

## **Vowel Disharmony, Mayan Hieroglyphic Writing, and Indigenous Education: cultural catalysts and responsible ethnographic research**

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During the mid-16<sup>th</sup> century, Maya scribes and Spanish priests struggled to teach and learn from one another both in culture and language. Spanish friars, for instance, claimed to have learned to read and write in the Maya hieroglyphic script (Ciudad Real 1873)—and one even to re-interpret indigenous prophecies according to Christian interests (Jones 1998). Indigenous elites, meanwhile, were being recruited for European educations within the new churches of the Yucatan Peninsula. Mastering Latin, they soon became teachers of Spanish children.

This melange of languages was not short-lived. Historian Nancy Farriss recounts the local legend that in Mérida, Yucatan, a creole physician of social prominence, learned Spanish as his *third* language. “Having spoken only Maya as a boy, he was sent to France for his education and only when he returned to Yucatan after receiving his medical degree did he learn Spanish” (1984:12).

Unfortunately extremely few of the colonial period exchanges concerning language actually made it into the official histories or chronicles of the time. Those that did, however, often give more information implicitly than can be had from explicit explanation. In his *Relaciones de las cosas de Yucatan*, for example, Diego de Landa attempted to describe the hieroglyphic writing system that he struggled to learn from Gaspar Xiu and Nachi Kokom—two local consultants of substantial social prominence. Although Landa’s assumptions about writing systems prevented his getting very far in comprehending it, they provide us with interesting clues into the functioning of the writing system. (See Figure 1)

The point to this introduction, though, is that during the 16<sup>th</sup> century, before colonialism had matured in Yucatan, Maya and Spanish thinkers were grappling with questions of language together—albeit each for their own purposes and with differing levels of success. And my intent in pointing this out is not to romanticize the past, but (at least temporarily) to de-center our historical understandings of the Maya hieroglyphic script away from a comfortable perspective that sees it as something cataclysmically lost, and now needing external recovery. Such a move then anticipates my goal for this paper, which is to problematize the relationship between cultural “preservation” and academic research with an eye toward exploring new possibilities. To do so, this paper first sketches some of the current pressing epigraphic concerns within the decipherment project in order to point out the role of indigenous Mayan speakers in it. It then goes on to discuss an alternative model that simultaneously engages academic outreach and potential epigraphic research. In doing so, I take up the issue of accountability in academic scholarship, and offer one example, which may hold the seeds for fruitful alternative forms of investigation into indigenous languages *with* indigenous communities.

*Linguistics and Maya Hieroglyphic Writing*

The alphabet Landa attempted to construct contained several clues as to how the hieroglyphic script works. (See Figure 1) The most curious of these simultaneously demonstrates the frustration Landa must have felt in being unable to get mentally beyond his own biases about how writing works. The text of *Relaciones* gives a description of the writing of the word for noose in Yucatec Mayan, *le*, through which Landa hopes to explain the Maya "alphabet" (Schele and Mathews 1991). Knowing now some of what Gaspar Xiu and Nachi Kokom did then, we may read the hieroglyphic text transcribed by Landa phonetically: "ele e lé" (e-le e le). In Spanish, this is easily recognizable as a spelling bee response: *ele* is the Spanish pronunciation of the letter 'l' and *e* is 'e'. So the scribe here is writing exactly what Landa requested: 'l-e, le', only the scribe has written it out in its entirety phonetically.



*Le* means a noose and to hunt with it; in order to write it with their characters, we having made them understand that there are two letters, they wrote it with three, putting as an aspiration of the *l*, the vowel, *e*, which it has before it; and in this way they are not mistaken, even though they should be employed<sup>892</sup> in their skilful device, if they

wish to. For example   
e l e lé

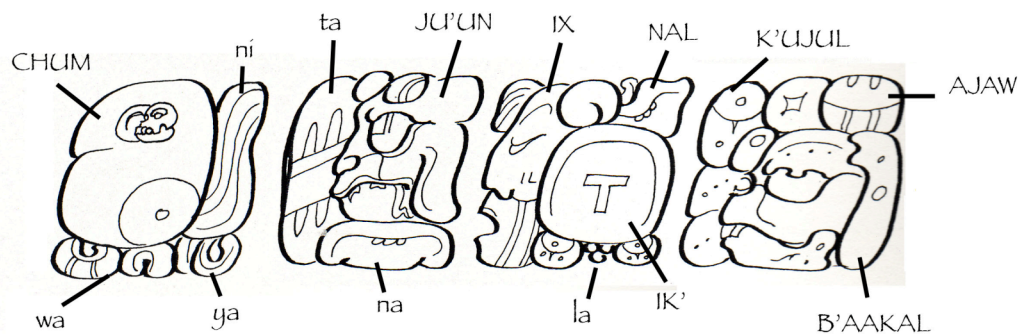
**Figure 1:** Landa's "alphabet" of the hieroglyphic writing system along with his interpretation of how it functioned (1941).

One of the important clues here is the recognition that individual Maya

hieroglyphs (glyphs) represent either vowels or consonant-vowel pairs, but never consonants alone. This clue is suggested within Landa's "alphabet" since a number of the "letters" in his chart comprise consonant-vowel (CV) pairs (e.g. *ca*, *cu*, and *ku*).

In the 1950s, Yuri Knorosov used Landa's writings (in part) to propose a reading of a pre-Contact manuscript (dated to *ca.* 13<sup>th</sup> century A.D.) known as the Dresden Codex. Ignoring the very interesting historical process that got him there in the sake of brevity, Knorosov's work provided the ensuing decipherment with three working principles: *i*) script elements were V or CV pairs; *ii*) terminal script vowels could be unvocalized, e.g.  $k'u + k'u \rightarrow k'uk'(u) = k'uk'$ ;  $u + tza + ka + wa \rightarrow u\ tzakaw(a) = u\ tzakaw$ ; *iii*) vowel synharmony. In the latter principle, Knorosov postulated that unvocalized vowels would always maintain agreement with the penultimate vowel, e.g. *tzu-l(u)*, *ku-ch(u)*, etc.

Armed with these principles and a number of Mayan language dictionaries, epigraphers of the 1970s, 80s, and early 90s took a puzzle-solving approach to furthering the decipherment. Having securely identified one or two glyphic elements within a glyph block, (see Figure 2) the possible number of words that could be represented were limited. Logically, then, it became a matter of matching up possibilities from the dictionaries with the rest of the sentence to see if some sense could be made. Eventually, a grammatical layer (i.e. that Mayan languages follow a VOS structure) was added, which provided both further constraints and potential insights. While a substantial number of interesting and provocative readings resulted from this approach, most did not



**Figure 2:** CHUM, wa, ni, and ya are glyphic elements within the glyph block. The entire passage records a woman's accession to the throne of Palenque.

prove very stable.<sup>i</sup>

Perhaps more importantly for the discussion at hand, stable readings turned up various counter-examples to Knorosov's third principle. Epigraphers too often confronted situations of vowel *disharmony*: *ch'a-jo-ma*, *a-ku*, *chu-ka*, occurring not only with nouns, but also in the conjugation of verbs: *ju-li-ya*, *CHUM-wa-ni-ya*, etc.

One hypothesis with great currency these days is that harmony and disharmony actually provide yet another level of useful information. In spoken Mayan languages, there is a substantial amount of vowel complexity that is sufficiently represented across variants to suggest that it should have been extant during Classic times. Vowels may be glottalized, long, and short, and there is no evidence that these are accounted for by distinct glyphs; so a word attested as baak (‘bone’) in colonial records (long ‘a’) uses ‘ba’, but so do titles like bakab, attested as having short vowels.

The clever way through this proposed by Stephen Houston, John Robertson, and David Stuart, is that certain conventions within the hieroglyphic writing system amount to a “deferred/deflected spelling” (2000). Specifically, the agreement, or lack thereof, between final and penultimate vowels may alert the reader to vowel complexity.

	<i>Glyphic Transcription</i>	<i>Vowel Activity</i>	<i>Attested Mayan Word</i>
Synharmonic	Tzu-lu	Tzul(u)	Tzul
	K’u-k’u	K’uk’(u)	K’uk’
Disharmonic	Ba-ki	Ba:k	Baak
	Cha-ki	Cha:k	Chaak

As demonstrated in the table above, the hypothesis works nicely in some very provocative cases. It does not always accurately capture the data, though, and it is the “not always” that makes things interesting and that currently has the epigraphy community divided (Wald 2000).

Naturally, there is also more to this intellectual division than just evidence and rhetorical persuasiveness—politics and scholarly reputations are very much at stake in this problem (*cf.* Latour 1987). But it may also be that the problem itself is intractable. At the 2005 UT Meetings, for example, John Justeson made two important comments that are as yet unaccounted for. In the first, he noted that the vast majority of disharmonic examples in the script are restricted to ‘a’ and ‘u’ vowel combinations, e.g. –Ca-Cu, or –Cu-Ca; statistically, he suggested, we may not have enough variation to test *how* explicit any type of disharmony might be. Secondly, he brought up the issue of “underspelling.” It may be that spelling conventions were used only as flags, with the specifics determined either by memorized heuristics or by context.

A third important factor is that the dataset that we have available is really quite restricted in scope. The vast majority of the inscriptions are written in the third person. For verbal endings, this means that all of the interesting complexities that might shed light on this problem are simply not represented. (See Table)

<i>Intransitive verb present tense suffixes in Classic Mayan</i>	
-en	-on
-at	-e’ex
-∅	-o’ob

### *Indigeneity and Legitimate Academic Research*

In this paper, I have nothing technical to offer the decipherment process. However, it has occurred to me that in this situation, we confront a real opportunity to address an Indigenous Studies/Chican@ Studies critique of Anthropology and “colonial” scholarship in general. Broadly considered, I am here addressing the question of how we are to approach the interpretation of a foreign culture when that interpretation is both under-constrained and characterized by a foreignness built on political and economic inequality. The default in academia today is to appeal in some way, shape, or form to “objectivity,” i.e. that there is a right answer out there awaiting our (or someone’s) “discovery” of it. Moreover any contributions made under such a rubric are accepted as constituting steps in that direction, whether or not contributing scholars actually believe objectivity to be realizable.

But as Dipesh Chakrabarty has elucidated so well, objectivity itself has served too often as a mask for the interests of the party with the upper hand (1992). That is, the construction of an objective perspective has allowed for the external characterizations of cultures that in turn have contributed in real terms to the ways in which those characterized cultures have been interacted with. While Chakrabarty focuses on the case of colonial and postcolonial India, Linda Tuhiwai Smith has presented a formidable corroboration from a Maori perspective (1999). She takes it further, though, in examining how the various implications turn back on scholars who are themselves indigenous and interested in studying their own cultures (cf. Emma Perez 1999). The upshot is not intended as a condemnation of certain types of scholarship, but as a recognition that objectivity may function as an aesthetic guiding the work of one community. As an aesthetic, though, it is not anchored to any external reality that is other than socially constructed to be superior to any other aesthetic.

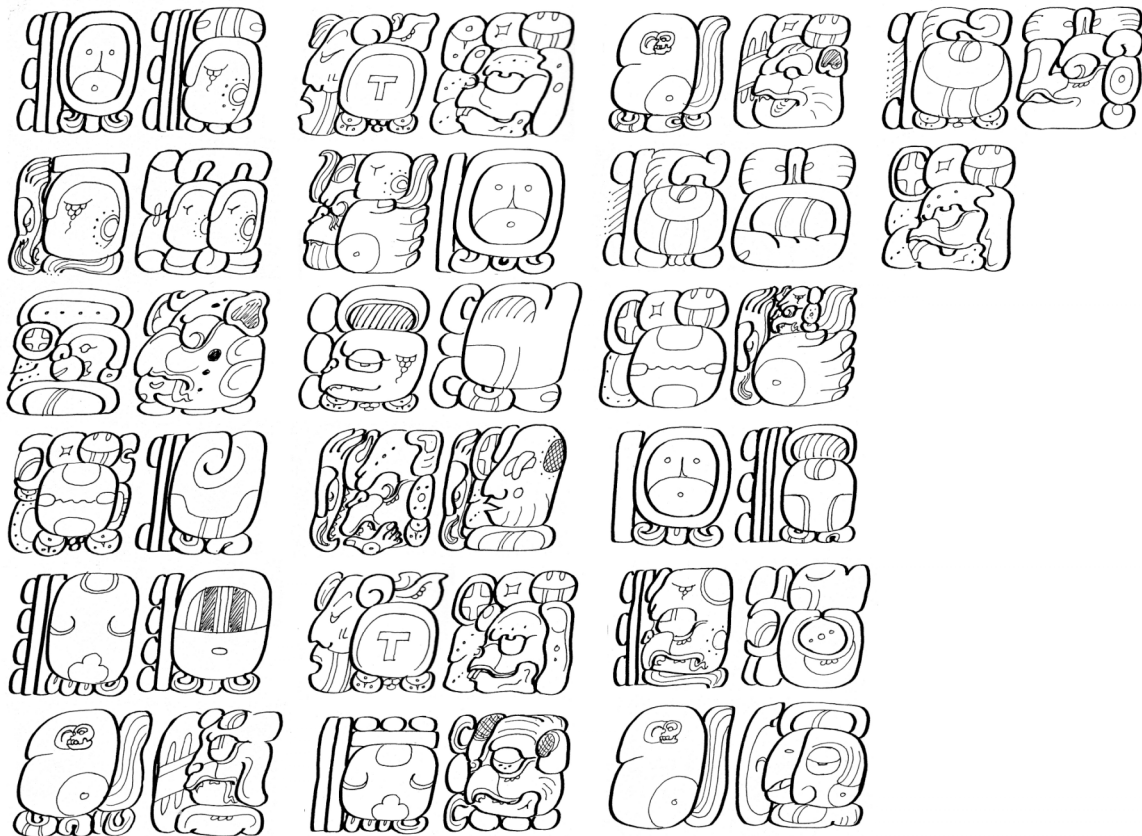
It is my goal to demonstrate that this question has particular saliency in the decipherment of Maya hieroglyphic writing.

As noted above, from the late 1970s through the early 1990s, epigraphers took Knorosov’s insights and transformed them into what is now considered the flourishing of the Maya hieroglyphic decipherment. In turn, the popular culture’s fascination with all things *ancient* Maya, spawned a number of Maya hieroglyphic workshops operating across the country and offered at different levels of expertise. Linda Schele was a champion of hieroglyphic workshops and initiated the now prestigious Texas Meetings—the venue from which some twenty years later now, Justeson’s comments above were taken. Moreover, Schele and Nikolai Grube often traveled throughout Maya lands giving smaller workshops to Mayan speakers.

In these “traditional” workshops, the focus has been and still is quite naturally on the historic hieroglyphic script itself and the ability to read it. Happily, progress can be made in a relatively short time-span since the texts are extremely formulaic, repetitive in content, and singular in voice. (See Figure 3)

In many ways, the ensuing relationship between cultural revival (for that is what the decipherment process has contributed to) and academic research is that the research—the “legitimate” work on the decipherment—is going on in the Ivory Tower across the

border(s), and the nicely packaged results come back to Maya communities—generally without the community’s ability to contest or engage them. This is not to say that unresolved issues are ignored in these workshops, only that native Mayan language speakers are not afforded the opportunity to make significant contributions toward resolution (again, *cf.* Latour 1987). To be “heard”, they must find a way to attend the research workshops occurring in Europe or the States and voice their opinions there. Otherwise, they are left to work with the latest as it arrives from across the border.



**Figure 3:** Passage from the East Tablet in the Temple of Inscriptions at Palenque. Note the redundancy in glyphs as three accessions are recorded.

Perhaps as important, when differences in *interpretation* arise, indigenous communities often go the route of ascribing that difference to their own cultural distance from their ancestors, rather than challenging the interpretation itself.

Let me admit that this may sound a bit cynical or unappreciative on my part... after all, the aforementioned scholars and many likely them, *are* engaging in outreach—they are working to give something back to the community—but the entire scenario resonates far too much with the colonial history between these two cultures to get me

beyond appearances. Of course I may be accused of being overly-sensitive to such appearances as my own training has been in Anthropology, History, and Ethnic Studies; but as much of my position on the matter has come from working with contemporary indigenous communities in the U.S., Mexico, and Central America over the last several years.

### *Exploring Alternative Forms*

The work that inspired the basis of this paper finds its origins in a workshop I had been asked to give on Maya hieroglyphic mathematics for teachers at a developing autonomous primary and secondary school in Chiapas. (See Figure 4) What garnered the most interest in that multi-day math and calendric workshop, was an interest in the glyphs—and not so much in reading the ancient texts; more in *adapting* them to write contemporary Tzotzil Maya. The idea originated in a very simple exercise I had developed for outreach programs to Latin@ youth in the U.S. In these, students use the Internet to investigate the original meanings of their first names. Students then translate



**Figure 4:** Classroom in an autonomous primary and secondary school in Chiapas.

these meanings into Spanish, which then can be translated (with help) into Yucatec Mayan. Once a Yucatec word or phrase is adopted, it can readily be constructed in hieroglyphic text.<sup>ii</sup> During the workshop in Chiapas, we extended this activity to incorporate Tzotzil sentences and phrases. At one point, we began discussing astronomy, upon which we found that the Yucatec word for Venus (Chak Ek' or 'Red/Great Star') recorded in the Dresden Codex meant something much less pleasant in Tzotzil.

Almost immediately in this new application of Maya hieroglyphic writing, we confronted many of the same issues that are currently of critical concern to the academic epigraphic community. Specifically, the recording of spoken, casual language began to present some really interesting complications, especially with regard to the conjugation of verbs in other than the third person singular. Unfortunately, the week-long workshop ended before we could go any further with these complications. Perhaps more unfortunate has been that other factors have prevented this workshop from continuing.

As the work in Chiapas waned, though, a new opportunity arose in Yucatan with a Maya elder whom I met while I was just beginning my doctoral research some 10 years ago. At that point, I did not expect my time spent with him to contribute directly to the dissertation (which was on astronomy recorded in hieroglyphic texts); rather, what I learned from him (and what I continue learning from him) is what it means to be a Maya intellectual today.



**Figure 5:** Contemporary ceramic vessel produced in imitation of the Classic style, created for the tourist industry.

Pedro Pablo Chuc Pech was educated as a young man by the Catholic Church on his road to becoming a priest. Very late in the process, he had a change of heart and turned to secular work. Chuc took this otherwise powerful education to work in the schools, became a teacher, and is now a recognized expert in bilingual (Yucatec/Spanish) education. We have kept in touch since our first meeting, but very informally, and mostly just when I had been able to steer a different research trip through a detour in northeastern Yucatan.

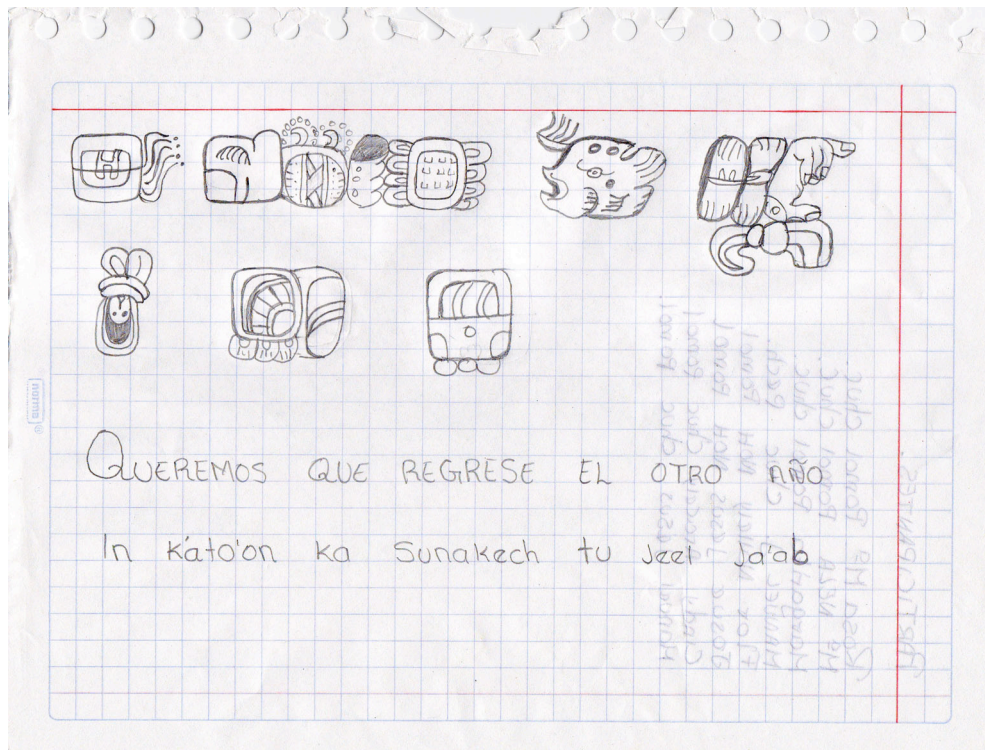
Two years ago, though, I mentioned the workshop in Chiapas to Chuc, who took to it immediately. With some luck and a bit of funding from UC MEXUS, we were able to set up a hieroglyphic workshop in Yucatan specifically for the pueblo—not highly educated people from Mérida—but local folk who would be interested out of curiosity, but also because it might be useful in producing crafts for the tourist industry. Actually, the latter became an important factor in generating attendance at the first workshop in 2005. Currently, that is, *artesanía* is produced by indigenous people in Yucatan who do not have an education in the meanings of what they are painting and/or writing. Local labor is being utilized in the creation of mere simulacra, even if it is producing some provocative results. (See Figure 5) In any case, it was not hard for Chuc to convince members of his community that an ability to incorporate meaningful text into otherwise purely decorative pottery could provide a competitive edge in the local tourist industry (e-mail correspondence 2005.7.22).

Besides the mixed intentions of the participants, a second difference between the Chiapas case and that of the Yucatec workshop had to do with pedagogy. Namely, in the



Chiapas case, I was not overly concerned with questions of pedagogy since they had really been resolved for me by the community itself; there, the teachers basically instructed me as to what their interests were and what I might be able to provide. In Yucatan, though, I was explicitly confronted with the question of how to formulate a workshop for local Maya community members—one that took into account the various issues mentioned above including the complications in reading hieroglyphic texts.

So the approach that I/we came up with was to focus on the basic principles of the writing system, i.e. that it is logographic and phonetic, and that it is ideally suited to capture Mayan languages. Once we went through the calendar and some basic nouns in that first workshop, we moved right into the writing of simple sentences in contemporary Yucatec Mayan. This led right away to some of the central problems discussed above: disharmony and verb conjugations. And herein lay the difference with “traditional” workshops: we then collectively explored solutions, accepting some proposals and eventually rejecting others, with the goal of creating a writing system that “makes sense” to them.



**Figure 6:** Hieroglyphic text produced by a group of four students during the 2005 Popolá workshop.

In that first workshop, we worked for seven days at six hours a day. By the end of the workshop, most students were comfortable with the math and calendrics, but were struggling with the idea of hieroglyphic writing even though they were able to construct simple sentences and write messages between working groups. (See Figure 6)

Admittedly, there was little engagement with the research process in this endeavor; most of the effort was aimed at instilling the basic ideas behind the writing system.

During the second workshop, however, the character changed significantly. Out of 23 participants last year, 21 returned. Most of the first two days constituted a review of the material we covered the year before, with two notable differences: *i)* the sentences that they wrote for the previous year served as the critical teaching tool; and *ii)* the review itself opened up a venue for the exploration of theory and method. This time, participants openly challenged the proposed heuristics of synharmony and disharmony, asking why other vowel complexities were not explicitly recorded, or if indeed they may have been (field notes 2006.7.27). Participants also queried how much would really be necessary for the writing to be understood. This came up explicitly in the discussion of a sentence written by one working group. Here, participants worked through issues of vowel complexity as well as issues of spoken Yucatec with contractions versus a proper grammatical spoken language, and what *should be* represented in the glyphs. The group decided on accepting a few conventions, but leaving the matter open to further revision.

In my opinion, the success here has been that local indigenous participants with various levels of education (e.g. 10-year-old elementary school students, working mothers, university educated agronomists, elementary school teachers) became active in the research process, simultaneously feeling directly connected to the project at hand. Moreover, I suggest that this was enabled by the approach of resisting the presentation of the material in a top-down fashion; instead, we are presenting what is known at this point—what the problems are—and then as a community, we are inventing ways to handle them. On this level, the more it is worked in this way, the greater the possibility that insight might be produced toward how the Maya were handling the script originally... as a living language.

Of course, the process was not without its complications. Much more so in the first workshop, but with some frequency in the second, those participants who had met anthropologists or epigraphers in the past would state bluntly that “Nikolai [Grube] used to just do this; or Linda [Schele] would just tell us that.” The implication was that I did not carry the authority of Nikolai or Linda—which in many ways is correct—not because of my credentials, but in my view because of the approach I had been taking. What I mean is that when providing people with agency in an arena they are not accustomed to, they are often reticent to accept it. Here, my attempt to involve participants as agents often leads to questions of my legitimacy, as though my unwillingness to provide my answers as definitive suggested that my competence was suspect.

I draw an example from my field notes during the first workshop:  
“10 Imix 9 Ch’en, 2005.8.12 Finished the *taller* today. PPChP woke me up at ~4:30 this morning to ask if I wanted to “hacer una meditacion.” What the heck this meant, I hadn’t the faintest idea, but how could I refuse? I walked out and he said he would be “arriba.” I was a bit uncertain what even that meant (*¿en el monte?*), but I had to use the bathroom first anyway. Eventually, he peeked over from upstairs and I followed him up to his new roof. He and Bolay were looking at the stars, and PPChP asked if I knew anything about them: “Linda si conocia todo; nos decia que era eso y eso. No mas senalaba una cosa y lo

nombraba.” I think he’s still testing me. He’s not sure where I fit into the larger scheme of things...”

I remember wondering about the different ways I might complicate Linda’s decisiveness, and discuss how many of her identifications have since been shown to be incorrect. I thought about it, but held my tongue and my position and waited for another meteor to pass overhead.

I realize now that I am more than willing to trade my reputation for even one of the results of the latest workshop. During the last two days of the 2006 workshop, I suggested that we look at a few passages of a colonial Yucatec text written in the Latin alphabet, and attempt to translate them into their hieroglyphic representations. The passages I selected came from Ralph Roys’s translation of the Book of Chilam Balam of Chumayel—a document with origins in the sixteenth century, but last copied and appended by a Maya scribe in the late nineteenth century. I chose the Roys translation because he provided a transcription of the original text along with his translation and heavy footnote documentation of his translation choices.

With the passage on “the Creation of the World”, participants struggled with archaic vocabulary and unfamiliar orthography, but worked their way into a consensus interpretation of the text. In doing so, they made several objections to Roys’s choices and interpretations. By the end of the second day of working on these texts, they readily admitted that they were not one hundred percent confident in their interpretations, but neither were they entirely convinced of Roys’s readings either. In my view, they had entered into a research relationship with the material *and* they were able to perceive themselves differently with respect to circum-Mediterranean-derivative (cMd) scholarship and institutions.

Indeed, it would have been much less messy to go the traditional way, but it is my hope that through an Indigenous Studies aesthetic, this can produce a new kind of “outreach”, a new kind of cultural preservation. Of course there’s no way to say what may come of it, but I’m hopeful that the messiness of it holds the promise of an alternative trajectory to the one set by Landa and Xiu almost 500 years ago.

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## Notes

<sup>i</sup> Especially astronomical readings, see, e.g. Schele and Freidel (1990); Dutting(1985); *cf.* Aldana (2005).

<sup>ii</sup> The alternative (writing one’s Indo-European-derivative name with glyphs) has proven too frequently unsuccessful, among various other reasons, since there is no ‘r’ sound in Classic Mayan.

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