
MESOAMERICAN LANDSCAPE ARCHAEOLOGIES

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Abstract

Landscapes figure centrally in conceptions and writings about ancient Mesoamerica. This selective review considers four interrelated kinds of landscapes investigated archaeologically in Mesoamerica: ecology and land use, social history, ritual expression, and cosmologic meaning. The literature on each topic is large, and from its inception, *Ancient Mesoamerica* has contributed significantly. Discussion here focuses on how we got to where we are in Mesoamerican landscape archaeology, important current developments, and directions for the decades ahead.

Travelers and scholars alike have remarked extensively about the lands of what we now call Mesoamerica. *Landscape archaeology* is understood as a more concerted and systematic inquiry about landscapes, especially those of the past; diverse approaches are evident, and not surprisingly, they are shaped strongly by the theoretical perspective and goals of individual investigators (Anschuetz et al. 2001; Ashmore and Blackmore 2008). While recent years have seen much scholarly debate about definitions of *landscape*, the concept is generally understood to refer, at varied scales, to space materializing cumulative interactions of people and their environs (Fisher and Feinman 2005; Knapp and Ashmore 1999; Marquardt and Crumley 1987). In this vein half a century ago, while describing “climatic, vegetation, and geomorphic regions” of Middle America, Carl Sauer (1959:121) wrote not only of the physical settings; he also called attention to the historical implications of the varied capacities of these landscapes to shape human settlement. All of these topics and ideas infuse conduct of landscape archaeology in Mesoamerica.

This selective review highlights four interrelated kinds of landscape archaeology investigated in Mesoamerica: ecology and land use, social history, ritual expression, and cosmologic meaning. The literature on each topic is large, and from its inception, *Ancient Mesoamerica* has contributed significantly, as illustrated in the sample of works cited in this essay. Discussion for this *katun* anniversary of the journal considers how we got to where we are in Mesoamerican landscape archaeology, important current developments, and likely directions in the *katun* ahead.

ECOLOGY AND LAND USE

Subsistence regimes across Mesoamerica manifest quite varied ecologies and settlement histories. Whitmore and Turner (1992) write of diverse “landscapes of cultivation” that Spanish conquerors would have witnessed, along idealized transects tracing the *entradas* of Cortés from the Gulf Coast to central Mexico, Montejo through the Yucatan Peninsula, and Alvarado in Guatemala. To understand the sources of sixteenth-century diversity, archaeologists and

geographers have examined closely the landscape evidence for farming, other kinds of land use and resource management, as well as the impact of landscape modifications, anthropogenic or otherwise.

Ecological and cultural evolutionary theory, together with favorable funding potentials, sparked opportunities for extensive landscape and settlement surveys after World War II (Nichols 1996; Sabloff and Ashmore 2001). Work by Armillas (1949) and Palerm (1972) laid well-known foundations for understanding Mesoamerican land use, especially irrigation agriculture. Accounts of such studies and then-emerging new findings occur in pertinent volumes of the *Handbook of Middle American Indians*, beginning with the first, on *Natural Environments and Early Cultures* (Wauchope and West 1964). From the 1950s and 1960s, inspired by Steward and Willey, and then given further resolve by the systems-evolutionary frame of processualism, cultural ecology’s combined foci of subsistence, demography, and the development of social complexity have shaped richly productive research articulating settlement, land-use strategies, resource procurement, and symbiotic exchange. Milestone studies took place in the Basin of Mexico (Sanders 1981; Sanders et al. 1979), the Maya lowlands (Kurjack 1979; Puleston 1973; Willey et al. 1965), the Valley of Oaxaca (Flannery 1973; Kowalewski 1990; Marcus and Flannery 1996), and the Gulf lowlands at San Lorenzo (Coe and Diehl 1980). Although far from the first inquiries in their respective locales, these projects transformed knowledge about local landscapes and settlement in fundamental ways while contributing to general models of cultural ecology and social evolution. From this same formative period, MacNeish’s (1981) quest to document domestication of the quintessential Mesoamerican food plant, maize, remains a cardinal contribution in archaeobotanical studies.

Even as these ground-breaking studies defined major Mesoamerican trajectories in human ecology and social evolution, parallel landscape efforts complemented and pointed to variation from what were becoming normative reference models. Well known examples of the parallel investigations include work on the Pacific coast in Guatemala and Mexico’s Soconusco region, as well as in preceramic contexts of the Basin of Mexico (Coe and Flannery 1967; Niederberger 1996; Voorhies 2004).

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Ongoing work sustained inquiry about subsistence strategies, how they have varied across environments, and how they have changed over time. Landscape archaeologies in both the Maya and Gulf lowlands, for example, transformed models of relatively simple cultivation regimes to ones recognizing intricately complex “mosaics” of intensification and crop diversity (Fedick 1996; Harrison and Turner 1978; Rust and Sharer 2008; Stark and Arnold 1997). Anthropogenic and other landscape alterations affect the productivity or even suitability of specific terrain for cropping (Joyce and Mueller 1997; Ortiz and Cyphers 1997).

Although maize remains the paramount crop, Mesoamerican landscapes yield diverse other foods (Lentz et al. 1997; McClung de Tapia and Aguilar Hernández 2001; McKillop 1994; McNeil 2006; Millon 1955; Powis et al. 2008). Water management, too, continues prominent study as to the many ways Mesoamerican peoples have sculpted the landscape to enhance and control supplies of this essential resource (Davis-Salazar 2006; Dunning et al. 1999; Lucero and Fash 2006; Scarborough and Gallopín 1991; Scarborough et al. 1994). Although irrigation is not the only aspect considered, its persistent study reaffirms interests asserted early on (Nichols et al. 1991). Equally necessary for human survival, salt is examined with respect to both production in and trade across landscapes (McKillop 2002; Williams 2002).

Sources and exchange routes for other mineral resources are also pertinent to landscape archaeology, as are inferences about transport means and costs (Drennan 1994). The absence of beasts of burden in Mesoamerica plausibly affected transport potentials; alternately, water routes could facilitate movement. Metals and metallurgy link Mesoamerica, coastal Panama, and the Andean coast (Anawalt 1998; Hosler 2003). Even stone was often procured for significant distances; its critical roles in Mesoamerican society—for building, sculpture, food processing, land clearing, weapons, or ritual paraphernalia—seemingly bested transport challenges (Stark 1999). Although chert, basalt, limestone, and other stone types serve prominently in domestic provisioning and civic contexts, obsidian and jadeite imply elevated valuation based on specific symbolic meanings together with patchiness or rarity in their source occurrence. Chemical sourcing of obsidian continues to shape inferred landscapes of exchange, as exemplified in the special section on obsidian in *Ancient Mesoamerica* (Volume 4, 1993). Jadeite has one known Mesoamerican source, now firmly localized in the Middle Motagua Valley (Seitz et al. 2001). This has been a critical resource from at least Olmec times, serving as the material embodiment of maize, human creation, and by extension, an emblem of ritually sanctified authority (Taube 2005).

Two landscape ecology topics—drought and land degradation—have seen notable upsurge in recent years, perhaps relating to concerns with world habitats today. Climate change models, especially inference and timing of droughts, are discussed prominently with regard to social change and especially potential relation to the Maya “collapse.” From Messenger’s (1990) article in the first issue of *Ancient Mesoamerica*, to two “special sections” in 2002, as well as a plethora of other journal articles and books, landscape records of climatic indicators and models for their understanding stand out as topics of critical interest. So, too, do issues of landscape overuse, erosion, or general mismanagement (Paine and Freter 1996; Pyburn 1996).

SOCIAL HISTORY

While shaping prospects for provisioning society, landscapes also embody social identity and social memory (Alcock 2002; Basso

1996): landscapes are tablets for inscribing and remembering history. Advances and debates here draw from conjunction of art history, epigraphy, and archaeology long available to the study of ancient Mesoamerica (Fash and Sharer 1991). “History” here can be taken literally as text-based or more broadly as implied in other material remains for societies, or segments of societies, without written records (Houston 1994; A. Smith 2003). Among the topics highlighted in landscape histories are migration epics and political cartographies, mapping events and relations among peoples and places, and the challenge to landscape archaeology in situating text and image referents on the ground.

Some of the most famous migrations of ancient Mesoamerica stubbornly resist landscape placement; the location of Aztlan is a prominent case in point (Chagoya 2001). Of course, myth, metaphor, and history intermingle in migration from there as from a specific, localized emergence place such as the seven caves of Chicomoztoc. There is a rich intellectual tradition in identifying Tollan with one or more particular places—Tula in Hidalgo, Teotihuacan, and other places—along with recognizing its profound significance as a conceptual “place of reeds” (Boone 2000; López Austin and López Luján 2000; Rice 2007; Ringle 2004).

Pohl and Byland (1990; see also Byland and Pohl 1994; Smith 1973) conjoined epigraphy, iconography, oral history, and ground survey in systematic, extensive landscape archaeology of Mixtec history. Polity capitals and dynastic interactions, including marriage alliances, ritual travel, and military conquest are increasingly identified with physical landmarks. In sculpted and painted iconography, roads marked with footprints or travelers are portrayed as connecting the places and events, reflecting a widespread and longstanding means of citing movement across the Mesoamerican landscape (Johnson 2005; Marcus 1983a; Taube 2002). Conquest and more diplomatic actions of eleventh-century Mixtec Lord Eight Deer “Jaguar Claw” are now traced from his base in highland Tilantongo to his second capital, at Tututepec, on the Oaxaca Pacific coast (Joyce et al. 2004).

Other histories, well attested in text and material remains, are evident less directly in the landscape per se. For example, the late fourth-century *entrada* of Teotihuacan emissaries into the Maya area and their impact on Maya dynastic governance are occurrences securely, even famously, situated through text, architecture, offerings, and burials, especially at Tikal and Copan (Buikstra et al. 2004; Fash and Fash 2000; Martin and Grube 2000; Sharer et al. 2005; Stuart 2000; compare Wright 2005a). Also securely documented is reverent sacrifice of high-ranking Maya at the Moon Pyramid of Teotihuacan around A.D. 350 (Sugiyama and López Luján 2007). The routes of transit are less clear, however, less tied materially to physical places. We need more information on the landscapes and roles of intermediary locations, places distinct from the Basin of Mexico or from Maya polities, as part of landscape corridors for political, economic, and social exchange (Cowgill 2003b; García-Des Lauriers 2007; Navarrete 1978; Smyth and Rogart 2004).

Political cartographies most often rely on settlement hierarchies in the landscape and, when available, ethnohistoric place referents or pre-Hispanic texts with names linked to political capitals (Dunning and Kowalski 1994; Graña-Behrens 2006; Marcus 1973, 1976; Martin and Grube 2000; Rice and Rice 2004). Absent texts, architectural and other material styles suggest political relations (Ashmore and Sabloff 2002; de Montmollin 1995). Some architectural forms, especially ballcourts or other buildings associated with ritual, are inferred as political boundaries (Finsten et al.

1996; Kowalewski et al. 1991). And sometimes landscapes and settlement relations are materially inscribed with the kinds of routes and connections cited earlier—or with barriers. The principal overt connectors are pedestrian causeways or road systems, and the barriers are walls and fortifications. A special section in *Ancient Mesoamerica* (Volume 12, 2001) is devoted to Maya causeways, and its articles illustrate the social implications drawn from roads of varied form and length (see also Folan et al. 1995; Keller 2006; Suhler et al. 1998). Fortifications mark landscapes in many parts of Mesoamerica, some quite dramatically (Demarest et al. 1997; Hirth 1995). All materially embed social history in the land.

RITUAL EXPRESSION

In many parts of the world, distinctions blur between the contingencies of history and regularities of ritual. Their expressions in landscape archaeology likewise overlap, drawing once again from diverse but especially humanistic perspectives. Political succession can, for example, be cast as divinely ordained, ritually inevitable—even when actual transitions are challenged in practice. In this vein, Rice (2004) argues that the succession of preeminent politico-ritual capitals across the Maya world was foreordained in the structure of time-space, in cyclical transfers of authority and obligation every 260 years, a period called the *may*, akin to annual transfers in Yucatec Maya communities (M. Coe 1965a). Both contingent and regular expressions are manifest in the landscape; this section focuses on procession and pilgrimage and the relation of scheduling events in the landscape through astronomy and the calendar.

The cyclical transfers of Yucatec community authority cited above are accomplished in processions of community members together with pertinent god figures, the orderly direction of their collective movements stipulated by the orderly progress of the sun through space and time—from the east, counterclockwise. Completing the process reestablished authority and recentered the community in the world. Among the Aztecs, the annual calendar designated a series of ceremonies and specified sacrifices, conduct of which required

movements and contact of people traveling through the land. . . . The ritual cycle ensured that there was a constant, organic flow from the center of the *altepeme* (city-state), through the *calpultin* (corporate groups), and out into the natural landscape. . . . A cursory view of just four of the yearly ceremonies reveals both a tendency to saturate space beyond the ceremonial center and a tendency to reconcentrate people, goods, and symbols within the axis mundi. (Carrasco 1991:40)

Passage in this case was not a single circuit but a series of trips, often strenuous undertakings, to sacred locations. Sometimes merchants' routes paralleled those of pilgrimage; Freidel (1981) suggested (see also Halperin 2007) that periodic fairs could mark simultaneously pilgrimage destinations, public festivals, and market gatherings. Again, the result was ritual integration and recentering of extended communities.

In other cases, ritual travel is more contingent and occasional, if again often arduous, as in visiting an oracle. Mixtec Lady 9 Grass, prominent oracle of late pre-Hispanic times, imparted decisions shaping episodes of political history from her base at the funerary cave of Chalcatongo (Pohl 1999). Yet pilgrimages, like other rituals, were not confined to upper social classes, as illustrated by Maya pilgrims who journeyed to the oracle of Ix Chel on

Cozumel (Miller 1982:96; see also Kubler 1985; Patel 2005; Rice 2007). At the cave of Naj Tunich in Guatemala, abundant images and glyphic texts suggest reverential visits, and when paired with the absence of nearby settlements, point to acts of pilgrimage (Ashmore and Blackmore 2008; Brady 1989; Stone 1995). Offerings at places like the hill and springs of El Manatí in Veracruz similarly imply repeated ritual visits at unknown intervals and perhaps as pilgrimage from as early as 1700–1600 B.C. (Ortiz and Rodríguez 1999).

Whether cyclical or contingent, the arduousness of travel, as well as its distance can impart social value: the person undertaking ritual journey stands to acquire exotic knowledge, experience, and sometimes material items, none of which are available to others (Helms 1988). The journeys may lead to an altered state of consciousness, as in shamanic trance, or can be physical movements (Tate 1999). In either case, the traveler returns as a changed person, often newly endowed with authority. Landscapes of ritual expression are integral to Mesoamerican lifeways.

COSMOLOGIC MEANING

Mesoamerican landscapes are alive, pervasively imbued with cosmologic meaning, or cosmovision (Broda 1991; Carrasco 1990). Earth, sky, and underworld are sacred animate realms, and all Mesoamerican landscapes are thus inherently sacred landscapes. Soil, stone, water, animals, plants, and celestial bodies all are relevant to people's understanding their observed surroundings—and through that, understanding the cosmos. That is, the cosmos is mapped in the experiential world in which people live their lives and in which mountains, water, stars, and caves are key landmark categories for organizing those lives. Among the most elegant representations of such cosmovision are, in my view, the Aztec Templo Mayor (Broda et al. 1987), and cosmograms in both the Maya Madrid codex and the Fejérváry-Mayer codex of central Mexico. Both codex images diagram Mesoamerican space and time, integrating calendric cycles with world directions, deities, colors, and trees (Aveni 2000). Markings along the perimeter allow counts combining the 260-ritual count and the 365-day year—a “symbol of completion par-excellence” (Aveni 2000:261). The whole describes a four-sided figure, cardinally oriented, with its center point as pivot for the whole. Together with the center, the corners make a five-part figure or quincunx, an arrangement whose material antiquity extends back to at least 1000 B.C. (Mathews and Garber 2004; Taube 2000). When Mesoamerican peoples move across the landscape, they move within space and time structured in this cosmic manner (Rice 2007).

Moreover, astronomy shaped space and time in ancient Mesoamerica, as it did and still does elsewhere (Aveni 2001). The late Linda Schele and her colleagues viewed the stars as mapping the story of creation, its events portrayed in the changing configurations of individual stars, planets, and whole constellations (Aveni 2002; Freidel et al. 1993; Schele 2002). On the ground, buildings and architectural assemblages were frequently set in orientation to celestial phenomena. The principal orientation of Teotihuacan, so-called “Teotihuacan north,” is linked to position of the Pleiades. Among other famous instances are the so-called “E-Groups” of Preclassic and Classic period Maya sites, solstice/equinox observatories named after their first recognized occurrence in Group E at Uaxactun (Aimers and Rice 2006).

Acknowledgment grows for material representations of these sacred landscapes and their components having appeared by or

before 1000 B.C., especially in Olmec society and culture. While manifestations of these ideas could be as small as an individual artifact, they also encompassed understanding at extensive scales more commonly considered landscapes. As Schele put it, after “spreading through Mesoamerica during the Middle Formative, these [Olmec-linked] symbols, deities, and cosmology functioned in subsequent Mesoamerican history like a fugal variation on a set of original themes” (Schele 1995:105). For many, such a time frame is a minimum threshold, with inference of these or related ideas deeper in time to pre-agricultural periods (Flannery and Marcus 1976; López Austin 2001; compare Kubler 1962; Normark 2008).

Ecology, ritual, and politics fit comfortably, even inextricably, in cosmically understood Mesoamerican landscapes (Flannery and Marcus 1976). Recent research on water ritual and management illustrates the integration of scientific and humanistic approaches in landscape archaeology. Flowing waters as well as standing bodies are well established as critical landscape components (Stark 1999). Pioneering attention to irrigation finds complement in recent studies of hydrology manipulation (Cyphers 1996; Dunning et al. 1999; Lucero and Fash 2006), and of how settlement location, arrangement, and orientation assert control of water resources (Brady 1997; Ishihara 2008b; Heyden 2000b; Scarborough 1998). Subsistence resources are intrinsic parts of the sacred landscape. Reverence to water sources is evident in offerings at springs, lagoons, and *cenotes*, beginning—as cited earlier—by at least the late second millennium B.C. at El Manatí (Ortiz and Rodríguez 1999).

The combination of ecology, ritual, politics and cosmic understanding seems attested as well in Late Classic period Copan landscapes. Settlement studies founded in ecological and evolutionary perspective link extraordinarily dense Maya occupation with the best arable soils and locally abundant water and stone resources (Fash 1983; Webster et al. 2000); the densest portion, the “urban core,” is relatively clearly delimited by construction distribution on the land. Elsewhere, I have suggested that the positioning of key Late Classic period civic construction was politically determined: grounded by cosmologic directions, the layout was based around cardinal axes and lent sacred authority to the rulers who commissioned constructions (Ashmore 1991). Maca (2006) disagrees (compare with Coe 1965a), not with the cosmologic underpinnings, but by his suggesting the priority of corners over axes and that periodic processions from one corner to the others ritually

reestablished and recentered the Copan community—contained neatly within the aforementioned urban core. Fash and Davis-Salazar (2006) add another alternative, again not necessarily incompatible with the others, whereby end points to roughly cardinal axes situate Copan between rise- and set-points of the sun (at carved monuments) and between northern and southern landmarks whose physical and directional attributes accord with the cosmologic meanings of sky and watery underworld, respectively. The several interpretations cited are not mutually exclusive. They do, however, illustrate the potentials for productive convergence of landscape approaches from complementary theoretical and data perspectives (Folan et al. 1995; Ishihara 2008b; Keller 2006; Tourtellot et al. 2002).

CONCLUDING THOUGHTS

Mesoamerican landscape archaeology has deep and varied history, a rich heritage on which to build further. Inquiry and inference draw from theoretical and evidence diversity that has long characterized Mesoamerican studies. In this essay I have sought to show that, within contexts called landscape archaeology, the diverse approaches have converged increasingly as tests, prods, and complements to one another (Ashmore 2004a; Ashmore and Sabloff 2003; Fash and Sharer 1991). Necessarily omitted from this selective review are important kinds of landscapes, such as household and community domains, that support the foregoing assertion and add further to the mix (Blackmore 2008; Lucero 2008; Manzanilla and Barba 1990; Robin 2002).

In the last *katun* multiple new lines of inquiry have emerged, in tandem with fruitful continuation of established research. The next twenty years offer opportunities for refining evidence and interpretations in all lines mentioned. Among anticipated expansions are two, on which others have remarked similarly. One is substantially increased collaboration—among scholarly specialists and with indigenous leaders—for addressing climate change and landscape degradation with insights from both past and present (Culbert 2004; Fisher and Feinman 2005). The other is foregrounding input from indigenous communities, particularly with respect to ancient ritual landscapes and political cartographies (Borgstede 2004; Byland and Pohl 1994; Ivic de Monterroso 2004). It seems safe to expect that, as these and other developments take place, *Ancient Mesoamerica* will feature the results prominently.

RESUMEN

Los paisajes figuran de manera central en las conceptualizaciones y escrituras de la Mesoamérica antigua. Esta reseña selectiva considera cuatro tipos de paisajes, que están interrelacionados, investigados arqueológicamente en Mesoamérica: la ecología y el uso de la tierra, la historia social, la expresión ritual y el significado cosmológico. La literatura de cada tema es grande, y desde su principio, *Ancient Mesoamerica* ha contribuido de manera significativa. El presente artículo se enfoca en como llegamos a donde estamos en la arqueología de paisaje mesoamericano, los desarrollos contemporáneos importantes y las orientaciones para las décadas futuras.

La teoría ecológica y de evolución cultural, junto con posible financiamiento favorable, ha suscitado oportunidades para inspecciones de paisaje y de asentamiento extensivo después de la Segunda Guerra Mundial. Desde ese entonces, mucha investigación se ha enfocado en estrategias de subsistencia, como han variado en distintos medios naturales y como han cambiado con el tiempo. La arqueología de paisaje en las tierras bajas

mayas y las del Golfo, por ejemplo, ha transformado los modelos de regímenes de cultivación relativamente simples a unos que reconocen modos que son complejos “mosaicos” de intensificación y diversidad productiva. Las fuentes y rutas de intercambio para otros recursos minerales son también pertinentes a la arqueología de paisaje, como también son los cálculos de costos de transporte. Dos temas de ecología de paisaje – sequía y degradación del medio ambiente – han surgido notablemente en los últimos años, posiblemente relacionados a las preocupaciones acerca los *habitats* mundiales de hoy en día.

Entre los temas destacados en las historias de paisajes están las épicas migratorias y cartografías políticas, que trazan eventos y relaciones entre seres humanos y lugares y el desafío que se presenta a la arqueología de paisaje de situar referencias de texto e imágenes del suelo. Aunque algunas de las migraciones más famosas de la Mesoamérica antigua resisten tercamente la ubicación en el paisaje, los capitales de estados e interacciones

dinásticas están identificadas cada vez más con el monumento físico. A veces el paisaje y las relaciones de asentamientos están inscritos materialmente con las rutas, corredores y conexiones – o barreras.

En Mesoamérica, como en muchas partes del mundo, las distinciones entre las contingencias históricas y regularidades de rito se hacen borrosas. Las procesiones anuales o cíclicas involucran comúnmente una serie de viajes agotadores a lugares sagrados, del cual resultaron la integración ritual y ayudan a centrar nuevamente a la comunidad extendida. En otros casos, el viaje ritual es más contingente y ocasional, aunque arduo, como en una visita a un oráculo. La tierra, el cielo y el inframundo son reinos sagrados, y todos los paisajes mesoamericanos, entonces, son intrínsecamente

paisajes sagrados. El ambiente construido está orientado frecuentemente hacia el fenómeno celestial. La ecología, el ritual y la política encajan de manera cómoda, hasta de manera inextricable, en los paisajes mesoamericanos con el entendimiento cósmico. Los próximos 20 años ofrecen una nueva oportunidad para refinar las evidencias e interpretaciones en los tipos de arqueología de paisaje que hemos considerado aquí. Las investigaciones futuras seguramente enfatizarán las colaboraciones para incorporar evidencias del pasado para dirigir temas del paisaje contemporáneo, como el cambio climático, por ejemplo. La investigación de los paisajes históricos y la expresión de ritual servirán para alentar la participación colaboradora de líderes indígenas.

ACKNOWLEDGMENTS

I thank Geoff McCafferty for inviting preparation of this article, and Chelsea Blackmore, Shankari Patel, Pamela Geller, Jerry Sabloff, Bob Sharer, and Tom Patterson for encouragement and helpful critique

during its writing. Jelena Radovic kindly translated the Spanish summary. I dedicate this essay to Bruce Byland, Bill Sanders, and Gordon Willey.