



Journal de la société des américanistes

Maya times | 2017
Hors-série – Tiempos mayas

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Electronic version

URL: <http://journals.openedition.org/jsa/15282>

DOI: 10.4000/jsa.15282

ISSN: 1957-7842

Publisher

Société des américanistes

Electronic reference

Valentina Vapnarsky, Aurore Monod Becquelin, Dominique Michelet and Fabienne de Pierrebourg,
« Measures and textures of time among the Maya: the spoken, the written, and the lived », *Journal de la
société des américanistes* [Online], Maya times | 2017, Online since 31 December 2017, connection on
02 May 2019. URL : <http://journals.openedition.org/jsa/15282> ; DOI : 10.4000/jsa.15282

Measures and textures of time among the Maya: the spoken, the written, and the lived

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It is well known that the Maya conceded and continue to concede extreme attention to time, omnipresent in the multiple forms of computation elaborated over centuries, that permeate and found, to a large extent, social organization as well as political and religious control. However, although the various calendars that regulated and paced the life and history of the Maya have been studied with great attention, other facets of their way of conceiving, measuring, and living time have been seldom addressed. This concerns a variety of aspects and fields: the plurality of the iconographic and linguistic representations of time; the configuration of the temporal frames of reference used at different scales, as well as its links with regimes of knowledge and forms of actions; the temporal organization of daily activities and the qualities attributed to the daily, seasonal or annual phases; the relation between the short period of times of the lived history and those, long ones, typical of the memory and of the mythical-historical narration; or the marking and functions of events that characterize the beginning or end of a cycle. Continuously reworked, time is structured as frames of reference subject to varied objectifications, it is matter and entity as well as immaterial support, and a central axis to understand past and present Maya societies. Apprehending time in its various facets in said societies, based on their practices, languages, images, and writings, is also an important contribution to a more general understanding of the ways in which cultures express and shape temporality.

By *measures* of time we refer to the different rhythms and temporal divisions that are recognized and culturally instituted, their links with the structuring of

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activities and their incidences on the definition and perception of events and forms of change—without overlooking the irregular or unexpected durations that can erase or, on the contrary, highlight particular moments. By *textures*, we want to emphasize the fact that lived and perceived time, memory, action, and projection in the short or long term, individually or collectively, is structured in a constitutive manner with other essential parameters of cognition and human interaction: conceptions of agency, regimes of knowledge, epistemic positions, and social relations.

The articles that make up this volume are the products of research that was presented in the colloquium *Mesures et textures du temps maya: le dit, l'écrit, le vécu* / *Measures and textures of time among the Maya: the spoken, the written, and the lived*, organized at the musée du quai Branly, in October 2014¹.

The focus of the colloquium was on the representations and constructions of time among the Maya, and their inscription both in the flow of life and the ways of acting, as well as in memorial and prospective practices. The perspectives were multidisciplinary, counting on contributions from archaeologists, epigraphists, historians, ethnologists, linguists, and ethnohistorians. The analyses on the temporal conceptions of the Maya at different time periods came together with studies on contemporary societies, seeking to open new research perspectives on the multiple conceptions, expressions, and praxis of time. The articles thus present research and hypotheses in varied fields in relation to an essential theme, both from the point of view of Maya and Americanist research, and as current reflections in human sciences and cognition.

This research is part of the multidisciplinary perspective that has encouraged the activities and international exchanges of the GERM². Several of the

1. The colloquium took place in the context of the Maya exhibition *Révélation d'un temps sans fin* (October 7, 2014-February 8, 2015, musée du quai Branly, curated by Mercedes de la Garza y Camino). The colloquium was organized by the Groupe d'enseignement et de recherche maya, GERM (universities of Paris Nanterre, Paris 1, CNRS, INALCO), in collaboration with the Département de la recherche et de l'enseignement, and the Direction du développement culturel of the musée du quai Branly, and the Universidad Nacional Autónoma de México. This publication is supported by a public grant overseen by the French National Research Agency (ANR) (Labex *Pasts in the Present* [ANR-11-LABX-0026-01] and the Fabriq'am project [ANR-12-CULT-005]), as well as from the Centre enseignement et recherche en ethnologie amérindienne (EREA) of the Laboratoire d'ethnologie et de sociologie comparative (LESC, CNRS-université Paris Nanterre). We are grateful to Bonnie Chaumeil (EREA) for her invaluable work as editorial assistant for the volume and to Marie Noual for her meticulous work in correcting several of the contributions in Spanish.

2. The reader can refer in particular to: Monod Becquelin Aurore, Alain Breton and Mario H. Ruz (eds.), 2003, *Espacios mayas: usos, representaciones, creencias*, Universidad Nacional Autónoma de México, Centro de Estudios Mayas, Mexico, 685 p. Monod Becquelin Aurore, Alain Breton and Mario H. Ruz (eds.), 2010, *Figuras mayas de la diversidad*, Universidad Nacional Autónoma de México, CEPHCIS, Merida, 566 p. Nondédéo Philippe and Alain Breton (eds.), 2012, *Maya Daily Life* (Proceedings of the 13th European Conference, Paris,

authors of this volume have been longtime collaborators due to a shared desire to confront the concepts, methodologies, and the theories of each discipline.

In one of his works on time and the Middle Ages, historian Jacques Le Goff wrote that one of the main conceptual and methodological innovations of historical thought of the 1920s had been the substitution of “a unitary, linear and objective, mathematically divisible concept of time by a multiple, bountiful, reversible, subjective concept, much more qualitative than quantitative” (Le Goff 1999, p. 403, our translation³). A comparable change of viewpoint inspired us in our approach to the Maya’s social construction of time. This broadening of the perspective has gradually developed in Maya studies over some time now—driven by the same versatility, density, and science with which Maya societies and cultures have treated time. Some researchers explored the complex views of temporal frames and especially the articulation between the cyclical and the linear. Others highlighted the processes of abstraction and objectification of time through writing and religion, or the adjustments and manipulation of dates for political action and the construction of collective history⁴. More recently, the coexistence of parallel conceptions of time, linked to different areas of the world and of experience has been the object of reflection⁵. However, there is still much that needs to be understood regarding the more subjective and less chronological apprehension of temporality (duration, rhythms, anchorages, recollections, projections...), within everyday practices or more widely spaced and variously institutionalized actions, whether habitual, ritual, or unexpected. A renewal in the understanding of the diverse experiential and structural facets of temporality has been made possible by the emergence or the sophisticated elaboration of important heuristic paradigms in the last few decades. Within these currents, we can highlight the contributions of pragmatics in the understanding of the different modalities of referring to time and inserting oneself in simultaneous temporalities in the course of interactions and activities; works in cognition about memory, multimodality and representations; perspectives of anthropological linguistics on indexicality, the negotiation of knowledge and agency, and discursive genres; as well as the use of new techniques to refine the etic times that archaeology deals

December 5-6, 2008), *Mesoamerican Act*, 24, Verlag Anton Saurwein, Markt Schwaben, 206 p. See also page <http://germ.hypotheses.org/category/publication>.

3. Le Goff Jacques, “L’Occident médiéval et le temps”, in Le Goff Jacques, 1999, *Un Autre Moyen Âge*, Quarto Gallimard, Paris, p. 403-419. Translation found in Goldberg Sylvie, “Accounts and Counts of Jewish Time”, *Bulletin du Centre français de Jérusalem*, 7, automne 2000, p. 18-36.

4. Stuart David, 2011, *The Order of Days*, Harmony Book, New York, 352 p.

5. See for example Garza Mercedes de la (ed.), 2015, *El tiempo de los dioses-tiempo. Concepciones de Mesoamérica*, Universidad Nacional Autónoma de México, Centro de Estudios Mayas, Mexico, 258 p.

with and tries to bring them closer to the emic times, inherent to the agents of ancient history. While the analyses presented in this volume are inscribed very differently in these epistemic orientations, they all show how fertile these paths can be. They also confirm that time, in its different durations, requires time to be explored and understood. We hope that this volume will be an important step in this field of research.

The fifteen articles that follow were arranged in four sections, but several actually relate to more than one section.

I) *The lived times*, where we investigate how time is inscribed in the pragmatics of action, dialogue or even generational transmission.

II) *The textures of change: juxtapositions, manipulations and transformations*, where the reactions and the incidences on the conceptions of time that are triggered by situations of change, are analyzed.

III) *Construction of the memories: images and words*, where the diverse processes of recalling elements and events that become salient are explored.

IV) *Signs of the times*, where the selected aspects of the world to construct the visual, gestural or verbal representations of time are questioned.

Lived time

Lived time constitutes a fundamental axis for the understanding of temporality. The section gathers contributions from archaeology, ethnohistory, anthropology and linguistic anthropology. These take into account a variety of contexts and scales, from the dialogical situation of conversations (minimal, intimate, and implicitly charged), to the memory transmitted from one generation to another two generations, which can be inscribed in specific organizations detected by archaeology. In the three contributions, some of the strategies that accompany human interactions and the plasticity that shapes them are explored in diverse historical, socio-religious, demographic, and ecological conditions. The analyses show that lived time is inseparable from the past and the future—whether projected or prophetic—in different manners. The questions raised by this group of articles are in direct resonance with the interrogations on the texture of change and with those dedicated to the solidification of the tradition, developed in the following sections 2 and 3.

In their essay, Marie-Charlotte Arnould, Chloé Andrieu, and Mélanie Forné attempt to capture lived time of the elites and common people of the lowlands along what they call the “long ninth century” (AD 760-920). During this time period, the transition between the Classic and the Postclassic periods took place, that is, the episode that was described as the “collapse” of the Classic period civilization. To approximate lived time, Arnould et al. order in parallel, and in successive periods of about fifty years (i.e. the duration of two generations)

four major classes of occurrences likely to clarify the events and processes that took place during the interval studied. These include the dedication of stelae and altars with iconography and inscriptions, wars and other acts of violence, the construction of monumental buildings and, finally, the fluctuating number of people at the sites. Of course, all of this while keeping in mind the sequence of droughts occurring in the background. All of these events are considered within short periods of time (at least at the level of archaeology)—which correspond to the duration of life of the actors—or located in a not so distant past, close enough to still be recalled by them. They allow to reconstruct the behavior of the agents in at least two areas: the organization of the elites and their mutual relations, on the one hand, and the movements of the commoner populations on the other. The authors highlight a set of cognitive factors that presided over the observed behaviors more than ten centuries ago, from the awareness of the present on the part of all the actors, their knowledge of the more or less distant past, to their perception of the future with regards to their decisions.

In a journey through numerous colonial, native, and Hispanic sources, Mario Humberto Ruz demonstrates that conceptions of time were at the very heart of the gradual and multi-faceted spiritual conquest of the Maya world. In fact, it was not in vain that the Catholic cleric identified the “bearers of days” as the protagonists of idolatry. Faced with the actions taken against them, and against the destruction of the traditional calendrical books that were still being made or preserved and consulted, the Maya invented a wide range of ways to accommodate, rather than reject. On the strictly calendrical side, they experienced several forms of juxtapositions and conjugations, which allowed them to maintain for a long time their own memory, rooting it in the new records brought by the Spaniards. On the other hand, concerning the providential and universal vision of history imposed by the conquerors, the Maya—who, through the transcription of their languages were able to transfer from the oral to the written many elements of their traditions—did not hesitate to construct hybrids that sometimes led them to try to invert the colonial order. These different measures could only have occurred due to what the author describes as “millennial cultural plasticity,” suitable for recreating universes of memories. Now, even in the present with all the important changes related to temporality that occur, the Maya would continue to reinvent lived time: both in their conceptions and in their practices.

Using a large amount of field documentation collected among the current Maya *macehuales* (or *cruso'ob*) of Quintana Roo (Mexico), Valentina Vapnarsky offers a comprehensive overview of the expressions available to Yucatecan Mayan speakers to deal with the future. In order to overcome the image of a closed temporal circle that entails the vision of a future traced on the past—that the predominance of aspectual forms in the Mayan languages could reinforce—and by virtue of the contributions of anthropological linguistics, the author focuses on the pragmatic conceptions of speakers. Considering them as agents,

she integrates in her analysis a multitude of real interactions, from everyday conversations to stories, historical accounts, and prophecies. The use of linguistic forms that allow us to talk about what has not yet happened, and the variety of situations that lead to project what is going to, can or should happen, are scrutinized. A “plural vision of the future” is displayed, rich and nuanced, which allows the understanding of the multiple temporalities of the worlds evoked from the interactions (commitment, intentionality, shared knowledge), and the link of anticipation with epistemic, agentive, and intersubjective parameters. Only one of these worlds is literally defined as future. The one marked by *biin*: a predetermined future, ineluctable, beyond human control, although inscribed in the conception of an open cyclical time. Within the broad set of Yucatec prospective forms, *biin* is the only one that brings together all the semantic and pragmatic dimensions found in the mental (cognitive) projection of the future, thus building the world of prophecy.

The textures of change: juxtapositions, manipulations, and transformations

The second section questions the dynamics of changes that is implied and generated by the manipulations of time involved in the maintenance of societies. The imaginary of continuity and ruptures is observed along with their practical inscriptions. New mental maps appear, drawn by words, events, and processes. Archaeology makes it possible to explain the spatio-temporal conceptions that characterize the dawn of pre-Hispanic Maya culture. Through ethno-linguistic analyses, discursive strategies are elucidated by tracing mythical stories used to configure and legitimize life stories as well as personal or collective aspirations. Ethnohistory reveals the transformations of a written document, testimony of profound changes related to the sociopolitical order and its use. The section begins with a linguistic and semiotic reflection dedicated to explaining an emic category: “substitution.” The latter, understood as a pragmatic of change, allows us to delve into cognitive and practical modules—and their cultural nuances—that act as inescapable operative modes of societies in transformation.

Within a reflection on pragmatic linguistics and semiotics, and based on data collected among the Q’eqchi’ of the Chamelco region, Alta Verapaz (Guatemala), Paul Kockelman examines one of the conditions that preside over the dynamics of change at the heart of societies undergoing transformation, as in the case of current Maya societies. The author analyzes a common Q’eqchi’ word ‘-eeqaj translated as “replacement” or “substitution,” which may apply to different levels and domains, for example, a broken cup that is replaced, a change of political authority after an election, or a major alteration, of the type that we would call cultural or historical. The analysis jointly mobilizes a concept borrowed from economics, the principle of equivalence, and a notion

inspired in particular by the study of colonial dictionaries (Hanks 2010⁶): commensurability. This leads the author to distinguish five modes of temporal conceptualization that are manifested in the relationships established between the concept of “replacement” and the lived time of the Maya, with their beings, objects, daily actions and rituals... The five modes include those of repetition and rupture that define repeated sequences; of reversibility and its opposite that induce the direction; of the calculation or formatting of periods and privileged points of origin; of the relations to different periods between a perceived cause and its effects; and, finally, of the conceptions of the world in transformation. Each mode has its own temporality, and its mechanisms are the products of the variety of ways of counting time (through calculations and stories) while at the same time producing it: periodicities and rhythms, directionality, measuring instruments, causalities, and philosophies.

Based on the data obtained from the deep excavations that took place below Group A at Ceibal (Guatemalan Lowlands), Takeshi Inomata questions the meaning of several architectural arrangements and ritual deposits endowed, a priori, with a strong spatio-temporal symbolism. These securely-dated elements, which are distributed over the span of approximately one millennium and with the oldest traced to what is now considered the beginning of ancient Maya culture, are not homogeneous in the studied sequence. When these vestiges and their modifications through time are compared with those of more or less adjacent sectors, it would seem that paradigm changes would have occurred during that formative interval, both in the socio-ritual practices and in the conceptions of the times and associated spaces. In this manner, the solar symbolism associated with the architectural groups that were long known as “E-Groups” but which may be better understood as “Public ritual complexes,” with all the cyclical-calendrical aspect that up until recently was attributed to them, would not have existed early on and appeared at a relatively later date in the Maya Lowlands. Similarly, the first ceremonial non-quadripartite deposits (or caches) seem to have been more closely related with the earthly world and the springs than with the cosmic organization of the universe and the cardinal directions, a dimension that would, however, be imposed shortly thereafter. In other words, the official Maya conception of spaces and times in the Classic period would have been preceded by other models whose restitution, although difficult, is essential.

Tsubasa Okoshi Harada’s contribution examines the evolution of the *Título de Maní* (1557), a legal document that established a new political entity integrated into colonial society but that has roots in the pre-Hispanic past. The analysis allows further contemplation of the spatial and temporal dimensions involved in the document, and more specifically, on the changes that the colonial order

6. Hanks William F., 2010, *Converting Words: Maya in the Age of the Cross*, University of California Press, Berkeley, 439 p.

introduced in these two dimensions, with the spatial aspect apparently being the most modified. In fact, the pre-Hispanic jurisdiction, headed by the last *halach uinic* of Maní, Don Francisco de Montejo Xiu, and based on interpersonal power relations, became at that time a true territory with both external and internal boundaries. On the temporal side, the same document served as the basis of a new time, Don Francisco becoming the founder of a renovated indigenous space-time. Consulted into the eighteenth and nineteenth centuries, the original title actually changed in function; it served not as a mere relic of the past but as sustenance for different present and successive transformations within the Colonial period. Both in this case and in that of the Xiu's family tree, it appears that the true role of the past was none other than to give life to the present by establishing a pseudo-continuity between the two.

Marie Chosson's article interrogates the way in which present-day Tseltales of the town of Aguacatenango, in Chiapas, conceive of change, and induce and legitimize it. Based on the very specific case of an official request for administrative independence that occurred recently in the town, the author studies the discursive strategies that were used to support the demand. She analyzes the different time frames that were mobilized, and in particular how they are structured and how they were used to think and build the future. By unraveling the grammar and pragmatics of the Tseltal actors, between the charge of the religious positions and the generative malleability of the tradition, fundamental aspects of the conceptions of time are questioned in a new light, as are the relations between space, movement, and time. The processes of typification of the actions linked to modes of chronological anchoring and un-anchoring according to the discursive genres, as well as the articulations between temporal continuity and programmed ruptures, are also questioned. The author observes both the use of temporal and epistemic grammatical markers and the forms of updating and reinterpreting the stories of the past in the narratives mobilized during the meetings for the creation of the new municipality. This linguistic anthropological approach allows us to elucidate the ways in which men in charge of the community position themselves in short and long periods of times of change, and based on past and future cycles, transform the present, making change a search for vital balance and permanence.

Construction of memories: images and words

The third section comprises four articles that are articulated around the processes of memorial construction. The peculiar narrative of an event monopolizes individual memory, it contributes to the establishment of the actors and their typified actions—oftentimes choosing a specific narrative genre—to later give life to a story that becomes emancipated and part of the collective memory. The scheme is illustrated in several contexts, from the violent events that occurred

in Guatemala, or in Chiapas, to the constant updating of the experience that can be observed in sets of painted or embroidered images; an iconology of tradition and temporalities recreated from the deployment of relationships that occur between figures present in the same support, or linked together through the contiguity of clothing, objects, monuments, and discourses. The chains of interactions and transmission come from spoken or implicit dialogues, from daily conversations and intersubjective knowledge that Mayan languages' grammars may index: complex mechanisms by which a culture assimilates for a time what it defines as being the truth, the knowledge necessary to uphold and transform tradition.

Henrik Bergqvist's article explores the intermediate zone between a more or less long period of time (that of the phenomena of grammaticalization), necessary to the author's demonstration, and the immediate proximity of two interlocutors (shared knowledge in order to be understood). The author proposes that in Lacandon, one of the Mayan language spoken in Chiapas, two markers referring to past times *úuch* and *ka'ch* (variant *ku'ch*) contrast each other on an epistemic plane: *úuch* implies the exclusive knowledge of the speaker while *ka'ch* implies shared knowledge among the speakers present (recalling the existence of the common opposition in the grammar of Mayan languages between exclusive and inclusive first person verbal forms). The epistemic value of these temporal adverbs is deduced from the analysis of contexts where they are in opposition. Unfolding both the types of events reported in the discourse, as well as the roles of the interlocutors, the pragmatic construction proposed by the author reveals both the crucial character of the speaker's epistemic positioning relative to its enunciation (classical modality), and, embedded in a second level, the supposed epistemic positioning of its interlocutor. This insertion of perspectives involves the speculation of the speaker with regard to the knowledge of his interlocutor, that is, of their respective competences and the infinite sharing of inferences. Bergqvist's analysis thus participates in a reflection on the slow construction of a pragmatics of interlocution, as well as on the intimate link of temporal reference with epistemic positions.

Agnès Bergeret deals with the narrative modes of construction of the past. Based on Q'eqchi stories (Alta Verapaz, Guatemala) about the period of violence in Guatemala and the analysis of a variety of Maya and Ladino speech, the author demonstrates how different versions of lived events are constructed, reconstructed, and shared through the use of different discursive genres. These serve as a narrative and semiotic plot to the stories, configuring the memories and the interpretation of the experience. They also involve the simultaneous recording of events in different temporalities, from that of biographical time to that of the mythical past. Following the discursive footprints of the heroic and dramatic past of a Q'eqchi' leader, we observe the fluctuating and counterpoint paths of memory. The analysis also reveals how certain situational contexts

and frames of participation, including the presence of the ethnographer, give rise to new stories. The author suggests that the highly traumatic and combative situation filled with intense change and violence such as that experienced by the narrators of the stories analyzed, motivates a specific organization of discursive memory. Nevertheless, it is worth asking whether the principles that it explicitly expresses are not typical of the constant reconfigurations of the “collective memory.”

The superposition of mythical, historical, and personal times that can be observed in the main festival of San Pedro Chenalhó and San Pedro Polhó, two neighboring Tsotsil communities of Chiapas but different with regards to their recent history (the latter an autonomous Zapatista municipality), is the object of the analysis by Rocío Martínez G. This festival takes place between the end of one year and the beginning of another, and is considered to be that of the ancestors or, rather, of the relationship between the living and the dead, which is to say that many temporalities converge in it. The study reveals that the conjunction of the times that occurs on this occasion is mainly created by the ritual dresses that the actors wear and that comprise complex brocade motifs. These dresses, or “other skin,” ensure a transfiguration of the actors and the revitalization of people of the past in all their aspects since the dress represents their external soul. Through the images on the clothing, they also embody in a polyphonic way several stories, be they individual or collective, which are brought back to life in the ritual. The article permits to reflect on the action of transformation and personification and its relationship with the multiplicity of temporal references, through both the analysis of the meanings of the brocades and of the ritual moments and actors of dressing and undressing.

In his innovative analysis, Erik Velásquez seeks to inventory one of the ways in which Maya masters in the classical arts of the Classic period (sculptors and painters working for the elites) managed to translate temporalities into images. Beyond the dozen stylistic figures that the author distinguishes, presents, and illustrates through different images, what is demonstrated is the very possibility that some iconic messages refer to different times, jointly or separately. Overcoming the simple distinction between terrestrial (or historical) versus mythical times and images, the study reveals a whole range of procedures used to invoke—and eventually relate to one other—iconographically different times within the same universe (historical or mythical) or between the two and, also, to evoke “eloquent moments.” In the examples regarding combined times that the author cites and studies, what predominates are the conjugation of pasts, near or far, with different presents. In fact, the reference to possibly memorial times may have had a sole purpose, or at least a main one, that of legitimating the status of those who commissioned the works. Conversely—although the intention might have been the same—sequences of events were often represented by the mere

image of their final act (thus, a war could be summed up by the image of an emblematic captive), all with the aim that a memory be constructed for posterity.

Signs of the times

The last section deals with epigraphic, pictographic, discursive, and ritual practices elaborated to indicate temporalities and give them meaning. The articles bring to light an impressive inventory of semiotic ways and forms, which lend themselves to numerous interpretations. Both the signs of the Long Count calendar and its animal imagery, and the relationship between these two, raise questions not only about the aspects of time that are distinguished and illustrated, but more fundamentally about the basic principle of semiotics: what is the act of representing, from a Maya perspective? Analyses in cognitive linguistics reveal the importance of a cyclical mode of representation of time, which can be found in reference to historical times, but, above all, quotidian times, in speech as well as in writing and gestures—with common metaphors that each medium generates. Regarding the importance of natural phenomena to measure time, the studies confirm that human intervention corrects the anomalies of the canonical cycle of the seasons, revealing several levels in the conceptualization of temporal architectures. The examples all highlight a true semiological philosophy that the Maya developed over the centuries, and of which time has been a privileged object.

Rogelio Valencia is strictly interested in temporal signs, or symbols used to represent time lapses without leaving aside their meaning. These signs are those chosen by the Classic Maya to personify the units of the most famous calendar that they used in that period—and which is most plausibly of Mixe-zoque origin—the Long Count, with its five levels. The signs in question, fundamentally iconic, are animal figures, namely, in increasing order, a monkey, a frog or toad, a raptor or an aquatic snake, and two additional different raptors. When investigating the possible symbolic values of these animals, which had not been previously considered as a whole, it appears that all have a common relationship with water (rain). Whether or not this shared symbolic dimension was still present in the minds of the people when the calendar was used, it suggests that at the time of the creation of the Long Count calendar, the arrival of the rainy season would have constituted a central reference. Indeed, *haab'*, the term used to designate the year, is not only linked to the word for “rain,” but is perhaps even a homonym for it. Regarding the fact that the two upper units of the count are represented by raptors, in the same manner as the year, may be an indication that these units were added to an initially simple (purely annual) calendrical system, with the purpose of creating a true memorial tool.

Kerry Hull, for his part, focuses his contribution on the concrete ways in which the Ch'orti divide time and the fundamentals of these divisions. The

measurements of time are based, above all, on the sun and on the different cycles through which it passes, either at the level of a single day or at the level of the year. Namely a year that starts with the rainy season. That is to say that the relation to time is constructed based on astronomical, meteorological, and vegetal phenomena, with the sun, under its different invocations, considered as an equivalent to the rain divinities. In the astral plan, however, the sun does not “move” alone, but different stars are also determinants with, above all, the moon, which sets favorable or adverse times for numerous daily activities. However, all the phenomena in which time is organized among the Ch’orti are not entirely readable and, therefore, the intervention of specialists is required in order to ensure their adequate and timely occurrence. Consequently, rituals must be considered as essential parts of the construction of time.

Olivier Le Guen scrutinizes the modes of linguistic and gestural representation of time among the Yucatec Maya in their everyday speech and in the coverbal gestures that accompany it. The data also come from a sign language that was recently created in towns with a high proportion of deaf people. Finally, he adds a diachronic perspective, which in turn implies a gender change, by tracing temporal expressions in a set of excerpts relating to prophecies in three books of the Chilam Balam. These diverse examples are analyzed according to different methodologies, from the use of experimental protocols of cognitive psychology, to the meticulous observation of gestures and their referents in natural situations, as well as the study of metaphors in current everyday speech and mythological and historical texts. The author argues that Maya representations of time are always based on a cyclical model that manifests as a revolving movement, or as periods/events that return, are bent, are replaced, with the absence of a linear image or a directional axis of time. This particularly stands out in the gestural production of the Yucatec people, where the passing of time is indicated by a circular movement; there is no opposition between “past” and “future” but between “now” and “not now,” and the gesture for distant times is the same for past and future. The comparative study of prophetic texts, where the author takes the cyclical model as a conceptual framework in which events reoccur with similar form and efficiency, leads to questioning the validity and consequences of the extension of said model to conceptions of events in other areas of experience.

The article by William F. Hanks that concludes the volume develops a global reflection on the plurality of the measures and the textures of time, a subject approached from diverse points of view in the previous articles. Relying on a broad ethnography of the Yucatec Maya, the author unravels the multiple observable, observed, and reconstructed cycles that organize different areas of Maya life. He shows how the linearity of the lived, the perceived or the projected is constructed, based on experiences translated by words and acts in the daily and in the ritual sphere. Combining approaches from specific analyses, including deixis, agency, performance, thick boundaries, transposition, or ordering,

the author manages to evoke a complex cognitive universe that inscribes, in language and in practice, the multiplicity of temporal frames of reference and their relationships, as Maya thought shapes them. Then, the fundamental question of the entanglement of temporal frames of reference emerges.

The articles briefly presented above were divided into sections with the sole intention of highlighting some commonalities between various disciplines, and covering different time periods. The reader, however, will easily perceive other commonalities and resonances that link the texts together beyond those sections. The contributions in this volume enable us to delineate some questions and future directions.

Plurality of time frames

The analysis of the temporal dimensions of experience and discourses, in different spheres of social practices, irremediably reveals a plurality of temporal frames, which coexist and intertwine in different ways. Ritual action is distinguished by being a sphere where this entangled multiplicity occurs in a particularly acute manner. It is also a field where interdisciplinary work can be very fruitful, since the parallel study of rites in past and contemporary societies invites us to combine diverse operative concepts, which can be complemented or mutually enriched. Each discipline can highlight the plurality of time frames involved in it, by examining material, conceptual, and linguistic activities, and thus elucidate both the worlds created by the ritual and the mechanisms of its transformative efficacy. The understanding of these aspects requires the study of the temporal relationships existing outside the ritual. In fact, the pragmatics of the dialogues in the variety of real-life interactions show very diverse temporal configurations, motivated by givens that remain to be explained. For example, an inscription on a stela, an *image* or a written document can be used differently and take on new meanings according to the time frame in which it is inscribed contextually, and concurrently contribute to define it. Mental maps are distinguished according to the frame of reference where certain spatio-temporal segments are anchored, for example in a mythical or historical universe, or one of remembrance or that of dream experiences... That is, temporal anchorages can be more or less univocal, and in certain cases lead to an entanglement constitutive of the situation.

Towards the analysis of the interweaving of temporalities

The multiplicity of time frames and modes of insertion of the forms of what is said and what is done, in the field of ritual and the profane, raises the question of the interweaving of such frames. Whether it is actions, discourses or objects, each element is based on different temporalities and each temporality combines

components of varying dynamics, durations, and rhythms. The worlds of daily life, of history, of prophecy, of dreams, and of myths can be merged, overlap, enter into conflict or be coordinated. The actors and/or speakers do not conjugate the temporalities randomly but according to rules that must be elucidated and analyzed. Thus, the foundation or refoundation of a building, a space, a political or religious position, may involve cognitive “attractors” of cyclical time⁷—for example the action of “establishing”, while the ritual acts in parallel within the present time, which has other properties and dynamics. The same daily life is formed by the imbrication of rhythmicalities and multiple temporal frames of reference, synchronized differently (times of the development and of the individual animic states; of the vegetal and animal world; of activities relating to silviculture, craftwork, tourism, school, and to the administration; of feasts, of the community rituals and of the intimate rituals; of personal events, of the collective struggles, etc.). The modalities according to which these times are adjusted, influenced, and causally related are linked to cultural principles of world ordering and to the subjective experience of the passing of time.

Constructions of change and their temporal borders

Research that deals with time necessarily also deals with change. Returning to the thread of ritual, its actions (conceived in a broad sense, from fabrication to invention, from creation to destruction, from the restoration of a bodily state to the transition to a new state...), all involve processes of transformation. The duration of the change and, above all, its “aspect,” in the linguistic sense of the word, i.e. its consistency (dense, repetitive, long, abrupt, processual or factual...), must be described in a thorough manner. Indeed, in this intermediate period that separates two different states—for example, from sick to healthy, from an archeologically defined period to another one—, the elements that participate in the transformation are united in a progressive and orderly manner, which configures internal phases proper to each type of process of change. Some of the elements remain stable during the process, others, on the contrary, are more labile and disappear rapidly. This dynamic determines the boundaries between states or categories, in the knowledge that the etic or emic boundaries do not always correspond. Transformations can modify the temporal frames of references, or generate new ones. For example, the “ends” of the cycle can be conceived as true ends or rather as the root of the future and of reconstruction. It is probable that what we interpret as “erroneous,” “altered” or “reordered” dates—in particular

7. Attractors are abstract models whereby cognitive representations converge despite interpersonal variations. Factors of attraction can be diverse: psychological, cultural or environmental. See Claidière Nicolas and Dan Sperber, 2007, “The role of attraction in cultural evolution”, *Journal of Cognition and Culture*, 7, p. 89-111.

when referring to epigraphic dates or colonial documents—do not originate from the same logic or the same intention, and that we must reconsider them by paying more attention to the texture and density of the times involved and their boundaries. Some dates are clearly inscribed in cycles, others are closer to an event, and some conjugate the two.

Repetition, routine, habit

The personal experience of time is probably the most difficult aspect to analyze, because it touches upon daily life and the intimacy of a unique individual, a person from whom unconsciousness and consciousness flow. This opens up the issue of habit and routines, against the unexpected and individual reactions, and the eventual propensity of these to arouse changes. How can we talk about time without scrutinizing that of the repetition of movements, actions, words, events, and rituals? Between deference and redundancy devoid of meaning, the precise forms, measures, and functions of repetition must be considered according to the objects and their frameworks. These include, for example, the repeated gestures of the manufacture of artifacts or the preparation of food, repeated ceremonial paths, structures and elements that are resumed in the discursive or iconographic parallelisms, and the replication of historical events... Repetition rhythms the passage of time while, depending on the circumstances, it densifies it, inscribes the actions in linear or cyclical orders of different scales, and serves as the basis for implicit knowledge and expectations. Repetition also creates the background for the prominent elements and events at the biographical, cultural, social, and historical level.

Enriched by interdisciplinary and international exchanges—which entail efforts of mutual comprehension between disciplines, collective works, and contributions of different heuristic, methodological, and theoretical traditions—the research axes outlined in the following articles should open wide fields of thought for Mesoamerican anthropology, as well as for the understanding of time.

October 30th, 2017

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