

PROJECT SUMMARY

Overview:

This project focuses on the expression of temporality and modality in Tlacoahuaya Zapotec (ISO code: zab), an endangered and underdocumented Central Zapotec language spoken primarily in San Jerónimo Tlacoahuaya, Oaxaca, Mexico. The primary outcomes of the project will be (1) a publicly archived, general-use language documentation corpus and (2) the co-PI's dissertation in linguistics at the University of Texas at Austin. Following established methods for both language documentation and semantic fieldwork, the co-PI will record naturalistic speech in Tlacoahuaya Zapotec, including conversation, narratives, and procedural discourse. The recordings will be transcribed, translated, and analyzed in consultation with native speakers. The resulting corpus, supplemented by elicited speech and structured experiments to fill out paradigms and test hypothesized constructions, will support the study of tense-aspect-mood marking in discourse.

Intellectual Merit:

While the Zapotec language family has been the object of study for some time, the diversity of the family is not adequately captured by the existing documentation. Large-scale, open-access corpora exist for only a handful of Zapotec languages, and there is no substantial open-access, audio-recorded text corpus for any Central Zapotec language. A primary aim of this project is to expand the publicly-available data on Tlacolula Valley Zapotec. This project will also contribute to future research on language diversity in the Tlacolula Valley, as well as on the development of linguistic diversity in this region. Research on Tlacoahuaya Zapotec is particularly well suited for diachronic research, as there are extant 16th-through 18th-century Zapotec documents from the Tlacolula Valley, and Tlacoahuaya was a site of creation for Fray Juan de Cordova's colonial-era grammar and dictionary. Finally, this project involves a holistic study of temporality and modality in Tlacoahuaya Zapotec, an area that is understudied in the Zapotec language family.

Broader Impacts:

The youngest fluent speaker of Tlacoahuaya Zapotec is in his early 40s, and Spanish is the dominant language in town administration and education. This project will be conducted in collaboration with language activists in San Jerónimo Tlacoahuaya in order to support their pedagogical and language revalorization goals. Four specific impacts of this project are: (1) training Zapotec research assistants in language documentation and description methods; (2) free, public workshops led by the co-PI in the community; (3) the expansion of language infrastructure through the public archiving of documentation materials at The Archive of the Indigenous Languages of Latin America (Benson Library, UT Austin); and (4) training of a UT Austin linguistics undergraduate as a research assistant.

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Project Description

1 Introduction

This project has two closely intertwined goals. **(1)** Co-PI Plumb will create an open-access, general-use documentary corpus of Tlacoahuaya Zapotec, an Otomanguan language of Oaxaca, Mexico. This multi-modal (audio, video, text) corpus will include a wide range of natural discourse genres with a particular focus on conversation, traditional agricultural and culinary practices, and town history — although topics will ultimately be guided by the interests of community collaborators. The documentation corpus will be archived at the Archive of the Indigenous Languages of Latin America (AILLA). **(2)** Plumb will write a dissertation in linguistics focusing on the description of the temporal-modal system of Tlacoahuaya Zapotec. Using the documentation corpus as a data source, the dissertation will cover the semantic and syntactic specification of the temporal-modal grammatical categories and the management of temporal-modal information in discourse.

The co-PI, May Helena Plumb, is a PhD student in the Linguistics Department at UT Austin, currently completing her third year of coursework. She began research on Zapotec languages working with Colonial Valley Zapotec documents in 2013 and has a continuing relationship with the Ticha Project, a digital text explorer for Colonial Zapotec (Lillehaugen et al. 2016b). Plumb began fieldwork on Tlacolula Valley Zapotec varieties in 2014. She has been involved in several community-oriented documentation and revalorization projects including the creation of Talking Dictionaries for three Tlacolula Valley Zapotec varieties (Lillehaugen et al. 2019a-c) and participation in the Voces del Valle initiative to encourage Zapotec writing on Twitter (see Lillehaugen 2016). In her past two years of research she has focused on Tlacoahuaya Zapotec (Plumb 2019a; Plumb 2020), producing a preliminary corpus of recordings already archived at AILLA (Plumb 2019c). Plumb has a research commitment to the Tlacolula Valley region, and her long-term career goals include **(1)** a robust description of Tlacoahuaya Zapotec grammar, **(2)** the creation of accessible materials for the Tlacoahuaya community, and **(3)** the diachronic description of linguistic diversity in the Tlacolula Valley, placing modern variation in conversation with evidence from the Colonial Valley Zapotec corpus.

Anthony C. Woodbury is the PI of this project and the co-PI's dissertation advisor. He has been involved in the documentation of Zapotecan languages for 17 years, in particular in his role leading the Chatino Language Documentation Project (Woodbury et al. 2011-; Woodbury et al. 2013; Cruz and Woodbury 2014a,b). Woodbury has furthermore been influential in conversations on archiving and documentation methods, in particular with regards to the interconnected nature of ethnography, language documentation, and language description (see e.g. Woodbury 2011; Woodbury 2014; Epps et al. 2017).

This project will create the first robust, open-access language documentation corpus of a Tlacolula Valley Zapotec language; the matter is urgent due to rapid language shift in Tlacoahuaya and the surrounding towns. Furthermore, the dissertation focuses on temporal-modal semantics, an area of research neglected in most descriptions of Zapotec languages. Co-PI Plumb, drawing on previous experience in the region as well as support from semanticists and Mesoamericanist linguists at UT Austin, is well suited to the project as a whole.

2 Background on Tlacoahuaya Zapotec and related languages

2.1 *Linguistic diversity and language context*

The Zapotec language family is a highly internally-diverse subgroup of the Otomanguan stock. Zapotec has an estimated time depth roughly equivalent to the Romance language family (Broadwell 2015: 152). Tlacoahuaya Zapotec is a variety of Tlacolula Valley Zapotec (see Figure 1), a continuum of dialects originating in the valley between Oaxaca de Juárez and Tlacolula de Matamoros. The collaborative nature

of Valley Zapotec community structure, including ritualized gift exchanges (guelaguetza) and mandated public service (cargos) (see Flores-Marcial 2015), contributes to a strong sense of town identity, strengthening the geopolitical nature of the dialect boundaries. The linguistic relationships between Tlacolula Valley Zapotec varieties have not been well described, partly due to a lack of thorough documentation and description of the many individual languages. The creation of a substantial corpus of Tlacoahuaya Zapotec will allow for systematic comparisons with the two better-documented varieties, San Lucas Quiavini Zapotec and Teotitlán del Valle Zapotec (see §2.2).

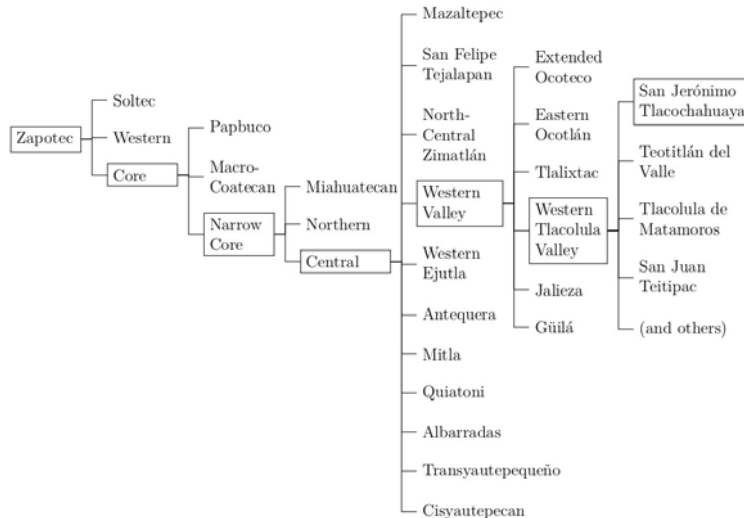


Figure 1: Classification of the Zapotec languages based on Smith-Stark 2007 and Campbell 2017

Like other indigenous languages of the Americas, Zapotec languages are severely marginalized, and racism towards indigenous-presenting people is ubiquitous. Due in particular to linguistic discrimination faced in schools, as well as the socioeconomic pressure from Spanish and English, fewer parents are teaching Zapotec languages to their children (see e.g. Chávez Santiago et al. 2015). Language vitality varies significantly from town to town; in San Bartolomé Quialana, for example, children continue to learn Zapotec (Brook Lillehaugen, p.c. June 2019), while in Tlacolula de Matamoros there are no speakers under the age of 60 (Lillehaugen 2006). In San Jerónimo Tlacoahuaya, the youngest fluent Zapotec speaker is in his early 40s; to our knowledge, all Tlacoahuaya Zapotec speakers also speak Spanish. Tlacoahuaya Zapotec is mainly restricted to informal, domestic contexts such as the town market. Spanish is the dominant language in business, education, and government; in 2019, none of the cabildo (town council) members spoke Zapotec.

2.2 Previous descriptions of Central Zapotec languages

There is a long history of linguistic research on Zapotec languages, in particular studies of phonology (e.g. Chávez Peón 2010; Uchihara & Gutiérrez 2019), verbal morphology (e.g. Smith-Stark 2002; Pérez Báez & Kaufman 2016), and syntax (e.g. Broadwell 2001; Foreman 2006). However, as I discuss below, linguistic description is scattered unevenly across this very linguistically diverse group, and this research has proceeded mostly without open-access corpora.

Within Tlacolula Valley Zapotec, there is substantial descriptive work on only two varieties: San Lucas Quiavini Zapotec and Teotitlán del Valle Zapotec. Tlacoahuaya Zapotec speakers report having

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difficulty understanding the language from Teotitlán del Valle (Moisés García Guzmán, p.c. June 2018; see also Rendón 1970), although the towns' centers are only about 7 kilometers apart (as the crow flies). San Lucas Quiaviní Zapotec is more similar to Tlacoahuaya Zapotec, but still judged as distinct by speakers. Superficially, the difference between these languages can be seen in their cognate forms of the word for 'one', as recorded in the Talking Dictionary project: [tubj↓] *tuby*, [teᵛbʷ] *teiby*, and [tui↓] *tui* in Tlacoahuaya, Quiaviní, and Teotitlán respectively.¹

The work on Quiaviní Zapotec is particularly rich, including Munro & Lopez's dictionary (1999), an online Talking Dictionary (Lillehaugen et al. 2019a), a pedagogical textbook by Munro et al. (2007), dissertations by Chávez Peón (2010) and Lee (2006), Lillehaugen's (2006) dissertation on the closely related variety of Tlacolula de Matamoros Zapotec, and many additional articles (e.g. Munro 2015; Anderson 2019). Work on Teotitlán del Valle Zapotec includes a master's thesis (2014) and additional work by Gutiérrez (e.g. Uchihara & Gutiérrez 2019; Gutiérrez et al. 2019), a Talking Dictionary (Lillehaugen et al. 2019b), a Webonary (Carleton & Martínez González 2015), and sporadic additional resources (e.g. Beers 2010). Work on other Central Zapotec languages includes significant research on San Pablo Güilá Zapotec (e.g. Lopez Cruz 1997; Arellanes Arellanes 2015), Isthmus Zapotec (e.g. Pérez Báez & Kaufman 2016; Bueno Holle 2019), and Mitla Zapotec (e.g. Smith 2019; Stubblefield & Stubblefield 2019).

Additionally, there exists a substantial corpus of 16th- through 18th-century documents written in a Central Zapotec language in the Valleys of Oaxaca. Many of these documents are available on the Ticha Project (Lillehaugen et al. 2016b), and the language in these documents (Colonial Valley Zapotec) has been the object of recent study (e.g. Broadwell 2015; Anderson & Lillehaugen 2016; Plumb 2019b). Colonial-era documentation of this language includes Fray Juan de Cordova's grammar and dictionary (1578a,b). While the exact genealogical placement of Colonial Valley Zapotec within Central Zapotec is under debate (see Foreman & Lillehaugen 2017: §2.1), Cordova lived and worked in Tlacoahuaya for much of his life, and the language clearly has a connection to Tlacolula Valley Zapotec.

There is, however, very little modern documentation or description of Tlacoahuaya Zapotec. Rendón published a phonological sketch in 1970, but Plumb's recent graduate research is the only formal linguistic work on the language in the past 50 years. Other materials include a set of pedagogical YouTube videos by Moisés García Guzmán (BnZunni 2014) and the documentary *Dizhsa Nabani* (García Guzmán et al. 2018) which includes significant lengths of Tlacoahuaya Zapotec speech as well as in-depth discussions about the cultural importance of language in the town. Plumb has recently collaborated on a Talking Dictionary for Tlacoahuaya Zapotec (Lillehaugen et al. 2019c).

The Ticha Project's collection of Colonial Valley Zapotec manuscripts contains four monolingual texts from Tlacoahuaya. Plumb is involved in research on Colonial Valley Zapotec documents (Plumb 2019b; Broadwell et al. In Prep), as well as in the re-elicitation of colonial manuscripts from Tlacoahuaya in order to study the diachronic development of the language (Plumb 2019a).

2.3 *Lack of open-access documentation corpora*

We have identified only five publicly archived documentation corpora for Zapotec languages. (1) Beam de Azcona's (n.d.) AILLA collection includes 63 open-access resources including texts and elicitation. Most of these focus on Macro-Coatecan and Miahuatecan languages, but there are also materials on Isthmus Zapotec (Central) and Sierra Juárez Zapotec (Northern). (2) Beam de Azcona & Cruz Santiago's (2017) collection at the Endangered Languages Archive includes 52 resources on San

1 <https://talkingdictionary.swarthmore.edu/tlacoahuaya/compare/?fields=compare&q=one&compare%5B%5D=0&compare%5B%5D=2>

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Bartolomé Loxicha Zapotec (Miahuatecan). This collection contains both audio and video data. Most of the materials are naturalistic texts, and most are transcribed. **(3)** Donnelly's (n.d.) collection in AILLA includes 26 open-access resources on Choapan Zapotec (Northern). The majority of these resources are phonological and syntactic elicitation, some are texts; a few of these resources are transcribed. **(4)** Kaufman's (n.d.) collection in AILLA, which gathers work from the Project for the Documentation of the Languages of MesoAmerica (PDLMA), contains 13 video recordings, over 1700 audio recordings, and over 900 PDF files on Zapotec languages, many (although not all) of which are open access. Languages are represented from the Western (Lachixío); Northern (Choapan; Atepec; Zoogocho), Central (Isthmus, Chichicapan), Macro-Coatecan (Coatec), Miahuatecan (Miahuatlán/Cuixtla, San Baltazar Loxicha, Amatlán), and Papabuco (Zaniza) subgroups. **(5)** Finally, Sicoli & Kaufman's (n.d.) collection of Zapotec and Chatino language surveys includes interviews and elicitation on 87 Zapotec varieties, 29 of which are from the Central Zapotec branch. These surveys are transcribed in ELAN, and are all publicly available on AILLA.

Among the open-access documentation corpora, the only materials on Tlacolula Valley Zapotec are in Sicoli & Kaufman (n.d.), which contains surveys from five Tlacolula Valley towns: Santo Domingo Tomaltepec, Magdalena Teitipac, San Lucas Quiavini, Santa Ana del Valle, and Teotitlán del Valle. These surveys are transcribed in ELAN, but do not include naturalistic speech.

Unfortunately, none of the documentary corpora discussed include significant interlinear glossing, and only a small subset of these resources is transcribed. There are some other documentation materials which are not publicly available. Notable among these are Sicoli's (n.d.) large corpus of conversations in Lachixío Zapotec (Western), Pérez Báez's (n.d.) and Bueno Holle's (n.d.) collections on Isthmus Zapotec (Central), and Lillehaugen's (n.d.) collection of Tlacolula de Matamoros Zapotec (Central) materials.

In summary, the documentation project proposed here will create the first publicly-accessible documentation corpus for a Tlacolula Valley Zapotec variety, which will be the largest open-access corpus for a Central Zapotec language.

3 Intellectual Merit

3.1 Temporal-modal language as a unified system

The co-PI's dissertation will take a holistic approach in describing the temporal-modal system of Tlacoahuaya Zapotec. For the purposes of discussion, we understand three areas where temporal-modal information is encoded in language: **(1)** the grammatical encoding of temporality and modality on verbs, which is organized into a closed set of language-specific TAM CATEGORIES (e.g. the English Past Perfect or the Spanish Imperfecto); **(2)** the semantic specifications pertaining to individual words and phrases, including AKTIONSPORT of verbs and verb phrases and the semantics of temporal adverbials/particles; and **(3)** the discourse conventions surrounding temporality and modality, which may vary significantly between genres.

Within this framework, the TAM categories of a language work together to carve up the temporal/modal space, working along lines which are highly language-specific. These categories interact with Aktionsart and discourse conventions to communicate a speaker's interpretation of a situation. As Klein (2009) notes, the linguistic study of temporality has focused primarily on tense and Aktionsart, with some recent work on aspect, but has largely ignored adverbials and discourse principles. Like many fields of linguistic study, research on temporality/modality has also been biased towards a small group of Indo-European languages and towards a restricted set of text types. Formal treatments of tense and aspect tend to focus on the two concepts separately and therefore fail to capture the complex interactions within the TAM system as a whole in languages — such as those in the Zapotec family — where aspect and mood are fused together in the inflectional morphology.

The morphology and morphophonology of Zapotec TAM categories have been well treated by the literature, in particular in relation to Kaufman’s proposed verb classes (Kaufman 1993/2016; see also Smith-Stark 2002, Pérez Báez & Kaufman 2016). However, the syntax and particularly the semantics of temporality and modality remains mostly unexplored. Co-PI Plumb has identified eight TAM categories in Tlacoahuaya Zapotec, shown in the table below, as well as a variety of temporal adverbials. Surface-level investigation of these TAM categories suggests that the Imperfect, Progressive, and Completive are primarily aspectual, while the Potential, Future, and Counterfactual have more modal content (see also Munro 2006; Lee 2006 on San Lucas Quiavini Zapotec). The Z-Progressive and Stative categories are each restricted to a small set of verbs (the Z-Progressive appearing only on deictic motion verbs).

Category	Example	Category	Example
Imperfect (IMPF)	<i>dubte r-yehb</i> always IMPF-fall ‘It always rains’	Future (FUT)	<i>ze-ndyeny uwidzh zhi</i> FUT-rise sun tomorrow ‘The sun will rise tomorrow’
Progressive (PROG)	<i>ka-yehb nisgye</i> PROG-fall rain ‘It’s raining’	Counterfactual (CTF)	<i>Jwany nye-ta ’any</i> Juan CTF-dig ‘Juan was going to dig [but didn’t]’
Completive (COMP)	<i>nay b-yehb</i> yesterday COMP-fall ‘It rained yesterday’	Z-Progressive (ZPROG)	<i>Jwany z-e ndu’a</i> Juan ZPROG-go Oaxaca ‘Juan is going to Oaxaca’
Potential (POT)	<i>zhi yahb</i> tomorrow POT-fall ‘It will rain tomorrow’	Stative (ST)	<i>na-zhëny nez</i> ST-be.wide road ‘The road is wide’

While cognates of individual markers have been investigated in some languages — for example the Imperfect (Smith 2019), Z-Progressive (Anderson 2019), and Completive (Lillehaugen 2011) — the field lacks a comprehensive, descriptively-focused account of the entire TAM system of a Tlacolula Valley Zapotec language. Plumb’s Ph.D. Qualifying Paper on the Tlacoahuaya Zapotec Imperfect (see Plumb 2020) demonstrates the wide range of uses of this category and serves as a case study displaying the complexity of the Tlacoahuaya Zapotec TAM system. Plumb’s dissertation will describe the TAM categories as an interconnected system, as well as treating in detail the temporal and modal adverbs.

3.2 Management of TAM in narrative and discourse

Klein points out that “even a singular event has typically a very complex temporal make-up, which cannot easily be described in a single sentence” (2009: 70–71). In narrating a story or answering a question in discourse, speakers set up large situations with subparts, sometimes outlining a linear flow of events while at other times jumping between temporal reference points. Values of temporal and modal variables — such as tense or reality — may sustain or change throughout a narrative, and either way these values must be communicated.

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Additionally, TAM categories may behave very differently in different genres (see e.g. Blewett 1991) and temporal-modal information may be communicated by syntactic structure and other factors (see e.g. Beier et al. 2011). Ultimately, the temporal-modal system of a language is more than just the sum of its lexicon and TAM categories. Attention must be brought to discourse principles as well as an individual speaker's choices. In order to properly study temporality and modality in Tlacoahuaya Zapotec discourse, the co-PI will collect diverse genres of texts; this collection method is also in line with the goals of the language documentation project.

While the dissertation will be descriptively focused, research on TAM systems of the world has important applications to formal semantic analyses (see for example the contributions of Bohmeyer's work on TAM in Yukatek Maya, e.g. 1998, 2014). Perhaps most relevant is Kamp's Discourse Representation Theory (see Kamp and Reyle 1993). The dissertation research will be informed by more theory-driven studies, including work by Carlota Smith (1997, 2005, among others), so as to be maximally helpful to future investigations in this area.

3.3 Diachronic development of TAM systems

Because of the large corpus of colonial documents, Central Zapotec is a very productive place to do diachronic research. There is already a small body of work on TAM in Colonial Valley Zapotec (Broadwell 2015, Lillehaugen 2011), which opens an interesting avenue of research into the development of Central Zapotec TAM in the past five centuries. A long-term goal of the co-PI, building on her dissertation work on Tlacoahuaya Zapotec and her previous experience with the colonial corpus, is comparison of Tlacoahuaya Zapotec with colonial evidence in order to describe changes in the realization and distribution of TAM categories and temporal-modal adverbials. Plumb's Ph.D. Qualifying Paper and upcoming conference presentation (Plumb forthcoming) make a start at this, looking at the potential changes in the Imperfect category in Central Zapotec languages since the innovation of the Progressive (see Broadwell 2015, Smith-Stark 2004).

4 Broader Impacts

4.1 Training local research assistants

We are dedicated to involving community members in the research during every step of the process. Moisés García Guzmán, a Tlacoahuaya Zapotec speaker and language activist, has spearheaded several language revitalization/revalorization efforts in his town, and Plumb will prioritize work that supports his efforts. Additionally, Plumb plans to recruit and train one research assistant (TBD) during Fall 2020 and a second research assistant in Spring 2021. The research assistant(s) will be trained in different aspects of language documentation including audio-video recording, interviewing, transcription, and analysis. Backup audio-video equipment and a laptop is requested in the budget to allow Plumb and a research assistant to work simultaneously. Plumb will leave equipment in the field with the research assistant(s) if that is feasible. Possible research assistants will be determined after the research starts, and the recruitment schedule and training plan is subject to change based on community response.

4.2 Community workshops

During her time in Tlacoahuaya, Plumb will offer free, public workshops based on the interests of town leaders and local language activists. The town municipal office has a space appropriate for such workshops. These workshops will be open to all community members, and a specific effort will be made to include women, as they are often excluded from both political discussions and educational programs. Two possible workshop topics are (1) reading and interpreting Colonial Valley Zapotec documents and (2) supporting Tlacoahuaya Zapotec literacy and/or orthography development.

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(1) The Ticha Project (Lillehaugen et al. 2016b) includes four monolingual Colonial Valley Zapotec manuscripts from San Jerónimo Tlacoahuaya, and as Cordova lived in Tlacoahuaya while writing his grammar and dictionary (1578a,b) the town has a special cultural and historical connection with the colonial corpus as a whole. However, many speakers of Zapotec languages are unaware their language was ever written or used in government. When reflecting on the importance of colonial Zapotec documents, Tlacoahuaya language activist Moisés García Guzmán said the documents “help [speakers] to see how important their language was in official procedures” and “create a link with revitalization efforts that are going on” (Broadwell et al. In Prep).

Colonial-era documents are difficult to access and read, and the language has changed significantly since the colonial period (see Broadwell & Lillehaugen 2013). A workshop on Colonial Valley Zapotec documents would therefore make an important contribution to language revalorization and revitalization, as well as the repatriation of indigenous history. Plumb has experience with colonial Zapotec texts through her work on the Ticha Project and has assisted in multiple workshops focused on reading these texts (e.g. Lillehaugen et al. 2016a).

(2) The precise direction of a literacy/orthography development workshop would be determined by community interest and the goals of local language activists, including Moisés García Guzmán and María Mercedes Méndez Morales, who are both involved in developing pedagogical materials. The development of a standardized orthography often aids language revalorization, but may cause unnecessary disagreements and slow down the process of actually writing the language (see discussions in Rehg 2004; Lillehaugen 2016). Similarly, the promotion of literacy in minority languages can promote language use more generally, but may simultaneously contribute to stigmatization of oral traditions. These factors will be considered in developing community workshops. Co-PI Plumb has previously participated in Zapotec literature creation efforts including the Voces del Valle project (see Lillehaugen 2016) and a language arts workshop at a high school in Tlacolula de Matamoros. PI Woodbury has extensive experience training indigenous linguists (Woodbury & England 2004) and developing practical orthographies for tone languages (Cruz & Woodbury 2014b).

4.3 *Contribution to linguistic infrastructure*

One major output of this project is an open-access, annotated corpus of Tlacoahuaya Zapotec speech archived at AILLA. With consent from speakers recorded, all documentation materials will be publicly available; a copy of all materials will also be left in the community. As a direct consequence of the holistic approach to TAM description, the documentation corpus will reflect a broad swath of genres and speech types; such a text corpus is a central feature of classic Boasian language documentation and continues to be a crucial focus of modern documentation practice (see for example Epps et al. 2017). This corpus will be a record not just of the language but of Tlacoahuaya’s linguistic and cultural heritage. This project will thus contribute to a global effort to record and preserve diverse cultures of the world, while restoring power and control to indigenous communities.

The archive deposit is expected to contain: (1) at least 30 hours of Tlacoahuaya Zapotec audio-visual data, including 10 hours with time-aligned transcriptions and translations and 5 hours with morphological glossing; (2) a lexical database, which will be coordinated with the Tlacoahuaya Zapotec Talking Dictionary (Lillehaugen et al. 2019c); (3) manuscripts on Tlacoahuaya Zapotec grammar; and (4) materials from community workshops.

4.4 *Research experience for undergraduates*

The Intellectual Entrepreneurship program at the University of Texas at Austin (UT) creates a mechanism for graduate students to train and mentor undergraduate students in the realities of graduate study and

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research. As part of this project, co-PI Plumb will serve as a mentor to an undergraduate linguistics student. The undergraduate student will learn about methods of language documentation and description and the process of archiving linguistic materials, and in particular they will gain direct experience managing and analyzing Tlacoahuaya Zapotec data.

5 Research Plan and Methodology

5.1 TAM methodology

Following work by Cover (2015), the co-PI will take a hybrid approach to TAM description, including varied methodologies in order to capture a well-rounded cross-section of data. Three basic sources of data, as outlined by Cover, are elicitation, text collection and analysis, and observation of naturalistic discourse. Additionally, the co-PI's analysis may be informed by reflections and grammatical notes from more linguistically aware speakers. Research will proceed based on state-of-the-art methods in semantic fieldwork and language description more generally (see for example Bochnak & Matthewson 2015; Meakins et al. 2018).

Texts will be collected with a range of methods, although some genres may be constrained based on speaker's wishes. While an emphasis will be placed on recording speech in as naturalistic a setting as possible, structure is sometimes necessary for both efficiency and speaker comfort. In the co-PI's experience, most speakers are interested in monologic narratives on town history and culture, but less interested in sharing personal narratives, as they are seen as less important. Storyboards are a common technique in semantic fieldwork (see Burton & Matthewson 2015) and may be used to good effect when investigating TAM, as they elicit spontaneous speech in a controlled environment. Conversations may be recorded spontaneously, given the speakers' consent, or may be artificially constructed using a pairwise task. As the co-PI's own language learning continues, procedural texts may be collected in a more naturalistic skill-teaching environment. In the ideal situation, interested research assistants will be trained in interview methods to conduct semi-structured and unstructured monolingual interviews.

Data will be annotated to serve both as a resource on TAM and a general-use documentation corpus (see 5.2). Once the text corpus is annotated, description of the TAM system can proceed, following methods for example as in Bohnemeyer 2015 and Klein 2009.

5.2 Documentation methodology & field logistics

Following Himmelman, we take language description and language documentation to be intertwined but fundamentally distinct enterprises, where language documentation is not simply a collection of field notes but instead a "lasting, multipurpose record of a language" which may be characterized as a "radically expanded text collection" (Himmelman 2006: 1; 1998: 165). We further recognize that language documentation and language description rely on each other, as, for example, a documentation corpus cannot be meaningfully annotated without a robust understanding of the grammatical system. The language documentation produced by this project will be multi-modal (audio, video, text), general-use (i.e. not project specific), open access (where possible), and rigorously annotated.

In-community research will take place over the course of 6 months split across three trips to San Jerónimo Tlacoahuaya (as outlined in §6). Co-PI Plumb will live in Tlacoahuaya during these dates. During this time, Plumb will maintain working relationships with consultants from her pilot trips, while expanding her collaboration to as large and diverse a body of community members as possible. Consultants will be compensated at a rate of 75 MXN (~4 USD) per hour; this rate is based on the co-PI's previous experience in Tlacoahuaya and on standards set by other researchers in the region. Any research assistants or teachers with particular skill will be paid at the rate of 90 MXN (~5 USD) per hour. Many long-term consultants prefer to be paid on a weekly or fortnightly basis, while consultants who

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work for a very short period of time — for example, to record a single narrative — may prefer to be compensated via barter of household goods. To this end, payment is negotiated on a case-by-case basis.

Data collection and collaboration with consultants/research assistants is planned for 20 hours/week during the first trip and 25 hours/week during each subsequent trip. This is calculated based on the co-PIs previous experience working in Tlacoahuaya, factoring in the expectation of increased working time later in the project as her community connections increase. These hours include elicitation, text collection, and text translation/annotation. Other time in the field will be spent on (1) ancillary documentation tasks (e.g. transcription, planning elicitation sessions, managing metadata), (2) building preliminary analyses based on data already collected, and (3) maintaining social connections within the town by visiting consultants and participating in relevant town events.

All documentation data will be audio recorded (with speaker consent) using the co-PI's Zoom H5 audio recorder and a high-quality microphone (for example the Shure SM10A cardioid headset mic). Where possible, video will also be recorded in order to capture co-speech gestures and better document procedural (e.g. culinary, agricultural) discourse. Time-aligned, archivable transcriptions and translations will be created using ELAN (or a comparable future software) in consultation with native speakers. Transcriptions of naturalistic speech will be imported into FieldWorks Languages Explorer (FLEX; or a comparable future software) to facilitate morphosyntactic analysis. The use of FLEX will also facilitate the creation of a lexical database, which again will be accessibly archived. Recordings of some lexical items will also be added to the existing Talking Dictionary (Lillehaugen et al. 2019c).

The quantity of data collected will be constrained by the availability of speakers and the number of connections the co-PI is able to form. Additionally, the rate of transcription may be constrained by the co-PI's own rate of analyzing the phonology of the language, as no orthography currently exists for the language and the complex tone and phonation contrasts of the language are difficult for even native speakers to transcribe (Ambrocio Gutiérrez, p.c. 2019; see also Uchihara & Gutiérrez 2019). At a minimum, the co-PI aims to collect 30 hours of Tlacoahuaya Zapotec speech, with 10 hours of time-aligned transcriptions and translations and 5 hours with morphological glossing.

Recordings, transcriptions, and translations will be archived on a rolling basis, making materials available as soon as possible. Given consent from the speakers recorded (see §5.3), documentation materials from this project will be publicly archived at AILLA. The archive deposit will be accompanied by a finding guide to help navigate the deposit's structure. Copies of individual recordings will be returned to the speakers involved, and, given consent of the speakers and the town council, a local copy of the data will be preserved in the town archives.

5.3 *Ethical framework*

The co-PI's linguistic research in Tlacoahuaya has been approved with exempt status by the IRB at the University of Texas at Austin (Study #2018-02-0124). However, we strive to uphold an ethical standard beyond that of IRB guidelines. The co-PI's research will find direction based on participant observation in the sense outlined by Dobrin & Schwartz (2016). This model leads researchers to approach ethics in the field not based on 'best practices' or IRB regulations, but instead by asking "What constitutes good relationships according to those I am interacting with in the field?" (2016: 264). We are further committed community-engaged, collaborative research in the vein of Czaykowska-Higgins's (2009) Community-Based Language Research model, with the understanding that the *type* of engagement and collaboration should be inspired and directed by Tlacoahuaya Zapotec speakers.

While we aim to create an open-access documentation corpus, the wishes of speakers recorded stands above all else. As has been discussed in the robust literature on ethics in linguistic fieldwork, speech communities of marginalized languages differ greatly in whether and to what extent they wish to

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make recordings public, ranging from highly restricted use to fully public distribution of data (see e.g. Gasser 2017). In the co-PI's experience, most Tlacoahuaya Zapotec speakers are invested in public distribution of recordings. However, we approach archiving consent as an ongoing conversation between all parties involved in a recording. The documentation corpus will ultimately be designed to allow a balance between accessibility, confidentiality, and respect of community ownership (see discussion in Seyfeddinipur et al. 2019).

6 Tentative Project Timeline

The development and write-up of the linguistic analysis will take place throughout the research period.

August – September 2020 *Austin, TX*

- Defend dissertation prospectus
- Prepare for fieldwork

October – November 2020 *Oaxaca, Mexico*

- Meet with town council to renew approval and discuss project goals
- Record narratives and conversations, translate recordings with assistance from native speakers
- Elicitation focused on phonology and tense-aspect-mood paradigms

December 2020 – February 2021 *Austin, TX*

- Archive recordings from fall fieldwork
- Regularize and annotate data
- Attend annual meeting of the Linguistic Society of America (San Francisco, CA)

March – April 2021 *Oaxaca, Mexico*

- Continue recording and translating naturalistic texts
- Elicitation focused on expanding data from existing texts

May 2021 – February 2022 *Austin, TX*

- Archive recordings from spring fieldwork
- Regularize and annotate new data
- Archive transcriptions, translations, and annotations of field recordings
- Attend Congreso de Idiomas Indígenas de Latinoamérica (Austin, TX)
- Attend annual meeting of the Linguistic Society of America (Washington, DC)

March – April 2022 *Oaxaca, Mexico*

- Translation & elicitation sessions to wrap-up the corpus
- Deliver documentation and available research products to town council and teachers
- Attend Coloquio de Lenguas Otomanguan y Vecinas (Oaxaca City)

May – July 2022 *Austin, TX*

- Archive remaining documentation materials, create finding guide
- Submit deposit summary to Language Documentation & Conservation

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