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Grammaticalizing the face (as well as the hands) in a first generation sign language

The case of Zinacantec Family Homesign

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Zinacantec Family Homesign (or “Z”) is a first generation sign-language emerging in a single family in Chiapas, Mexico. Despite its very short history Z demonstrates how speakers’ gestures can “jump” into the lexicon of a newly created sign language and become further specialized via processes of grammaticalization. This paper moves beyond the grammaticalization of manual signs to consider how facial expressions can similarly be incorporated into the emerging lexicon and morphosyntax of even a very young sign language, contributing to the systematic expression of such grammatical categories as affective and epistemic stance.

Keywords: grammaticalization, sign-language, pragmatics, evolution of language, emergence, emerging sign language, homesign, non-manual signs, facial expression, stance, evidential, affect

1. Z: A first generation sign language

With apparent irony for a volume on historical linguistics, my topic is a first-generation sign language from Mexico, a language whose *entire history* encompasses less than four decades. I introduce the tiny speech (or sign) community, the full universe of users of this very young language, which I call “Zinacantec Family Homesign” or “Z” for short. Compared to the spoken languages of the world, virtually all known sign-languages are quite young, but Z represents an almost limiting case: a language that has sprung into existence during the lifetimes of a small cohort of users and which – probably like the vast majority of ephemeral sign languages invented throughout human history – may very well not outlast the first generation of its deaf users. After sketching a typology of the formatives in Z, I very briefly present a demonstrable case of “grammaticalization” in the manual signs that have emerged during this language’s short existence. As my main argument, I then introduce evidence for a nascent “facial grammar” embodied in a series of signs made on the face in Z. That processes of grammaticalization occur

in such a short span of time is strong evidence for the power and insistence of the underlying linguistic and interactional processes involved.

I have been engaged in research on Z for less than a decade (see Haviland 2011, 2013a, 2013b, 2013c, 2014, 2016), although I have spent nearly half a century working with Tzotzil speakers in highland Chiapas, Mexico, mostly in the *municipio* or township of Zinacantán (see Figure 1). I undertook the present work with trepidation because of my ignorance of sign linguistics, and I hope readers better versed in the field will pardon the fact that this ignorance not only persists but oppresses me ever more with its profundity.

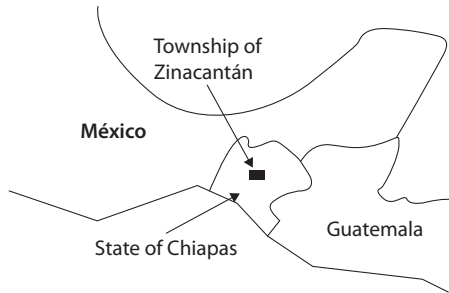


Figure 1. The township of Zinacantán, in the southeastern state of Chiapas, Mexico

The community of Zinacantán is one of a dozen or so communities in Chiapas where the Mayan language Tzotzil (Laughlin 1975; Haviland 1977, 1981; Aissen 1992) is the first language learned by children in the community. Despite slowly growing levels of bilingualism in Spanish, many Zinacantecs are conversationally comfortable only in Tzotzil, and most older people and even younger women are completely monolingual in the indigenous language of the community, which until recently has had no written tradition. Typologically notable features of Tzotzil include ergative morphology on pronominal clitics, robust VOS constituent order, and lexical roots strongly typed into both syntactic and semantic classes. Part of the linguistic interest in the current study is the degree to which typological features of the matrix language in the midst of which the new sign-language has developed are reflected in the emerging grammar of Z, if at all.

Homesigns – the ephemeral inventions of often single deaf children in interaction with their hearing caregivers (Feldman et al. 1978; Frishberg 1987; Goldin-Meadow et al. 1994; Fusellier-Souza, 2004, 2006) – and young emergent sign languages (for example, village sign languages which occur when bounded populations have unusually high rates of deafness) have been studied with increasing interest in recent years (see Zeshan & DeVos 2012; Nonaka 2004, 2009, 2011, among others). Classic work by Susan Goldin-Meadow (e.g., Goldin-Meadow 1993, 2003, 2012) demonstrated what she calls “resilient” language-like properties in homesign, and studies of young village signs show rapid but uneven emergence of grammar in the broadest sense: for example, formally distinguishable parts of speech, limited morphology, phrase structure, and consistent

constituent ordering (for example, Sandler, Meir, Padden, and Aronoff 2005; Meir, Padden, Aronoff, and Sandler 2007; deVos 2012).

My own research on Z has concentrated on emerging formal features of the language – grammatical categories and the morphology of sign form – as well as on sociolinguistic and interactive properties of Z conversation. Though I will say no more about this, I must mention that the research so far has radically shaken some of my deepest convictions as a linguistic anthropologist – for example, about links between Tzotzil language, Zinacantec identity, and social life. Briefly, these deaf signers seem to me to be totally “Zinacantec” in most of the (cultural and cognitive) ways that normally matter, but, of course, they know not a word of Tzotzil.

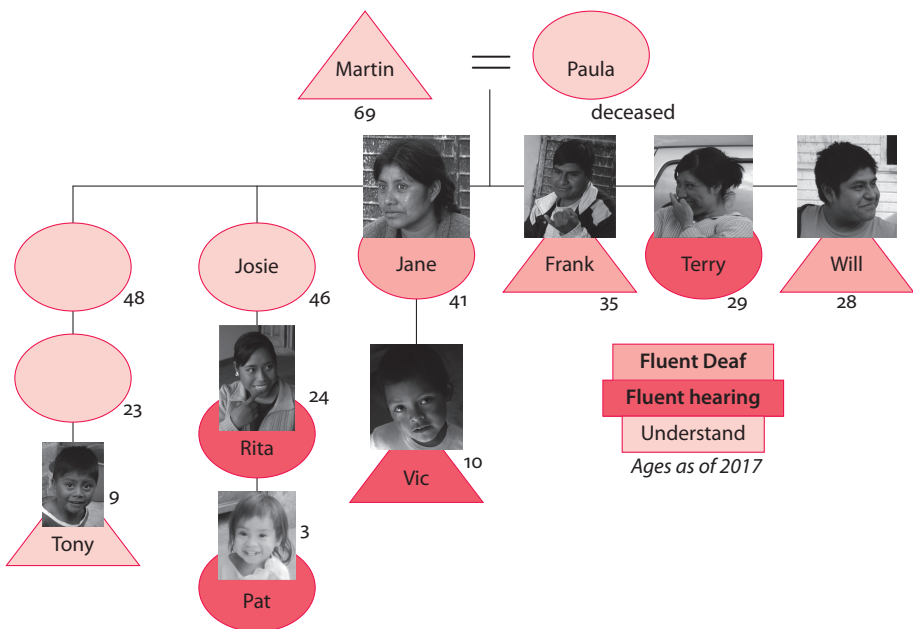


Figure 2. A simplified genealogy of the Z signers, 2017

Z has developed in a single extended household in highland Chiapas, Mexico, and in fact I have known all of the signers all of their lives, already being a close friend of the family long before the first deaf child, Jane (an English pseudonym, like the names used here for the other family members), was born. The sign language ultimately originates with Jane, who is, as one says in Tzotzil, *uma* – a Tzotzil word with almost the same negative polysemy as the English word ‘dumb.’ Unlike her older sisters, Jane never learned to speak. It was only when her younger brother Frank was born, and likewise did not talk, that the family began to realize the problem was deafness.

Figure 2 is a simplified genealogy of the community of Z signers, showing the three deaf siblings, their hearing sister, and two further native hearing signers (a niece Rita and a nephew Victor) who grew up in this extended household with Z and (in the case

of the hearing individuals) spoken Tzotzil as their means of communication. There are also two younger children, both hearing, sporadically learning to sign. Z has emerged with no input from other sign languages or deaf people. It is instructive to reflect upon and contrast the sort of linguistic experience Jane must have had, as the only deaf person in her household (and, indeed, in her entire village) for the first 6 years of her life, with that of Will – born deaf thirteen years later into a household where his three older siblings were already signing.

There are many notable features about a language community like this: an extraordinary degree of “common ground” and shared life experience for the signers; for me as a researcher, the unusual opportunity to document an entire speech community. For present purposes the most important feature of Z is its extremely shallow history: only 1.5 generations, fewer than 40 years of life, and consequently a limited time depth to support the evolution of “convention,” whether in lexicon, grammar, or interactive organization. In hindsight, I am sorry that I didn’t start research at the “birth” of the language, that is, with the deaf individuals when they were still infants. Instead I delayed until the original signers were young adults before summoning the courage to embark on systematic study of their signing. This unfortunate missed opportunity makes it hard to document with confidence certain changes in the sign language itself, and importantly the presumed initial “species jump” from gesture to sign. For it seems evident that an important part of the raw material available to the deaf children as they began to fashion a communicative system in concert with their hearing caregivers was the repertoire of visible behaviors – perhaps most notably the co-speech or “speakers” gestures (Kendon 2004) – already present in the Tzotzil speech community in which they were raised.

2. A brief typology of Z signs

Indeed, a systematic study of the inventory of formatives in Z across the entire “sign community” reveals a wide range of sign types, some of which clearly resemble the gestures used by speakers of Zinacantec Tzotzil. For example, conventional gestural “emblems” are frequently seen as part of Tzotzil speech: handshapes denoting ordinal numbers, for example, or with specific lexical meanings like ‘money’ or ‘liquor’; there are also head nods, shrugs, and other visually performed conventional interactional moves, tiny non-verbal holophrases which can accompany speech or replace it in ordinary Tzotzil interaction. Spoken Tzotzil and signed Z both also make frequent use of indexical or pointing gestures of various kinds, some with outstretched fingers, others using gaze and the orientation of the face, still others the head, the chin, or the lips, as well as a range of other body parts, even the feet. Both also use visible forms that correspond to what are often called “depictions” (Clark 2016) or “iconic” gesticulations in speech (McNeill 1992), miniature partial enactments of action patterns designed to evoke by illustration objects, actions, and scenes related to the content of utterances. That the inventory of Z signs includes such gesture-like performances suggests that

speakers' gestures can be borrowed from the visible communicative modalities that accompany speech and incorporated into the signed modality that *replaces* speech in an emerging sign language.

At the same time, the full inventory of Z signs also includes signed analogues of lexical and sub-lexical elements familiar in all languages, signed or spoken, and these do not directly necessarily resemble anything with which I am familiar in Zinacantec Tzotzil co-speech gesturing. At the lexical end are proper names (sometimes called "sign names") for individuals, signs for common nouns and verbs, temporal adverbs, and the like – portable signs (i.e., those which are relatively context independent, see Kockelman 2016: 6ff) with different degrees of denotational specificity. At the grammatical end are sub-lexical formatives like classifiers, "size and shape specifiers" which subcategorize physical entities into different classes, and a variety of particles and other constructional markers. I will concentrate here on a particular subset of Z signs made on the face, many of which inflect utterances with affective and evidential categories.

3. An instance of grammaticalization in Z

Before moving to the face as a Z articulator, I offer a brief illustration of a multi-stage process of evident grammaticalization (Heine 1997; Hopper & Traugott 1993) involving a manual sign, to demonstrate its possibility in even an extremely young emergent sign-language. (For a more detailed treatment of this sign see Haviland 2015.) Overviews of grammaticalization in sign languages (Pfau & Steinbach 2006, 2011; Janzen 2012) mostly involve progression from lexical signs to grammatical formatives. Though relatively recent, comparative studies of *emerging* rural sign languages (e.g., Zeshan 2003, 2004a, 2004b, 2006) have argued for possible gestural origins for many grammatical formatives. Speakers' gestures are selectively borrowed and lexicalized into sign, and then, over time, systematically regimented into signed grammatical roles. (For such grammaticalization paths in established sign languages, see Wilcox & Wilcox 1995; Wilcox 2004, 2007; Janzen & Shaffer 2002.)

Gestures used by speakers of spoken languages are plausible sources for at least some lexemes in the sign languages used by members of the same communities (Perniss & Zeshan 2008; de Vos 2012; Le Guen 2012; Haviland 2013c, 2014). In the case of Z, one grammaticalization chain starts, apparently, with a gesture ubiquitous not only among Tzotzil speakers but in Latin America more generally, as well as in many others parts of the world, illustrated in Figure 3, taken from a video of a Zinacantec man at a fiesta. Readers will perhaps recognize the gesture – a hand held with the palm outward, fingers first raised and then flicked downward, the motion sometimes repeated – as an emblematic holophrase meaning "come here!" or, sometimes, "bring it here!" (The gesture is not, in fact, transparent to many North Americans who are more likely to misinterpret it as meaning "good bye" or "go away.")

Predictably, since it is a conventionalized part of the spoken language, the *hearing* members of the Z household use this same gesture when talking with one another in



Figure 3. A speakers' gesture in Tzotzil: "Come!"

Tzotzil. More interesting is the fact that the deaf signers *also* use it with one another when signing in Z. Figure 4, for example, shows how Frank motions for his deaf sister Jane to come closer and sit beside him.



Figure 4. Frank signs "Come!" to Jane

This simple example suggests that a conventionalized emblematic co-speech gesture has made what we might call the "species jump" from a surrounding speech community

to the tiny embedded sign community within it. A gestural emblem has become a (borrowed) sign.

Figure 5 illustrates the presumed historical progression linking a series of Z signs via a grammaticalization process. The leftmost arrow on this chart, linking Tzotzil speakers' gesture to the Z sign language, represents this "species jump" or borrowing from gestural holophrase to a conventionalized Z sign, which functions as a complex command COME! (establishing mutual attention with an added request for action). The box on the left represents spoken Tzotzil with gestures, and the box on the right represents the sign language Z, which seems to have *borrowed* the co-speech gesture as a sign.

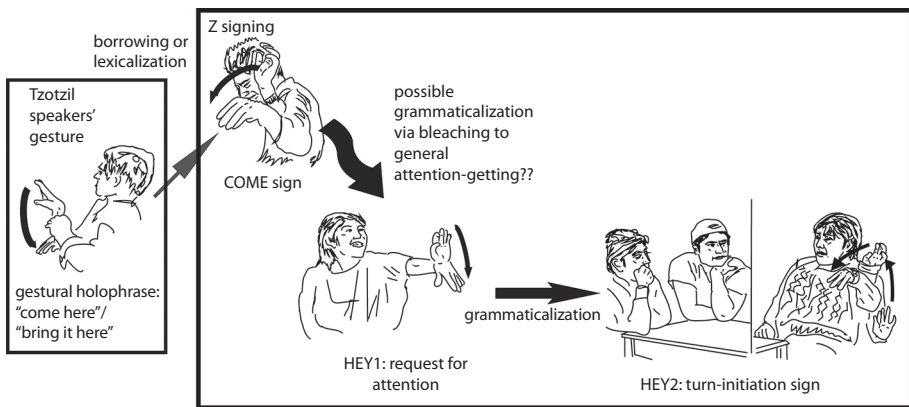


Figure 5. A putative historical progression (from Haviland 2015)

Whether or not it is historically related or independently created – and this uncertainty is represented by the thick, squiggly arrow in Figure 5 – Z has *another* sign, glossed here as HEY1, which is formally very similar to the COME! sign. HEY1 is used to solicit an interlocutor's attention to an upcoming signed utterance. It is one of a several devices, both visual and tactile, the Z signers use to secure another's attention for subsequent signing. (Since many of their potential interlocutors are hearing, the deaf signers also use a variety of vocalizations, some of which also serve to elicit attention.)

The HEY1 sign, in turn, appears clearly to have been grammaticalized to another sign, glossed HEY2, which is sometimes formally distinguished from HEY1 by the lack of mutual gaze between the signer and his or her interlocutor. HEY2 indicates not a request for attention but merely the start of a conversational turn. It has become, that is, a pragmatic marker of turn-beginning. This putative grammaticalization is represented in Figure 5 by the horizontal black arrow from left to right.

Consider first HEY1, the attention getting sign. In the video frame shown in Figure 6 it is performed by Jane, calling for the attention of her brothers to whom she wants to pass a tidbit of news. (Note, as a hint of what is to come, her raised eyebrows and smile.) Although they are seated almost immediately next to her (and thus have



Figure 6. Jane signs HEY1 to solicit her brothers' attention

her clearly within their peripheral vision), the brothers are concentrating on their meal rather than attending to her. In fact Jane has first tried unsuccessfully to solicit her brother's attention by touching his leg (Figure 7), only afterward trying again to gain her other brother's attention with multiple versions of HEY1 (Figure 8).



Figure 7. Jane tries to get her brother's attention by touching him

In a slightly different situation, Jane is seated on the opposite side of a wide patio far from her brothers when a large bus pulls up on the road outside the door to the house compound. In quick succession, she signs HEY1 (Figure 9) to attract her brothers'



Figure 8. Jane then signs HEY1 to get her other brother's attention

attention, and then COME! (Figure 10) to get them to approach the bus. The two figures illustrate the similarity of the movements involved in the two signs, in the configuration of both hand and arm; but static illustrations cannot show as clearly the principal difference: that the HEY1 sign includes multiple quick strokes up and down, whereas the COME! sign involves sharper, slower, and more demonstrative hand flips, each held briefly before the next is performed.



Figure 9. HEY1: Jane waves for attention with fast, multiple strokes



Figure 10. COME!: Jane asks her interlocutors to approach, with single, sharp strokes, held

One can imagine, rightly, that the main use of the HEY1 gesture is to initiate interaction, most often a signed conversation: the sign represents a visual request for an interlocutor's attention. But even when that attention has already been established, the gesture is also used for interactional "repair" when, for example, an interlocutor has been distracted.

I should clarify that many of the examples in the remainder of this paper are drawn not from spontaneous conversational interaction among the Z signers, but from semi-controlled eliciting sessions in which different signers are shown visual stimuli – mostly photographs or video clips presented on a computer screen – and asked to sign what they have seen to one or more interlocutors, who in turn must try to identify them. The ensuing discussions are often competitive and critical, as denotational uncertainties prompt disagreements and misunderstandings. I employ such methods with the Z signers both to attempt to elicit fulsome linguistic performances, but also to provide them with a kind of legitimate paid "work" that justifies their spending extended periods teaching me their sign language. Although natural signed interaction would be ideal, in many cases this somewhat contrived, elicited signing must stand as the only available proxy.



Figure 11. Jane has lost Terry & Will's attention

Figure 11 illustrates how Jane – on the right in the image from a split-screen video – is about to describe a photograph to her siblings, on the left; but their attention has been temporarily drawn to another person entering the room. Jane's signing hands are at rest as she waits for them to turn their attention back to the task at hand. The exact timing of her signed performance is quite delicate. As she sees her siblings' gaze beginning to return to her, Jane starts to perform the HEY1 sign (Figure 12).



Figure 12. Jane lifts her hand to perform HEY1

However, she immediately suspends the sign when her interlocutors exchange glances with one another rather than looking at her. When this happens, Jane moves her raised hand to her mouth and appears to bite briefly on her thumb, appearing to wait until the others gaze at her (Figure 13).



Figure 13. Jane waits until her interlocutors gaze at her

It is only when her brother and sister are gazing directly in her direction that she begins again to sign “HEY1” and immediately carries on with her description (completing the downward stroke of HEY1 and continuing with a “size shape specifier” that indicates the dimensions and heft of a forthcoming nominal constituent – see Figure 14).



Figure 14. With her interlocutor's attention, Jane signs HEY1 and starts a description using a size-shape specifier

Here HEY1 seems to have moved in the direction of the postulated, grammaticalized HEY2 shown above in Figure 5. Jane uses a beckoning movement like that in Figure 9, although it is kinesically a highly reduced version of it: Jane produces only a single, minimal downward flip of the hand before she goes on to describe the photograph.

Further progress in the direction of HEY2 – what I analyze synchronically as a pragmatic turn-initiating particle – is evidenced in a different interaction. Terry, on the right in Figure 15, already has the visual attention of her interlocutors (although she is actually gazing at a computer screen and not at them). Nonetheless, she still performs the sign, which now apparently functions not as a true request for attention but as a formal mark of turn beginning.



Figure 15. Terry signs HEY2 with her interlocutors' gaze already fixed on her

Figure 16 also allows the reader to see, on the left, that Will immediately acknowledges Terry's signed HEY2 with a quick eyebrow flash and slight head tilt.



Figure 16. After Terry signs HEY2, Will acknowledges with an eyebrow flash

Most important is that because the interlocutors' attention has already been secured *before* the HEY2 sign is performed, the functional load of the sign has evidently been reduced and redirected as a grammaticalized conversational turn initiator. (In a familiar way, the morphology of the grammaticalized sign has also been simplified – reduced, here, to a single hand flip – and its syntagmatic possibilities have been restricted, linked now to a turn-beginning; both features are characteristic symptoms of the postulated grammatical specialization of HEY2.)

4. Affect and attention on the face

Scrutinizing the individual frames from this video segment leads directly to the principal theme of this paper: that just as Z has adopted and re-analyzed co-speech gestures for incorporation into the linguistic system of the language, it has also made systematic linguistic use of other visual signs that accompany speech. Here are individual video frames of Will's extremely brief eyebrow flash, before, during, and after (see Figure 17). It lasts only two tenths of a second. Nonetheless, it seems clearly *designed* to have a communicative function, signaling reciprocity or attention in apparent response to Terry's HEY2 sign.



Figure 17. Will's eyebrow flash, before, during, and after

This can be seen most directly by examining the exquisite timing that links Terry's signing to Will's facial response. As can be seen from the split screen image of frame 4.09 (that is 4 seconds and 9 frames; note that these NTSC videos are recorded at 30 frames per second), Will is already gazing at Terry when she begins the preparatory motion for HEY2 – lifting her arm from rest position.



Figure 18. Frame 4.09, Will stares at Terry as she prepares to sign HEY2

Terry performs the 'stroke' (Kendon 2004; Haviland 2014) of main dynamic movement of the sign – the hand flip forward – from frames 4.19–4.24, as illustrated in Figure 15 above. Her hand is still retracting from that sign, when 3 frames (or one tenth of a second) later Will's eyebrows start to move upwards (Figure 19), along with his head, reaching their peak of upward motion another tenth of a second later (Figure 20).



Figure 19. Frame 4:27, Will's eyebrows start up as Terry's hand retracts from the HEY2 sign



Figure 20. Frame 5.01, Will's eyebrow flash reaches its peak

Will has returned to his rest position and neutral face, 8 frames later (Figure 21), well before Terry another third of a second later begins to sign FISH, the first part of the scene on her computer screen she is meant to describe (Figure 22).



Figure 21. Frame 5.09, Will returns his head to rest position



Figure 22. Frame 5.18, Terry goes on to sign FISH

Considerable ink has been spilled on the “eyebrow” flash cross-culturally as a kind of “visual exclamation point” (Eibl-Eibesfeldt 1972; Grammer et al. 1988) or to “indicate the intention to communicate” (Frith 2009). The sequential facts displayed in this tiny Z interaction, however, suggest a further, more structured role for the eyebrow flash, here as a specific kind of turn, namely the second pair-part of a two-part adjacency pair (Sacks et al. 1974). The sequence in question begins with the turn-initiating HEY2, to which the eyebrow flash is an explicit acknowledgment of imminent reciprocity. (Will’s

half-smile, a kind of affective inflection on his turn, also seems to suggest that this reciprocity is willingly and freely given.)

Sequentially quite different is Jane's use of her eyes, apparently for affective emphasis, in the midst of a long monologue about the large crowd that gathered to see a drunk man hauled off to jail (Figure 23). Since she already had the narrative floor to herself, she clearly did not need to indicate her intent to speak (i.e., sign); nor did she need to indicate reciprocity to another. So what did her exaggeratedly widened eyes mean? To her hearing sister, glossing the scene for me afterward, it meant that she thought the crowd was excessively large. But is that a systematic part of Jane's sign repertoire, a nonce iconic depiction of some affective state (on her part, or perhaps that of one of her protagonists), or perhaps an artifact of another more principled relationship?



Figure 23. Jane widens her eyes and lifts her brows for apparent affective emphasis

Jane actually widened her eyes and lifted her eyebrows first when she solicited her interlocutor's attention with an apparent HEY1 sign at the beginning of this short signed sequence (Figure 24). However, she maintained the extra wide eyes throughout her description of the very large crowd that gathered to watch the drunk villain of her story be tied up and dragged off to jail (Figure 25). One of the puzzles of working on a new sign language like Z is trying to determine how and whether such "non-manual" modes of expression convey meaning systematically, and what their syntactic and paradigmatic relationships might be.



Figure 24. Jane signs HEY1 and starts her eyebrow flash



Figure 25. Jane maintains her eyebrow flash as she signs LARGE CROWD

That the face is used in Z to express what linguistic anthropologists (e.g., DuBois 2007) call “stance” is hardly in doubt. For example, in Figure 26 you can see Will’s rolling eyes as he reacted to Jane’s momentary memory loss in an experimental task. He was waiting for Jane to describe a short video clip, but, as sometimes happens, she forgot what she was supposed to retell just as she began to start signing. Will noted this hesitation (Figure 27) and averted his gaze (Figure 28), rolling his eyes in mock (or real) disgust as she tried to remember what was in the video. Jane finally remembered the scene

and called for Will's attention with HEY1 (Figure 29), although he studiously avoided looking at her. He only returned his gaze (and a small smile) to her when she actually began to sign the scene (Figure 30).



Figure 26. Will rolls his eyes in response to his interlocutor's hesitation



Figure 27. Will sees that Jane can't remember



Figure 28. Will looks away



Figure 29. Will still refrains from gazing at Jane as she signs HEY1



Figure 30. Jane signs MATCHES and Will restores his gaze to her, with a grin

More apparently conventionalized is the “angry scowl” (as we might call it in English) which Frank transmits to Will in another elicitation session (Figure 31).



Figure 31. Frank scowls at his brother

Will has responded to a question with a noncommittal “shrug” (as we would call this lifting of the shoulders in English). (The ‘shrug’, which consists of movements of the shoulders, the left hand, and the face, can be seen dissected in Figure 32.)



Figure 32. Will “shrugs” in answer to a question from Frank

Frank’s face – glossed by the hearing signers as indicating “anger” or displeasure – involves knitted brows and a tooth-displaying movement of the lips to express his displeasure at Will’s non-answer to his question. Whatever the exact gloss, it is again apparent that Frank’s “turn” is sequentially reactive, a response to Frank’s own immediately previous shrugged indifference.

Lastly, in this little catalogue of affective facial expressions – which I presume most casual observers will read more or less transparently without feeling the need to know anything special about how Zinacantecs use their faces or even what they are talking about – Jane fairly obviously evinces displeasure as she pours a cup of soft drink (Figure 33). She’s unhappy with how long it has taken Will to finish his own portion, since the communal cup must also be used to serve the others present from a bottle Jane holds in her hand. Again, placing this facial display in its sequential context shows a bit more about how the face is recruited to systematic uses in Z signing.



Figure 33. Jane ‘pouts’ in displeasure at her brother for being slow to pass on a cup which she needs to serve another person

The interchange begins with Jane prominently displaying displeasure on her face as she sits holding the soft drink bottle, waiting for Will to finish his own cupful (Figure 34). When her other brother Frank asks her what's wrong, she tells him that Will (at whom she launches a critical sidelong glance) must drink up because she must continue serving the drink (Figure 35). Will in turn asks Frank why Jane is upset, and Frank explains. With exaggerated care, Will drinks the soda and passes the cup back to Jane, who is still pouting and denying Will her gaze (Figure 36). The interaction ends as Will goes on to mock Jane mercilessly for getting angry over what he considers a trifle, and even she cannot resist the slightest of grins as the miniature interaction ends (Figure 37).



Figure 34. Jane starts pouting as she holds the soft drink



Figure 35. Jane shoots Will a sideways glance as she signs to Frank that Will needs to drink up



Figure 36. Jane starts to pout more demonstratively, as Will passes her his cup



Figure 37. Will mocks Jane for her anger

Ever since Darwin (1872), ethologists and psychologists (see Ekman & Friesen 1971; Eibl-Eibesfeldt 1972; Ekman et al. 1987; Ekman 1993, among others) have argued that the face is a potent expressive device, multiply communicative, whether or not it is specifically integrated with a particular linguistic system, and whatever one might argue about the universality of facial expression (which presumes some sort of universality about what is expressed) or the possibility of leakage of true feelings through the face when, say, speech is contradictory or deceptive (for example, Ekman & Friesen 2003). Sign language linguistics, on the other hand, uniformly adds the face to its list of formal “non-manual” articulators (Wilbur 2000), to recognize the fact that expressions of the face and attitudes of the body other than the hands frequently figure in signed performances (e.g., Stec 2012; McKee & Wallingford 2011; Dachkovsky 2004; Shaffer 2012). Bolstered by evidence just presented in this section that Z signers make clear interactive use of facial expression in signed conversational exchanges, I shall argue in the final part of this paper that in Z the face appears to encode the sorts of epistemic and subjective states (Traugott 1989, 1995; Shaffer 2004) which frequently figure in grammaticalized systems of evidence and affect.

5. Grammars of the face



Figure 38. Apparently expressive uses of the face from Z signers

That the face is expressively employed by the Z signers in ways that recall Tzotzil speakers' facial expressions – indeed, those familiar from people around the world – is hardly in doubt, as previous examples and the additional little gallery in Figure 38 show. But are such facial expressions systematically integrated into the emerging language? Zeshan (2004b) takes up the question explicitly in her survey of non-manual expressions of negation in a range of sign languages. She notes that scholars normally consider “non-manual features” to be “much more than expressions of emotion and affect... They are an integral and very important part of the grammar of all sign languages investigated so far” (p. 14). However, she goes on to note that it may be “difficult to decide whether a particular component of a nonmanual signal has a syntactic, a pragmatic, or an affective function”; it may also “be hard to tell whether two nonmanual features are variants or separate markers with distinct functions. The task is made more complicated by the fact that nonmanual signals typically consist of more than one sub-feature, not all of which are necessarily obligatory” (ibid.).

In principle, one would need the same kinds of evidence one might want for manual signs to argue that a visible facial expression belongs to the grammar of a sign language. To start, one would expect conventionalized standards of form for a facial sign. At the same time, one might want to demonstrate *disaggregation* of forms; that is, the possibility that, say, a “single” facial configuration could appear both together with and independently of other sign forms, whether manual, facial, or otherwise. One would also expect both the syntactic regimentation and specificity as well as the semantic schematicity typical of other grammaticalized formatives to characterize putative facial signs. In addition, in a first generation emerging language like Z it would be reasonable to try, at least initially, to link candidate facial signs to surrounding speakers' uses of the face, if not to spoken analogues of the putative categories denoted. I can only hint at these arguments in what remains.

In discussing the eyebrow flash above I linked facial expressions of ‘attention’ involving the eyes to manual signs HEY1 and HEY2. I want now to introduce two more formal categories: those facial configurations involving the “knitted brow” or frowning forehead; and those involving the “turned down” or frowning mouth. The two categories suggest one sort of formal “disaggregation”: what is called a ‘frown’ in English usually involves both eyebrows and mouth, but in Z signing their use seems to have been

potentially pulled apart or “re-analyzed” in a way characteristic way of grammatical processes. (Even in the popular facial vocabulary of languages like English – words like ‘frown,’ ‘grimace,’ or ‘pout’ – multiple kinds of stance are usually merged into single words denoting complex facial expressions. These stances need some conceptual disaggregation themselves, as when we distinguish a frown of disagreement from a frown of doubt, or a grimace of displeasure from one of disgust.)

6. The frown: Critical uncertainty

Consider first the eyebrows. It appears that in Z the eyebrow part of a frown suggests doubt, uncertainty, lack of knowledge or understanding, typically directed toward an interlocutor. It is, in the terminology of conversation analysis (Sacks, Schegloff, & Jefferson 1974; Dingemanse et al. 2015), one prominent device for “other-initiated repair”: a way of signaling some kind of trouble with an immediately preceding turn. “Huh?” would be a good rough gloss in English. Will displays such furrowed eyebrows (although in this case not as a direct repair initiator) in response to a short videoclip of his brother’s signing in Figure 39. Here, the frowning brows (bracketed by a normal face) stand as a full turn unto themselves, an expression of deep puzzlement: “what on earth is he signing?”



Figure 39. Will frowns with his eyebrows to initiate a repair sequence

The knitted brows can also add to an utterance a targeted interrogative flavor, which has an inflectional character that can be co-articulated simultaneously with fully fledged lexical signs. For example, in Figure 40 Terry signals by furrowing her brow that she cannot understand what sort of object is being expressed by her interlocutor’s sign (a “size and shape specifier” or SASS which characterizes visible properties of a forthcoming nominal constituent). The result is an instance of a classic epistemic stance – one variety of the grammatical category Jakobson (1957) called “status” – or, more conventionally, a kind of “speech act force” (here, “interrogative”) mapped onto a modulating facial co-articulation.



Figure 40. Terry co-articulates the furrowed brow with a SASS

Once again, the exact details of the sequence are important to understand how visible behaviors combine to produce the composite meaning of the whole. The interchange begins as shown in Figure 41 as Terry's interlocutor (whose hands are just visible at the right of the frame) signs a SASS meant to indicate a box shaped object.



Figure 41. Terry's interlocutor signs a SASS

Terry is evidently uncertain what sort of object he means, so she herself starts to repeat the SASS, and while she is still extending her hands to do so she adds the furrowed brows.



Figure 42. Terry starts to sign the SASS, adding the furrowed brows

Terry holds the frown for about 6 tenths of a second, during which time she lifts her hands – still forming the SASS – and drops them again to the table (Figure 43), only releasing the frown when her interlocutor clarifies his meaning (Figure 44). The frown is, thus, a kind of interrogative inflection applied to the repeated (i.e., quoted) SASS sign: “What do you mean by ‘SASS’?”



Figure 43. Terry holds the frown as she emphasizes the SASS



Figure 44. Terry abandons the frown when her interlocutor responds

A different part of the “frown” face is performed with the mouth, what might be called a ‘scowl’ in English. In Z turning down the edges of the mouth seems to mean “doubt” in another sense: disapproval, disagreement, reluctance. Frank, for example, moves from an unmarked smile at his interlocutor (Figure 45), to a clearly downturned mouth (Figure 46) that indicates he is unsure about and therefore neither confident nor willing to perform the task he has just been assigned (a pseudo experimental task I had just imposed on the signers for the first time). This is a slightly different kind of epistemic modulation: not a request for more information, but a refusal of information or suggestions already proffered. If the knitted brow is interrogative, the downturned lips are oppositional. (As Frank makes the exaggerated frowning mouth, he also hints at shaking his head [Figure 47] in a characteristic negative way – note that he does NOT furrow his brow – before returning to a neutral, smiling face.)

I am reminded of De Jorio’s extensive observations, from almost two centuries ago, about varieties of negation (or perhaps better what Anna Wierzbicka in 1977 called more generally the “ignorative”) and their visible expressions in Neapolitan gesture:



Figure 45. Frank smiles normally at his interlocutor



Figure 46. Frank turns down the edges of his mouth to express doubt about his ability to perform a task



Figure 47. Frank keeps his mouth in a frown as he half shakes his head

One can say ‘No’ in gesture in many different ways: With the eyes, with the head, with the head and the hands, with the hands alone, with the whole body, or simply by raising the shoulders, burying the neck. The spirit of the gesture can also vary. One can deny with indifference, with zeal, with surprise, with disdain or horror and finally with irony... Although these variations are defined by different facial expressions, there are also simple variations in the gesture itself, and these also can vary the meaning...

(De Jorio & Kendon 2000: 289)

Zeshan (2004b) surveys the range of devices used in a wide variety of sign languages for marking different kinds of negation, commenting especially on “non-manual” signs – both movements of the head and facial expressions – that express negation, often with “suprasegmental” realization that allows them to exhibit “scope” over different manually-signed constituents. It is sometimes observed, for example in ASL, that signs can be modulated or their affective polarity reversed by adding an appropriate non-manual sign.

ASL sign for BAD: “You also change your facial expression to match your meaning. Generally, this is a frown or scowl when signing ‘BAD.’” (www.lifeprint.com)

It remains for me to show that the Z co-articulations I have introduced systematically modulate signs performed with other articulators, including the hands. In Figure 48, for example, Terry starts with normal gaze at her interlocutor, and then furrows her brow to bracket her repetition (Figure 49) of her interlocutor’s sign. She thus adds an interrogative inflection that turns her utterance into a question: “What does this sign mean?” (with the added implication that maybe it means nothing).



Figure 48. Terry gazes at her interlocutor and adds a frowning brow



Figure 49. Terry repeats her interlocutor's sign, maintaining the frown

Finally she unfurrows her brow and concludes the utterance with an interrogative head tilt (Figure 50).



Figure 50. Terry performs a final interrogative head tilt, without the frown

When she adds the knitted brows to an imperative – as in Figure 52, where she adds an affective critique to her instruction to Frank that he should explain a stimulus picture to her other brother Will – she sandwiches the fleeting, critical grimace between broad grins, thus adding a targeted critical stance to her command, as if to say “do this! and

what do you think you're up to, anyway? why aren't you doing it, when you know you should?"

The entire complex sequence consists of essentially nothing but pointing gestures, one of which is inflected with a frown, and therefore given a pragmatic emphasis. Terry points first at Will, who is to be Frank's addressee, then at the stimulus picture Frank is meant to describe, and finally to Frank himself, who is meant to do the narration (Figure 51).



Figure 51. Terry points to Will, then to a stimulus picture, then to Frank

Terry then adds the knitted brows to her pointing gesture, turning it more explicitly into an imperative admonition (Figure 52). The knitted eyebrows persist even after Terry's pointing finger begins to retract, and ultimately her face returns to her original smile (Figure 53).



Figure 52. Terry continues to point to Frank, adding a critical grimace



Figure 53. Terry drops the point and holds the grimace, then returns to her smile

Finally, note that the downturned scowl mouth can apparently also function as an independent modulator. The final example illustrates the complex syntax over which Will laminates a double affective/evidential facial modulation, combining both the knitted brow and the downturned corners of the mouth. He is talking about a short video clip in which his brother Frank attempts (and fails) to identify a picture. He watches the video sequence on my computer screen with a mild grin (Figure 54), and then he produces a sequence of individual signs.



Figure 54. Will starts with a slight smile on his face

1. He begins his comment with a pointing gesture (at Frank on the screen), during which he rearranges his face in a pronounced grimace or scowl, with both downturned mouth and furrowed brow (Figure 55).



Figure 55. Will starts to pull down the corners of his mouth before he points at Frank on the screen

2. Will then produces a negative finger wiggle, his face still in a scowl (Figure 56).



Figure 56. Will signs a negative finger wave

3. He then touches his temple meaning “Frank can’t think (what it is he’s meant to describe)” (Figure 57).
4. He ends with a final point to Frank onscreen (Figure 58), at which point the scowling face has dissolved.



Figure 57. Will touches his temple to sign THINK



Figure 58. Will's face loses the scowl as he points again to the image of Frank onscreen

The frowning brows spread across the entire utterance, and the negative mouth – very pronounced at first – persists at least until Will completes the explicit negative finger wave in (Figure 56). The facial expressions on eyebrow and mouth appear to contribute to the overall negative flavor of the utterance two evidential inflections: criticism, perhaps expressed by the eyebrows, and disagreement, apparently conveyed by the downturned mouth: that Frank doesn't know (although he, Will, *does*) how to identify

the stimulus he is meant to describe. On this analysis, the whole utterance is a combined critical negative commentary, propositionally signed and facially modulated.

7. Conclusion and summary

In this brief introduction to Zinacantec Family Homesign and its remarkably short history, I have tried to argue several things. First, I have provided evidence for borrowing into Z from the surrounding gestural practices of Tzotzil speakers, a striking “species jump” from speakers’ gestures into full sign language holophrases and lexemes. Second, I have summarized arguments made more fully elsewhere (Haviland 2013c, 2015) that such lexical signs in even a very young sign language can themselves become grammaticalized into syntactically more specialized functional and pragmatic formatives. Moving from the hands of Tzotzil speakers and Z signers to their faces, I then provided examples of apparent facial co-articulation, representing both affective and epistemic stances, in the signed performances of the Z signers. Finally, as preliminary evidence for the possibility of further syntactic development, I have argued that Z signing displays at least symptoms of the formal “decomposition” of facially expressive gestalts into simpler signed components (e.g., brow vs. mouth). Such components have the potential for further semantic specialization, allowing over time for more complex syntactic compositionality in the resulting co-articulated utterances.

More generally, I argue that the study of emergent sign languages is a unique but potent domain for historical linguistics, almost totally overlooked. That even a language which has existed for fewer than four decades can exhibit processes familiar from the history of languages of much longer duration is eloquent testimony both to the insistence of such processes in the ongoing evolution of human languages, and to their intimate links to communicative interaction. The evolution of Z also points to the importance of alternate, non-spoken modalities in understanding the human capacity for language writ large.

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