-3 (cloth)

Jacket designed by Lori Lieber
Jacket image: [TK]

Library of Congress Cataloging-in-Publication Data
The ancient Maya marketplace : the archaeology of transient space / edited by Eleanor M. King.
pages cm
Includes bibliographical references and index.
ISBN 978-0-8165-0041-3 (cloth : alk. paper)
1. Mayas—Commerce. 2. Mayas—Economic conditions. 3. Mayas—Antiquities. 4. Excavations (Archaeology)—Belize. 5. Excavations (Archaeology)—Guatemala. I. King, Eleanor (Eleanor M.), editor.
F1435.3.C6A53 2015
381'.10972810902—dc23
2015005336

♾ This paper meets the requirements of ANSI/NISO Z39.48–1992 (Permanence of Paper).

Contents

CHAPTER THREE

Ancient Maya Markets

Architectural Grammar and Market Identifications

Marshall Joseph Becker

Markets are institutions where sellers and buyers interact and can trade items. Trade occurs whenever a seller and a buyer agree on a price.

—FALK AND SZECH 2013:707

Introduction: Markets and the Search for Them

A "market" provides a solution to a basic economic problem involving the exchange of food and other products. How does a market work? Do vendors have set prices for goods or do they negotiate each sale with each specific customer? That was the case in America before Macy's provided fixed prices, with Sears, Roebuck and Company spreading that idea across the United States. Aside from the scale of storage and transport problems, market systems need to be ethnographically understood relative to the scale of the physical accommodations, which are what we are attempting to examine through Maya archaeology.

The origins and evolution of market systems, carefully but only briefly examined by Blanton (1983; see also Braswell 2010), have been rarely studied in detail or related to the archaeological evidence (see, however, recent publications by Garraty and Stark 2010, and Hirth and Pillsbury 2013a). Thus, craft specializations, developing trade networks, and the market locales at which food and non-food artifacts were sold may be considered as linked, but it is difficult to specify how. What we are examining in many of the chapters in this book are the inferred loci at which marketed goods reach the majority of the ultimate users. Sale at a market

brings goods to consumers in a mode very different from the vector followed by most elite (rare) goods, which are commissioned by the very rich for presentation (implied exchange) with other very rich individuals. A crafter commonly produces many copies or variations of the same item and transports them to a formal market for sale. These marketed goods differ from elite "gifted goods" that may be unique or limited-production items specifically commissioned for presentation. Gifted goods may be commissioned at any economic level, although we are most familiar with rare items recovered from high-status tombs.

Being aware that some sort of market economy existed does not provide direct clues (material or archaeologically detectable) as to how the system worked. It also does not help us differentiate traded from gifted goods, as King and Shaw (this vol.) point out. Only the evidence for production seems to provide a reasonable basis for interpretation. Perhaps for this reason, production was an early focus of Maya economic research, along with artifact sourcing (King and Shaw, this vol.). Typical of this research was a series of papers by Robert Fry (1969, 1979, 1980) in which he documented the distribution of ceramic wares around Tikal and made inferences about how they reveal aspects of the markets involved. His ideas on ceramic exchange systems (Fry 1979) do not necessarily mirror the realities of production-distribution systems, but they reflect the basic complexity of Maya economics—and indeed of market economies in general. Researchers now routinely use ceramic distributions within and between sites as indirect indicators of market activity (Braswell 2010; Eppich and Freidel, this vol.; Hirth 1998). However, direct market indices remain elusive and hard to pinpoint, as discussed by several authors in this volume (Cap, Chase et al., Eppich and Freidel, Jones, King, Shaw and King, and Terry et al.). This is especially true of architectural evidence for the role or even the presence of markets, the focus of this chapter.

A "built market" is simply an architectural elaboration of this solution, but one that provides evidence (construction) for a distinctly different level of economic and possibly social complexity. The built market suggests daily use, while open-air markets may reflect intermittent use. A built market may also reflect levels of available resources where an individual of means may endow the construction of a particularly elaborate complex. Endowment of the costs to construct a structure or a market complex in itself reveals a level of economic elaboration in which capital has accumulated in the hands of businesspeople and/or political elites. It also reveals more secure information about the people doing the building than other market indicators.

Categories of Evidence

Coverage of iconographic as well as linguistic evidence related to marketing has been offered elsewhere (e.g., King, this vol.; Tokovinine and Beliaev 2013) and need not be repeated here. We should turn directly to the archaeological record and ask how do we "know" that the arrangement of structures at a Maya site reveals the presence of a built market? This is a problem parallel to that of recognizing the use of a structure as a "palace" or as an "elite residence." Specific identifying traits need to be defined and listed to provide us with clues as to what we should expect from the archaeological record. Let us begin with a series of traits or characteristics frequently broached in discussions of what can be expected by an excavator at a lowland Maya site (see also Shaw 2012). The traits or characteristics presented in several chapters in this volume (by Cap, Chase et al., Shaw and King, and Terry et al.) provide a series of variables that help us to focus on features that *are* relevant. Most of these have already been addressed elsewhere (Becker 2014a). Focused research strategies can then attempt to recover evidence confirming hypotheses related to markets as identifiable in the archaeological record. However, we should mind the caveat that dozens of urban occupations, such as healers or barbers, may not be represented by any archaeological findings at a market location. The following is a summary of the main traits thought to be associated with markets:

1. A built market: a venue with long-term and secure storage (see Jones, this vol.)
2. A plaza or open space in which vendors can set up stalls in relative proximity. Market areas using temporary tents or awnings are far more common than built markets. Dahlin et al. (2010) proposed, as the sixth of nine criteria for the identification of a market location, an absence of "contemporaneous domestic structures."
3. Access for large numbers of people, via a causeway or other path
4. Proximity to a ballcourt, as suggested by Jones (this vol.) and others (R. Hansen 2001, for Nakbe)
5. Artifact patterns: attributed to specific locations within the "market" area
6. Midden contents in the immediate vicinity
7. Reservoir or water source nearby
8. Chemical signatures, for perishable products or human waste

Cap (this vol.) carefully considers several variables that one might hope would reveal the location of a market, but few are archaeologically detectable given present realities, such as funding potential. A brief review of each of the characteristics listed here (from Becker 2014a) considers the range of variables.

The "built market" postulated for Tikal (see Jones, this vol.) represents the most sophisticated format for a location used for economic interchanges. I infer that a built market could *not* be erected with ease at the location of an open-market area but might be erected in stages as Jones describes at Tikal. The built market would require a space, and possibly structures, be condemned or "purchased," and then assigned for this use. During the period of construction, market activities would have to continue using part or all of an open area. At a site such as Tikal, construction planning for the main market may have involved clearing of numerous structures, such as those that once occupied the Great Plaza, to provide a market location, followed by the construction of Gr. 5D-3 (see Jones, this vol.).

The idea that markets existed in a large plaza or any open area is substantiated by comparisons with other pre-modern markets. The central plaza of small European towns, usually in front of a church, commonly served as a location for markets, but an increment in population would necessitate either a permanent structure or multiple and diverse markets. A survey of markets from the ethnographic and historic literature would probably reveal regularities in their locations.

While a periodic market might require nothing more than a relatively open area, not every open area need have served as a market space, as Terry et al. (this vol.) demonstrate (see also Shaw 2012). In Classic period Maya sites with relatively dense core-area structures, a single but relatively large open area might have been used for a periodic market such as suggested for Sayil (Sabloff and Tourtellot 1992a, 1992b; Wurtzburg 1991). Commonly, more than one open area may be identified at a site, but deciding if one or more functioned as markets, or different types of markets, returns us to the problem of identifying archaeological indicators.

Previously, believing that access to market locations had been important, I held that an association with causeways (*calzadas*, *sacbeob*) might be more than purely coincidental. The actual functions of causeways at Maya sites remain largely speculative. These roadway-like surfaces follow the terrain, undulating so greatly that steep portions may be difficult to walk. The architecture of Maya causeways appears roughly similar from

site to site. While they seem to be concentrated near the centers of sites, the unusual and extensive network at Caracol merits attention (see Chase et al., this vol.). In discussing the possible location of a market at Yaxha with Laura Gámez, I realized that causeway surfaces might *be* the market area, or at least provide a supplemental open surface on which goods could be displayed. Relatively level portions of the paved area could serve as an available platform along which vendors could set up their wares, still leaving a considerable path at the center of the roadway. This is similar to the argument that Chase and his colleagues (this vol.) make for Caracol, where they suggest that constructions along the margins at the ends of some causeways may have served as market stalls. The considerable numbers of causeways at many sites may well have enabled them to be used as specialized and intermittent markets.

Market trade was often linked to other "foreign" interactions and could be seen as representing the connection between the internal and external elements of the society. Trade can easily be related to inter-city competition in the Maya ballgame, with the movement of goods among various polities. Merchants as well as "fans" may have traveled in tandem with their teams. If the association of markets with ballcourts is part of the Maya urban pattern, as suggested for Tikal and other sites (Jones, this vol.), then perhaps we might begin our search for markets with a search for ballcourts.

Occupational or craft specialization is frequently linked to studies of market organization and thus inferred to relate to sociopolitical sophistication. Hirth's compilation (2009a, 2009b, 2009c) of categories of craft production affirms the suggestion that craft specialists may sell their wares at markets. While craft specialization may be a good indicator of social complexity (Costin 1991), no study has gathered evidence to indicate how crafting is linked to market operations. The data on how products are distributed to large (built) and small (periodic; see P. Rice 2009:79–80) markets alike remains far from evident. Since Maya craft specialties (occupations) were first documented from archaeological data at Tikal (Becker 1973a, 1973b), we have learned very little about Maya craft specialization in general (see Cowgill 2003:40).

Nonetheless, several scholars have suggested artifact patterns within a suspected market area as a way of determining the presence of a market (Cap, this vol.; Hirth 2009a; Keller 2006; Shaw 2012; Shaw and King, this vol.) Aside from possible variations in the contents of middens peripheral to a specific locale, trying to define a market on the basis of materials found lying around for archaeologists to recover suggests either an incredibly messy culture, or the evidence for a terminal point of activity,

or abandonment (see no. 6, above). Stromsvik (1937) reviewed finds of metates in the excavations of the Mercado at Chichen Itza, inferring that they somehow related to structure function. The source or sources of the stone might provide a productive line of research for trade routes, at Chichen as well as at Tikal. The distribution of waste materials (debitage, ceramic wasters) within a site is more likely to reveal structure function, or household workshops (Becker 2001), than locations at a market. Workshops, in turn, are more likely to show occupational activities than the locations where finished goods are marketed (however, see Cap, and Shaw and King, this vol., for alternative explanations).

At Tikal and elsewhere, the remains of any goods that had been brought to the "market" for "sale" were removed long before the structure fell into ruins. The value of broken materials as fill, like human wastes, needs to be recognized in the Maya lowlands, as a means of reusing scarce local resources. No evidence has been excavated to suggest the presence of any industry (butcher shop, shell, stone or bone working, etc.) within or around the Tikal market. Painted fine ceramics, flint and obsidian products, and other locally produced (finished) materials made within specific residential compounds may have been sold where they were produced, brought to the central Tikal market, and also transported to other cities for sale. Imported dyes, paint colorants, raw flint and obsidian, and other bulk items may have been sold in the main market. These commodities may have been purchased and then processed by people living within specific residential groups at Tikal (occupational specializations). In ancient Italy the market stalls that were built into the bases of Roman temples, perhaps best known for providing shops used by moneychangers in these temple-banks, have revealed use by pharmacist-dentists (Becker 2014b; Ginge et al. 1989) and other specialists. We have no comparable finds from the Tikal market even though evidence for the production of durable goods is well documented elsewhere at the site (Becker 1973a, 1973b). Hirth (2010), in fact, suggests goods passing through a market (produced outside the household) are better seen in the houses of the consumers.

Does the distribution of middens, and materials in them, provide evidence for the location of a market (see Jones, this vol.)? The theory that a market area might be identified by associated "midden" materials is suggested by direct evidence from Buenavista del Cayo (Cap, this vol.). A very large ceramics waster pile at the edge of an early phase of Tikal Group 4H-4, that was later built over during an expansion of the plaza of that group (Becker 2003b, 2013), is an example of a surviving midden reflecting a local industry. However, any lowland Maya market area

would be periodically cleared of debris, with most organic materials recycled as animal food and with inorganic materials serving as useful (valuable) construction fill. Since "fill" was a valuable resource in the lowland Maya realm, middens would be unlikely to accumulate in the site center (Moholy-Nagy 1997). Waste materials were more likely to have been collected to be incorporated into construction fills through periodic construction of "larger" structures. Trash and midden deposits reveal industries associated with the production of goods in household groups at Tikal, but not at the market. Jones notes that a deep midden was found to the *north* of the market area (Gr. 5D-3), rich in pottery of the Imix ceramic period. This midden, near the stairway descending down to the north from the high platform on which the market rests, had been tested by Vivian Broman. Her brief observations regarding the contents of this deposit are quoted by C. Jones (1996:12). However, in her all-inclusive review of the utilitarian artifacts and un-worked materials recovered at Tikal during the years 1957–1969, Hattula Moholy-Nagy (2003a:appendix) identified no unusual concentrations of artifacts, in any category, that would suggest a specific market activity.

The presence of a reservoir or water source is often cited as a feature of a market complex. On the one hand, this inference appears counterintuitive. The fouling of water would be a greater problem than securing drinking water or other liquids (see below). Water vendors are a more likely solution to the thirst problem. On the other hand, market areas centered on a village well or pond are common in Europe and elsewhere. Water sources also appear near proposed Maya markets, at sites such as Chunchucmil, where there is a well (Dahlin 2009), and also at Maax Na, which has an adjacent reservoir (Shaw and King, this vol.). However, the links between water features and market are still tenuous. An ethnographic review of the evidence for the presence of water sources in market locations would be a useful starting point.

Soil testing for phosphates had at one time been considered by archaeologists as useful in determining the location of latrines or areas where human wastes were commonly deposited. Barba Pingarron and Manzanilla (1987) resurrected this approach in Mexico, but linked it to possible market activities. During the past decade there has been a renewed interest in such tests. At Chunchucmil soil testing for evidence of phosphates was interpreted as evidence for market activities (Dahlin et al. 2007, 2010). I am not alone in finding this approach consistently wanting in controls and comparative ethnographic data (cf. Paul Amaroli, personal

communication, 2013). I remain in sharp disagreement with the editor regarding Dahlin's methods. The presence of phosphates and other chemicals, found in specific patterns within open spaces such as a plaza, are posited by others (Terry et al. 2000, 2004, this vol.) as reflecting market stall "droppings" that might be associated with architectural features. Kitty Emery (personal communication, 2013) suggests other interpretations, such as tree plantings and mulching that may account for regularly spaced shifts in soil composition (see also Emery and Foias 2012).

Despite recent interest in phosphorus distribution, supposedly as evidence of organic products being sold within a market, not one author has speculated on the locations of toilets as a source for phosphorus! Large collections of people generate large volumes of waste, as evident when one attends an ethnic or other "festival" held within a modern city (e.g., the annual Italian Festival in Wilmington, Delaware). The proximity of portable toilets to food vending areas at modern events is worthy of note. In the twenty-first-century Western world, we are more likely to have to pay for the deposit and removal of human wastes, but this was not always so. Extensive Roman records and archaeological finds reveal that merchants competed for concessions to collect these valuable materials. These "wastes" were used not only as fertilizers but also as industrial chemicals (e.g., urine in hide processing). Similar patterns occur in Mesoamerica. In the Aztec market at Tlatelolco, Feldman (1978:221) speculates that the "Stench Seller" was a vendor of fish, but "stench" may represent human excrement, a commodity commonly traded in urban societies. The location of a vendor of "night soil" within the market may correlate with similar commodities being sold. Whether formal or informal participants in Maya market economics gathered and removed these wastes, they were a product that grew in direct proportion to the size of the market. Modern ethnographic data offer models that may help us to understand the operations of small Maya markets, as Wurtzburg (this vol.) demonstrates.

While scholars generally agree that market economies have long been part of the Maya world, and recognize built markets as the epitome of the locations for them, the recognition of specific criteria for more ephemeral examples may be based on more variable and less easily recognized criteria. In effect, even the architecture that I believe characterizes built markets is not in and of itself conclusive evidence for function. The many other possible characteristics suggested by various investigators, if valid, may be used to confirm the function of what I am calling a built market, and vice versa.

Tikal: Big City, Big Market

The role of Tikal as the central city, or capital, of a regional lowland Maya state (Becker 2009a) has become much more clearly defined since the decipherment of the numerous texts recovered from the city proper and those city-states with which Tikal interacted (Becker 1984). Texts from Tikal's various dependencies, and other states throughout the region, confirm the importance of this ancient Maya site. Modern excavations at Tikal provided impressive sets of evidence for the complex economic structure during the Classic period (C.E. 250–circa 900; Becker 1983b). The presence of a large, special-purpose architectural complex that served as a built market, in addition to the presence of a wide range of ritual and domestic structure types, confirms the evaluation of Tikal as a major Maya city (cf. M. E. Smith 2007:8–11).

Specific and predictable configurations of structure arrangements, or architectural grammars, that were used for residential and also some non-residential groups of structures were recognized at Tikal in 1962. Students of Maya archaeology recognized quite early that large ritual structures differed greatly from smaller platforms that were inferred to have supported residential buildings made from perishable materials. Much of the history of Maya archaeology has been concerned with the recognition of different structure functions as well as regional differences in architectural styles (see below). However, the work at Tikal differed in defining specifically the link between form and meaning. Many building arrangements conform to a distinct architectural grammar, or "Plaza Plan" (PP), reflecting a form of nonverbal communication (Table 3.1). A major focus of PP research is the inference that each residential architectural group represents a single "house": one that sheltered the members of a single extended family, including non-kin retainers and perhaps slaves (Becker 1982). Ideas that regular architectural forms ("grammars") are important in communicating social meaning within a society (e.g., Becker 1971, 1999) have become essential to theories regarding a built environment such as presented by Rapoport (e.g., 1990). Basic to this approach to Classic period Maya archaeology are aspects of pattern recognition needed to recognize PPs, or any type of architectural patterning (see Becker 2009b:n. 1). The predictive value of PPs (see Becker 1972, 1999) continues to increase as new examples are identified. As the residential or ritual functions of distinct PPs have been more clearly defined, the potential has grown for using similarities in PPs among and between sites to see the composition

Table 3.1. Architectural grammars in the Maya area: Plaza Plan nos. 1–14. (Numbers 1–10 at Tikal are summarized from Becker 2003a:258–267.)

1. Twin-pyramid groups (see C. Jones 1969). A large ceremonial plaza with a flat-topped pyramid on the east and west and standardized ritual structures at the north and south
2. Residential group characterized by a square-based temple on the east (Becker 1999). Probably evolved from "E-Groups" (no. 10, below).
3. Residential group characterized by a "normal" or a relatively orderly grouping of rectangular structures
4. Residential group characterized by a central courtyard shrine (CCS; see Becker 2009a, 2009b)
5. Residential group characterized by an informal or irregular cluster of structures, often without a clear central court or focus
6. "Temple triad" consisting of a trio of temples facing a single place, but open on the south side (also called Tikal North Acropolis Plan; cf. Folan et al. 2001)
7. "Seven Sisters." An elite residential group characterized by a set of seven temples on the east; possibly a variant of PP2
8. Ballcourts (possibly related to "skull racks" and/ or markets)
9. Built market
10. E-groups (astronomical rituals? see A. Chase and Chase 1995). Probable antecedents of PP2.
11. Round structure (a stand-alone "group" or focus of a group)
12. Possible ritual group with two (unpaired) temples on the east, one on the west, a "statue shrine" in the plaza area, etc. (see Duncan 2005a:fig. 15.6; Pugh 2001:18, figs. 1–4, 2002)
13. Sweat baths (constructions possibly diagnostic of specific group types)
14. Elongated plaza causeways (calzadas, sacbeob). These features are so ubiquitous at lowland Maya sites that I did not think to include them originally as an architectural "category." In this paper I am suggesting that they may have served as elongated market areas, independently or in conjunction with built or other markets.

of many Maya cities and to reconstruct aspects of culture contact and culture history (Becker 1983a; Glaab and Taylor 2006).

Studies of PPs have shifted the vector of architectural research toward the recognition that different groups of structures may have specific patterns that can be recognized and for which, in turn, we may be able to decode group function or dynamics. Continuing research has gone beyond the descriptive stage in different types of PP groups to infer function. Thus, a large or a small Maya site may be seen as more than just a mass of

individual structures, but as sets of structures with distinct functions. Even groups with primarily residential functions may reveal cultural patterning that links the inhabitants to other members of the village or city as well as to the occupants of similarly patterned groups at other sites (cf. M. E. Smith 2002). Studies of PPs therefore offer us the potential to understand how an entire site was composed. They provide not only a framework for comparison but also a means by which we can organize research programs to deal with matters such as market studies. If we can recognize the specific architectural characteristics of a Maya built market, then we can search for attributes in these identified situations that may be present where open-air markets once operated.

Markets: A Ninth Plaza Plan

Much of our understanding of what constitutes a "market" building in the Maya area derives from inferences that seem to reflect the training of early Mayanists, which involved the study of classical antiquity. The form of the great stoa at Athens, which served as the market for the agora, led Karl Ruppert to identify a very large structure at Chichen Itza (Str. 3D11) as the Mercado (1935:fig. 350, 1943:229; see below, also A. P. Maudslay 1895–1902, 3:pl. 2). Ruppert inferred function from form. Ethnographic data on the form or layout of "modern" markets in Latin America may reveal origins in Castile or other parts of Spain, which in turn have forms generally reflecting Greco-Roman origins. The possibility that a Greek stoa-like, square structure at any major Maya site might represent "the" plaza plan for markets had been reviewed elsewhere (Becker 2003a:265–266). At Tikal the structures identified as a "market" appear "market-like" through a resemblance with the classical Greek stoa form, located where a market might be inferred to have been situated near the city center (C. Jones 1996), and the dissimilarity with any other structural form and assemblages anywhere else at the site.

Late Classic period (C.E. 600–900) Maya market structures, masonry constructions probably erected where previously open-air markets had operated, provided locations for storage of goods and all-weather protection for vendors. The example of a built market at Tikal, a "state" capital (Manzanilla and Chapdelaine 2009), is rarely duplicated. The Tikal market (see Jones, this vol.) is characterized by long and unusually thin structures, each enclosing a single gallery (long room) on each side, entered by a series of closely spaced doors. At Tikal some of these long constructions abut

structures surrounding the suspected market group and thus have a gallery on only one side. Jones's eight numbered "market" structures at Tikal have a total of circa 310 "entries" or doorways. Were the interiors divided between the doorways, as they may have been using movable wooden partitions, the result would be adjustable stall-like units. This arrangement of long, thin structures has been identified as Tikal Plaza Plan 9 (PP9).

The identification at other sites of similar configurations to Tikal's, presumably reflecting similar functions, provides us with opportunities to examine the spatial as well as temporal distribution of these parallels. Specific elements in architectural patterning within PP9 groups (markets) may reveal cultural affiliations and dynamics of change in the lowlands during and after the Classic period. However, despite all the claims regarding the locations of Maya markets, to date no example beyond that at Tikal offers any evidence for offering shade, postholes for tents, or other elements that characterize known markets.

Market Structures? Examples from Sites

The continuing search throughout the Maya realm for architectural traits that would define a generic form of a "built market" reveals the rarity of the Tikal model. This rarity has led several scholars to deny the existence of formal markets at many if not most Maya sites (see King and Shaw, this vol.). Despite the appearance of increasingly accurate site maps and considerable inferential evidence (Stark and Garraty 2010), definitive architectural regularities that may reflect a built market such as described for Tikal (Jones, this vol.) and possibly at Calakmul (Martin 2012) and Yaxha have been identified at few other Maya sites, such as Maax Na (Shaw and King, this vol.). Since built markets have a high probability of appearing only at the largest Maya sites, smaller polities may have used only open spaces for markets as well as for other activities (cf. Eppich and Freidel, this vol.; Hirth 2010; Masson and Freidel 2012; Shaw 2012; Stark and Ossa 2010). The rarity of built markets in Mesoamerica may be parallel to the situation known from other pre-modern societies in Europe. Archaeologists familiar with the Athenian stoa rarely mention the absence of equivalent market spaces at other cities, even major sites such as Aphrodisias in Turkey. During the Hellenistic/Early Imperial period (ca. 200 B.C.E.–C.E. 200), a rectangular square identified as the North Agora in the city center of Aphrodisias appears to have served as a marketplace (Berenfeld 2009:208). Thus, at least one major city of the ancient world did not have

a built market, and no equivalent of the Athenian stoa is known from Classical period Greek sites. The same may apply in Mesoamerica, with one major city having a feature unequalled elsewhere.

Although I had once expected that all of the large cities of the ancient Maya would include an easily identified built market, this hypothesis has not been validated. Calakmul's built market recently has become the subject of considerable attention, largely due to the associated visual evidence (Cordeiro Baqueiro 2012). Other built markets in the Maya realm remain elusive. The surprising rarity of built markets, as distinct from open spaces used as market areas, is telling us something about the nature of Classic period Maya society. Logically, a built market might fill an open space previously used for the same functions. Thus, an open area alone may provide a clue as to the location of a market area. In the absence of built markets at most Classic period Maya sites, any large open area can be dubbed a "marketplace." The presence of possible long basal walls in the form of market structures has been suggested for Chunchucmil (Dahlin et al. 2007:fig. 2; Hutson et al. 2006; Stewart 2008). Cap (this vol.) also identified possible basal walls that may reveal a market location at Buenavista del Cayo. The interpretive problem presented by basal walls is determining if they reflect the kinds of long, narrow structures found at Tikal, or a reasonable variant. If these walls do reflect the presence of markets, they would fill a niche somewhere between an open-air market, with temporary and possibly tented stalls, and the kind of impressive market structures identified at Tikal. Given the overall complexity of the Classic Maya, in everything from architecture to written language, one might expect a range of forms representing societal aspects of marketing and trade. The following is a brief discussion of three Maya sites where built markets have been proposed, beginning with Tikal as the most promising locale.

Tikal

The most likely candidate for a Classic period Maya market is that identified at Tikal. Comprehensive excavations in the East Plaza group at Tikal (Tikal Group 5D-3; C. Jones 1996, this vol.) revealed the huge rectangular Structure 5E-32 that serves as the type form for PP9 (see also Tokovinine and Beliaev 2013). The configuration of the many buildings composing this group, each incorporating a series of small and similar doorways, suggests that the interiors were divided into sections replicating the stalls of

an open market. Within the basic structure are four smaller structures, arranged in a square, similar in their architecture to the surrounding "building." This square-in-square complex, plus nearby structures on three sides, has a ballcourt situated immediately to its west. Jones (this vol.) concludes that the smaller, central structures within Str. 5E-32 had low roofs and incorporated a large number of close-set doorways along all four sides that also served as market buildings, similar in many ways to the Mercado described by Ruppert (1943) at Chichen Itza. The possible continuities of Late Classic patterns into the Postclassic suggests that the basic organization of a built market may have been present in increased numbers during the Late Classic period and continued afterwards at Yucatecan sites.

Calakmul

Dahlin et al. (2010:221, fig. 14; updating Dahlin et al. 2007) depict a series of long, thin structures running north-south in the North Plaza area of Calakmul that they believe may relate to a built market (see also Stromsvik 1937; also Golden et al. 2012, esp. Martin 2012). The evidence for structures on the "Acrópolis Norte o *Chiik Nahb*" Complex (Boucher and Quiñones 2007; Carrasco Vargas and Cordeiro Baqueiro 2012; Carrasco Vargas et al. 2009) is limited, but the surface area measures about 160 m square. The murals found on Str. Sub 1–04 beneath this complex provide some of the best evidence for ancient Maya marketing (see also Harris 2010). These illustrations depict market activities and suggest the possible location of an actual market area. The Calakmul murals were painted on the side of a small "pyramid" (Structure 1; Carrasco Vargas and Cordeiro Baqueiro 2012; Carrasco Vargas et al. 2009) located in an open area surrounded by long (ca. 90 m on a side), low mounds, similar to those surrounding the East Plaza at Tikal. Carrasco Vargas and his colleagues (2009), however, suggest that the structure and general area served a ritual function rather than a commercial or market function. I also note that off-center within this open area identified as a "market" is a small pyramid with four (radial) stairways and terraces decorated with elaborate murals, dated to the 600s (cf. PP4; Becker 2005; see also map by Sharer and Traxler 2006). This small pyramid may relate to the platforms that are diagnostic of PP4, when they appear in the center of a residential courtyard. How these clustered structures at Calakmul relate to one another is of interest. Note should be made that the nearest evident ballcourt to this complex lies ca. 190 m to the southwest.

Yaxha

At the eastern margin of the Yaxha site core is a perfect example of a twin-pyramid complex (PP1) identified as Plaza A (Quintana et al. 1999:266, fig. 3). To the west of this group is an area bounded on the north by the Calzada Este and at the southwest by the Calzada Lincoln, both converging at the site core near a ballcourt. Quintana and his colleagues delineate the small, square units as Plazas I through L. I recall Nicholas Hellmuth, many years ago, describing formal "streets" at Yaxha. Quintana identifies these as *vias* and infers that they reveal the urban nature of this site, presumably modeling his suggestion after cities in the Valley of Mexico. These "streets" appear to me to reveal the lanes among the structures of a built market. This may be a "market" complex, similar to that at Tikal (Chase et al., and Jones, this vol.). It is yet untested, but, if it were proved to exist, it raises interesting possibilities. Since built markets are not evident at other "state capitals," but seem to be present at both Tikal and Yaxha, it might be that they are a regional feature.

Location, Location, Location

Shaw (2012) and others have more extensively listed evidence that they associate with the locations of markets at many sites. This brief review offers a summary of the many and varied "markers" for markets that have been suggested by interested scholars. The remarkable lack of direct evidence, aside from the architecture associated with built markets, underscores the need for further efforts to identify market areas based on archaeologically recoverable data.

Can location within a site be helpful in identifying an area used for a market? An association with ballcourts or causeways would suggest architectural clues to a market area. Might a central location within a site core be significant? Markets in Europe as well as in Latin America tend to be located in or near major ritual spaces, such as the large plazas associated with principal temples or churches. Specialized markets, however, may operate in more limited open areas. The requirement for space to set up stalls, or even to spread out wares on the ground, may coincide well with the public spaces commonly adjoining major ritual locations. The plaza "fronting" a church, or other contiguous open space, may provide an area required for a market, but sufficient space for a specialized market may be provided almost anywhere at a site, including atop a causeway. Eight

indicators that various authors have speculated as being associated with Maya markets are listed above. The locations of the built markets at Tikal, Chichen Itza, and possibly Calakmul and other sites inferred to have had open-air markets generally but not always have three features in common:

1. Centrality: within the central or core area of a site (but, see Palenque: Shaw 2012)
2. Associated ballcourt/s (note that Abbott 2010 also associates ballcourts and markets in Hohokam society)
3. At the terminus, at one side of, or most likely using the surface of one or more causeways

I believe that the only truth or archaeological reality available to us lies, as in any scientific endeavor, in our predictive capacity, or in what we can predict and verify by further survey and/or by excavation. Using our reconstruction of cultural meaning, by demonstrating cognitive continuities in the regional belief systems of various ancient populations, we may, in turn, be able to link the behaviors of the Classic period with those reported during the earliest period of European contact and possibly later. Underlying our study of markets (PP9) is the demonstration that we can predict, and thus understand, the past through the recognition and exploration of architectural grammars. Returning to the three elements possibly associated with markets (causeways, ballcourts, and an open space), all have architectural components. At some sites the third can be marked by an absence of buildings.

Elsewhere (Becker 2009a) I posited that the dominant form of residential PP in a regional capital city, or power center, spreads to areas that came under the suzerainty of that particular center. This diffusion ("inside-out") need not result from a population that actually relocates and re-creates their architectural forms in a new location. The forms of structures (PPs) may reflect only cultural influences that alter behaviors in a different population. We might also expect that architectural styles, reflecting spheres of influence, can be used to detect boundaries. Harry Pollock (1965) documented regional variations in architectural styles just as PP studies were beginning. While he stopped short of suggesting they reflected sociopolitical organization, Rapoport (1993) has since suggested that architecture can be used to define a capital and to differentiate among several capitals in a region. Similarly, the presence, if not the size and form, of markets may reveal a regional capital where power lay at any specific period. If we can identify diagnostic features that define a market,

Rapoport's ideas (1990, 1993) regarding architecture could be applied in the Maya lowlands. We also need to be able to distinguish among architectural variations through space as distinct from specific defining elements of function.

While surface inspection now offers important clues to patterning, or architectural grammars, focused excavations are needed to define or recognize the existence of archaeological attributes that offer a window to understanding past behaviors (see Robin 2003). Extending the type of research exemplified by Tainter's (1978) mortuary pattern investigation to the examination of patterns in architectural groupings similarly requires excavation for verification. The architecture of a suspected built market provides a means by which we may identify an aspect of cultural behaviors within a city, but it needs to be tested. Confirmatory archaeological findings at a built market may provide a means by which we can verify the success of the kinds of analytical techniques used in open-air markets, or other locations at a site that are suspected as having served as markets.

For the pre-1500 C.E. period in Central America, we need to consider how we can decode meaning from the archaeological evidence. M. E. Smith (2007) describes a new model for urban planning that considers coordination among buildings and open spaces that may be specific to a city and its dependencies. Within "standardization among cities" he includes architectural inventories and orientations as well as spatial patterning and metrology. To date no specific attention has been directed to the astronomical orientations of the built markets at various sites. The alignments of market structures may reveal connections among various sites and should be compared with data from ethnographic examples. Studies of built markets should be careful to note orientation among the many features that relate to the structural group.

Implicit in Tainter's approach, as with studies of various aspects of lowland Maya architectural groups, are questions regarding the fundamental goals of archaeologists studying the ancient Maya. The epistemology of Maya archaeology rarely is made explicit, a problem Marcus (1983) commented on long ago. These sites are difficult to understand if they, or clusters of their component structures, are seen only in terms of size (Becker 2004) and associated wealth. What we need now are excavations that seek to answer specific questions (hypothesis testing). David Webster and his colleagues' recent studies of the boundary wall at Tikal (Silverstein et al. 2009; Webster et al. 2007), and William Duncan's (2005b) biological studies of the people in burials to place them in social contexts (cf. Wright 2005), are among the new wave of research, responding to Marcus's (2003)

call for more rigorous archaeological investigation. The critical question now concerns how we go about testing the various hypotheses that have been posed regarding the identification of a market location.

The Broad Perspective and the Tikal Delusion

More than four decades have been spent in seeking architectural patterning at Tikal and other Maya sites. Patterns provide a means of searching for regularities in an urban (complex) environment. The elaborate built market and other formal construction at Tikal reveal public works that reflect effective organization within a low-level complex society (incipient kingdom). Within this system a heterarchichal social structure operated (Becker 2004). Markets maintain the flow of goods and services; the distribution of wealth throughout the society superseded required funneling of resources to the "king." The function of royalty was to sustain some degree of redistribution by using wealth to stimulate the economy. When wealth becomes unduly concentrated in the hands of the royalty, as in seventeenth-century France, systems of redistribution (royal spending) are needed. Despite the impressive wealth found in many elite tombs, much of the wealth (resources) of Classic Maya society was translated into vast construction projects. These required huge amounts of labor but relatively few skills to quarry, transport, and incorporate stone into constructions, or transform it into plaster and fill. While the ultimate effect on the environment may have been problematical, building projects effectively redistribute wealth without contributing to the production of wealth. Markets provide an outlet for specialized goods and surpluses, whether generated by part-time, seasonal, or full-time producers.

While state capitals such as Tikal and Calakmul might be expected to have developed architecturally elaborate markets (see King, this vol.), the particularly intricate qualities of the Tikal market complex (parallel to twin-pyramid groups and other public works; see C. Jones 1969, this vol.) reflect an unusual distribution of "public" or communal resources.

The absence of easily identifiable built markets at most of the other major Maya sites is telling us something. By inference we recognize that the Classic period Maya had sophisticated, or at least elaborate, markets, but where within a site these activities were held need not have been standardized. Aside from a possible association with ballcourts, and perhaps with causeways, the actual locations of most market places generally elude us, perhaps because the actual locations may be irrelevant to the

dynamics of any specific Maya city. I suggest that the answer involves both the minimal needs that marketing may entail and the fact that the "market plaza plan" is not simply an architectural grammar with specific associated traits. The grammars (PPs) of residential and also ritual groups depend on architectural traits. A "market" (economic group) needs open space into which one may build ranks of stalls, such as at Tikal, or form them by vendors creating spatial distances among themselves the way individuals in a culture form personal spaces by moving their bodies closer to or away from other individuals. As is extremely clear with PP2 at Tikal and elsewhere (Becker 1971, 1999), the architectural grammar is critical, while size is irrelevant. This applies to other PPs as well as to markets, which range from simple to complex. The problem in this search is that the Tikal example, so extensively excavated over 50 years ago and then effectively published, set a standard that tells us more about Tikal than about what we should expect of markets! What we are examining in all of the papers in this volume are various possible markets, all of which are relatively rectangular and occupy an area that is relatively large when compared with the urban zone of which it is a part. These "markets" should be seen as lying along a continuum, reflecting the "cash flow" at the site, as follows:

1. Open-air area, relatively flat, allowing vendors to form aisles based on their own idea of what constitutes a "stall." Items may be displayed in simple mats on the ground, and stalls or "booths" can be covered by awnings.
2. Open-air area but with tents, poles, and sticks (as at contemporary Chichicastenango in the Guatemalan highlands) or more complex divisions of space
3. Rude and un-mortared stone alignments delineating aisles and separating individual stalls (analogous to stone tent circles of the Plains Indians), possibly topped with portable or perishable superstructures (e.g., possibly Buenavista del Cayo; see Cap, this vol.)
4. Basal walls formed from cut and mortared stone, creating more permanent and more clearly delineated spaces or stalls for vendors, such as at Calakmul
5. Causeways as built surfaces that provide effective market areas, with the balustrades delineating the margins forming the rear of the stall areas
6. The built market: Tikal, Yaxha, Calakmul, and perhaps some Postclassic Maya cities

The political changes (devolution, see Becker 1994) associated with the shift from the Classic to Postclassic periods in the Maya realm marked a transformation that included the end of the construction of built markets in the southern lowlands. The subsequent vitality of large Yucatecan sites, such as Mayapan, saw elaborations of most architectural forms. Yet built markets do not seem to be among them. What is this telling us? Do the relatively large numbers of houses (compounds) occupied by craft specialists that have been identified at Tikal relate to the built market at the site, or is this apparent correlation a function of the wide testing and scientific field methods used for the residential areas of the site? The large population in and around a major Maya city creates a demand for one or more markets to provide for a complex economy. While there remains some variation in population estimates for greater Tikal, as many as 30 thousand to 40 thousand people may have occupied this polity. Distances to nearby sites, and a wide range of resources, provided access to the built market at Tikal for at least this many more individuals. Between the need for vending space and the economic stimulus provided by building huge public projects at Tikal, one can easily see why a major architectural undertaking would be an important activity for the city's rulers.

Conclusions

In 1927, J. Eric Thompson first promulgated his popular Priest-Peasant "model" or story explaining the so-called "collapse" of Classic period Maya civilization (see Becker 1979). His confabulation flew in the face of the accumulating evidence for the presence of large cities. To his credit, he never mentioned this story in any of his scholarly publications. Yet 30 years later the idea of a disenchanted peasantry overthrowing a harsh priestly class was still touted by scholars. Traces of Thompson's fiction still linger today, and they are creeping back into the semi-popular literature. They have also been taken up by those who doubt the Maya had any markets (see King and Shaw, this vol.). As scholars we can draw a lesson from this experience.

We may be able to infer the need for markets among the Classic period Maya, but we cannot simply posit market places wherever an open space appears on a site map. Evaluating the function of buildings solely on the basis of what seems to be a reasonable use obviates the need for any archaeology. We also have looked for open spaces for markets when we have had numbers of causeways at various sites, but have seen them only

as roadways leading *to* something. Modern paved roads throughout the Maya region and beyond are completely lined with shops and services, yet we have never considered their ancient predecessors as parallel situations. Consideration of the evidence for suspected market areas identified solely through mapping must be followed by judiciously planned test excavations. The results of the tests need to be evaluated by standards agreed upon in advance. It's not that we need more testing; we need specific goals for those tests and reasonable means by which to interpret results. When we search for indications of markets, whether by supposed chemical signatures or architectural features, we need to understand how markets operate within traditional societies and seek archaeologically detectable evidence for them.

Acknowledgments

Sincere thanks are due Leslie Shaw and Eleanor King for inviting me to join their session at the 2007 meeting of the Society for American Archaeology. Dr. King's extensive and important editorial efforts and constant encouragement are deeply appreciated. Thanks also are due to Dr. Linda Manzanilla for rekindling my interest in research relating to Plaza Plans. Special thanks are due Christopher Jones for his many useful suggestions and continued efforts to understand market contexts. Thanks also are due to the late Bruce Dahlin, and to Paul Amaroli, Kitty Emery, Laura L. Gámez, Jon Hageman, Maxime Lamoureux St.-Hilaire, Richard Swain, and two very helpful anonymous reviewers who provided suggestions that have furthered this research. Special thanks are due to William N. Duncan, Timothy Pugh, Jeremy Sabloff, Richard Terry, and Gregory Urban for providing information and encouragement to follow this line of research. Thanks are due, too, to M. E. and F. P. Gillon for their support in the preparation and editing of this paper. Finally, thanks also are due the Congress of the United States of America for the encouragement provided by the tax rules supporting scholarly research. The ideas expressed here as well as any errors of interpretation or of presentation are, of course, solely the responsibility of the author.