Today I'm talking about Whistled Linguistic Registers with a particular focus on the whistled speech of the Chinantec people of Northern Oaxaca, Mexico. I refer to whistled speech varieties as linguistic registers rather than "Whistled Languages" (what's often the popular understanding) because rather than independent languages whistled speech practices are based on a spoken language and consist of repertoires that co-occur with particular social practices and social persons (a definition of register from Asif Agha 2004). Whistled speech is literally a transformation of a spoken language through a whistled repertoire of musical contrasts. Whistled registers, though rare, are rather widespread emerging often in canyon and island topographies, where face-to-face interaction may be difficult and time-consuming: Whistled registers have been observed throughout Meso-America, South America, on St Lawrence Island in the Bering Straight, Papua New Guinea, Africa, Southeast Asia, and Mediterranean areas including Turkish "Bird Language" and the well-known whistled Spanish Silbo Gomero in the Canary Islands. The social practices associated with whistled speech that recur across these areas involve two types of participation frameworks, one is long-distance communication and the other simultaneous speech, where often it's children who can use the whistled channel in the same speech scene with adult conversationalists without being accused of interrupting.
This screen shot from the documentary we'll view in a few minutes is suggestive of just how useful the register could be, not only for long-distance communication, but also allowing communication by relay far beyond the physical context of production, "we can ask our friend to call another friend to go with us." While both the long-distance and simultaneous speech contexts are historically reported for the Sochiapam Chinantec Community, only the long-distance communication contexts were documented since there are no children using whistled speech in the community [though you will see some whistling when asked in the video]. While the children of Sochiapam still spoke Chinantec at the time of this fieldwork, the whistled linguistic register itself is moribund, existing mostly as a remembered practice by the older men who used it in daily activities including organizing the local police force, announcing public meetings, making plans and working in the fields around town. At the time of our fieldwork it was only in regular use by one pair of men. This is why I titled this talk "Fragments of a language practice," which a language documentation always is—a partial or truncated representation of language in social life.
Project History

• Alaska EPSCoR (Pilot Project Jan 2011)

• NSF Rapid Response Research Grant
  BCS-1126027 Documenting Endangered Languages
  – Fieldwork in November 2011

Project history: When on the faculty of the University of Alaska Fairbanks, I applied for travel funding through Alaska EPSCoR (The NSF's Experimental Program to Stimulate Competitive Research). EPSCoR helped me conduct pilot research in the community in January 2011 which established the urgency for documentation. On returning to the States, I used what I learned on that trip to write a Rapid Response grant proposal to the National Science Foundation with David Yetman of the University of Arizona. We were awarded funding through the Documenting Endangered Languages Program and Cultural Anthropology to conduct a more involved documentation in November 2011. Our documentation concept had both a scientific component involving the development of a Language Archive AND a Public component involving the production of a Television documentary for the PBS syndicated program “IN THE AMERICAS”
The Scientific component involved building a multimedia language archive of Natural Conversations documenting whistled speech in its Cultural Ecology...
...conducting Psycholinguistic Experiments on the intelligibility of Whistled Speech; transcribing these materials to produce and archive time-aligned multimedia annotation files including Transposing the Whistled Speech to Spoken Chinantec, and translating these to Spanish and English...
...and additionally producing traditional transcripts texts of the whistled dialogues.
The archived materials are hosted with detailed metadata for online access available through request from the curator (through The Language Archive of the Max Planck Institute).
The transcriptions and media can be streamed online or downloaded for use by researchers and community members. [PLAY VIDEO]
The public component of the research was to develop a roughly 25 minute High Definition Video Documentary that would be circulated through public television and through internet links where it could be used to educate people about this amazing human ability of producing and interpreting whistled speech and to raise awareness of language endangerment and language loss. I'll play the video in a few minutes but first will take some time to talk about the place of Chinantec in Meso-American languages.
This is a map from Northern Mexico to Middle-Central America. The blue lines delimit the Meso-American Culture Area. The green line is the Western limit of Mayan expansion. I show that to make clear that the Chinantec language that I’m discussing today is NOT affiliated with the more popularly well known Mayan languages or also the late-arriving Aztecs that are both popular public icons of Mesoamerica. Chinantec is rather part of a much older and more widely distributed linguistic group known as OTO-MANGUEAN.
The Oto-Manguean language stock is the most widely distributed in Mesoamerica from N-Mexico to Central America. The time depth of the stock has been compared to Indo-European at over 7000 years, although its possibly considerably older with the West and East branches already divergent at a earlier horizon (Sicoli 2005).
The two main OtoManguean branches are referred to as West and East which are more centered on homeland hypotheses rather than current distributions. These homelands are both oriented on watersheds draining into the Pacific Ocean. The languages are typologically odd for North America tending toward isolating rather than agglutinative morphology and having very complicated tone and phonation systems that reconstruct to the highest levels of the stock.
This slide shows the hypothesized main migrations that explain the distribution of West OM languages at the time of the Spanish Conquest. Tlapanecan and Manguean still show orientations toward the coast. Oto-Pamean and Chinantecan show orientation to Highland Valley environments that define much of the Mesoamerican agricultural production since the Late Archaic Period. Chinantec is a West Otomanguean language that has moved east.
East Otomanguean has two main subgroupings Amuzgo-Mixtecan in the west and Popolocan-Zapotecan in the east. As deceptive as maps can be you can’t really see the diversity in this simplification. Zapotecan alone (the language family I’ve worked most in) has roughly 25 languages, Mixtecan around 15, and Popolocan, 4. Chinantecan itself is at least 4 mutually unintelligible languages. OM as a whole may represent over 80-100 distinct languages. Here you can see the West OM Chinantecan as a wedge between Popolocan and Zapotecan. This zone is an areal cluster for Whistled Speech, which is known in Popolocan, Chinantecan, Mixtecan, and Zapotecan languages.
Chinantec is one of the most prosodically complex of the Otomanguean languages. It has isolating morphosyntax, with mostly one or two syllable words, a modest consonant inventory of 17 consonants (plus glottal stop). Seven vowels, nasalization on vowels, seven tones, High, Mid, Low, High to Low Fall, Mid-to-Low Fall, Low to Mid and Mid to High (these are written with superscript numbers as indicated on the slide). Most Verb and Noun inflection show productive tonal contrasts (this will be important when considering how productive the whistled speech can be). There are also two syllable stress patterns; one is called Ballistic and represents a shorter vowel with peak of intensity that quickly declines and this contrasts with Controlled syllable stress which shows longer vowels and a steady (rather than sudden) declination.
In the whistled register consonants, vowels, and nasalization are all dropped out, but with glottal stop, the tones and the stress patterns, there are still 28 contrasts possibilities for each syllable that can be whistled. And as I said before, since verbal and nominal inflection have prosodic (melodic) specifications, whistled speech can carry information about things like possession, Tense, Aspect, and Mood that allows one to whistle about past, present, and future.
Here are two images of the same utterance whistled and spoken that show the striking parallel between the whistled and spoken forms. The blue lines are the pitch tracks and the black patterns the formants of the spectrograms.
Sochiapam Whistled speech represents one of two typological patterns for Whistled Registers. Tonal languages tend to have whistled registers that are based on the tone contrasts and ignore contrasts between vowels. Non-Tonal languages (like Turkish, Yupik, and Spanish) tend to have whistled registers where pitch contrasts represent the inherent pitch variation of vowel harmonics (which can be seen in the F2 frequencies of spectrograms).
The topography of the Chinantec region, makes whistled speech advantageous. Sochiapam is situated on steep mountain slopes above a canyon. Physically coming into face-to-face proximity requires great time and effort, while whistling allows long distance messaging (potentially across distances over 1km) almost instantaneously. The high pitch of a whistle travels a much greater distance than the voice can shout. The whistled register has several interational features that make it stand out from more intimate face-to-face interaction. For example there is a turn-final particle /réi13/ that’s whistled [whistles high-to-low falling pitch on syllable of quick intensity declination] and has a segmental form for shouted speech (another long, though not so long distance register). Réi13 is like “over” in radio operator talk marking turn finality. There are also frequency differences for conversational social actions like ‘requests for confirmation’, ‘conversational repairs’, repetitions, understanding checks and rephrasings. With all this conversational machinery people can communicate almost anything through whistles that they can when speaking.
Now I want to show the documentary Whistles in the Mist currently syndicated on public television stations through the series “In the Americas with David Yetman, with the Videography by Dan Duncan. The film is about 23 minutes long, Hopefully it will answer many of your questions, and will also prompt others, so afterward we’ll have time for an open discussion. Film can be viewed via this link: http://vimeo.com/57291304
Thanks to these institutions and these individuals for helping to bring this project together.

References Cited:


