

This volume is the first to bring together researchers studying a range of different types of emerging sign languages in the Americas, and their relationship to the gestures produced in the surrounding communities of hearing individuals.

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EMERGING SIGN LANGUAGES OF THE AMERICAS
Edited by Olivier Le Guen, Josefina Safar, and Marie Coppola

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and Marie Coppola*

SIGN LANGUAGE TYPOLOGY



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Signs, interaction, coordination, and gaze: interactive foundations of “Z”—an emerging (sign) language from Chiapas, Mexico¹

John Haviland

This chapter develops the theme of coordinated (inter)action as a defining setting for the quintessential linguistic discursive form called “conversation.” Turn exchanges in a first-generation sign language—dubbed “Z” (for Zinacantec Family Homesign)—depend on manipulating mutual attention, often through gaze, whose uses are multiple in this young language community. Gaze plays a central role in how signers orchestrate interpersonal attention and manage synchrony and timing in their signing.

To anticipate my overall conclusions, I adapt Jakobson’s (1957) classic distinction between narrated events (E^n) and speech events (E^s) to distinguish in Z signing between narrated spaces (within which narrated entities can be gazed at and otherwise manipulated, if sometimes only virtually) and speech-event spaces (in which, minimally, speech act participants are available to be looked at, sometimes touched, and variously indexed). Managing gaze as a multifunctional semiotic vehicle is thus complicated by the need to distinguish conceptually, and perhaps also formally, between different spaces and targets for gaze within them. Such complications may be especially pressing and perhaps qualitatively different in signed as opposed to spoken languages. I shall link apparent emerging conversational structures in the young Z sign language to processes of visual attention and mutual monitoring.

¹ Material in this chapter was first presented as part of the *Primer Coloquio Internacional sobre las lenguas de señas emergentes de las Américas*, organized by Olivier Le Guen, Josefina Safar, and Lorena Pool Balam at CIESAS-DF, in Mexico City, 10 September 2015; at the U.C. Berkeley Linguistic Anthropology Workshop, Nov. 13, 2015; as part of a plenary presentation at the “Language Adapts to Interaction” workshop, organized by Sean Roberts and Gregory Mills at EVOLANG, New Orleans, LA. 21 March 2016, and at CoEDL at the Australian National University in Canberra, 20 October 2017. I thank participants at all these events, the editors of this volume, and especially one critical review from an anonymous reviewer, for crucial comments and suggestions.

1 Coordinated action and joint attention

A primary motivation for emerging linguistic structure (in Z, if not elsewhere) is the need to coordinate action interactively. This perspective combines a slight twist on Du Bois' (1985:363) aphorism that “grammars code best what speakers do most,” with the assumption that what speakers (and interactants) actually “do most” is produce what Herb Clark (1996) calls “joint action.” Accordingly, the “structure” of Z results directly from what the Z signers most use their newly invented language for and how, to achieve their ends, they interactively coordinate signing and other inter-related kinds of action. What structural properties of the emerging sign language allow them to accomplish this coordination? How do signers orchestrate mutual attention, and how do they manage synchrony and timing, especially in multi-person sign exchanges?

Attention is, of course, as much a social as a cognitive phenomenon; the very notion of “mutual (or joint) attention”—that is, attention somehow shared or distributed across individuals, however conceived—makes this plain. Moreover, organizing mutual attention in multiparty interaction implies as well organizing inattention (Goffman 1977) and exclusion, a point to which I return.

How gaze and visual attention are organized in Tzotzil interaction in general (and, as a consequence, in Z signing, too) suggests that aspects of the turn-taking machinery required for signed interaction may already be in place in non-linguistic interaction independent (or alongside) of speaking or signing. Adult Zinacantec daily life is filled with episodes of collaborative action among multiple participants who need not (and sometimes cannot) speak or sign to one another. Work, for instance, is often sequentially organized in ways strongly reminiscent of conversational turn-taking, involving alternating but carefully synchronized shifts in attention and coordinated action. To take one simple example, when two men alternate blows with wooden mallets to a net bag containing recently harvested corncobs, they collaborate in threshing the corn by “taking turns” in a finely coordinated synchrony, monitoring their partners visually and rhythmically synchronizing their individual movements. (See Figure 1.)

Of course, much more complex examples of coordinated alternations of action—both highly symmetric, as in the corn threshing case, or extremely asymmetric and regimented—are to be found in many daily routines of work and interaction (see Clark 1996), as well as in more specialized activities such as musical performances (Haviland 2011a), farming, or domestic tasks like cooking, cleaning, or washing. Sometimes such alternations can even involve the actions of only a single individual, as when a Zinacantec musician tunes an instrument—for example a guitar—taking the pitch from a nearby harp. He first plucks a harp string to get the needed pitch, then plucks the corresponding guitar string

while manipulating a stiff wooden tuning peg, repeating the sequence until he is satisfied with the instruments, and engaging his visual, aural, and tactile attention in slightly different, alternating ways.

Notably, there is clear evidence, in such contexts, that synchrony and appropriate timing of mutual activity are facilitated by gaze: the musician gazes from a particular harp string to another on his guitar; one man quickly checks the blow of his partner’s threshing mallet by glancing at it swiftly to gauge correctly his own stroke (see again Figure 1); a woman checks her neighbor’s placement of a tortilla on the griddle before placing her own; and so forth.



Figure 1: A Zinacantec man and boy threshing corn.

1.1 Turns and gaze

Probably the best studied case of structured alternation between actions the of multiple participants is conversational turn-taking, for which there have been at least two different analytical paradigms. One is based on “signals” and “rules” which regulate turn-exchanges (Yngve 1970; Duncan 1972, 1973, 1974). A later paradigm finds in conversational turn-taking an emergent expression of simple principles of interactive organization, providing the foundation for the cross-disciplinary field known as Conversation Analysis. The “simplest systematics” (Sacks, Schegloff, and Jefferson 1977) proposed suggests general mechanisms

underlying spoken conversation, taken as a primordial site for human interaction writ large.

A recent burgeoning of comparative empirical studies highlights apparent commonalities in the turn-taking exhibited by speakers of quite different languages (see Stivers, Enfield, Brown, Englert, Hayashi, Heinemann, Hoymann, Rossano, De Ruiter, Yoon, and Levinson 2009, Levinson and Torreira 2015, Levinson 2016, and the papers collected in Holler, Kendrick, Casillas, and Levinson 2016), especially in one specific respect: the exact timing of turn transitions between questions—defined functionally as effective “requests” for “information”—and answers, implicated in that functional definition as “responses” to such requests. Such studies suggest that human cognitive processing abilities involved in processing and producing conversation, shared across languages and communicative traditions, result in very similar precise timing at certain turn transitions. Such studies do not, however, offer a general account of turn-taking cross-linguistically. Indeed, some of the same researchers have argued for striking variation between at least apparent superficial patterns of turn alternations between different languages (Brown 1998, Brown and Levinson 2005). They have also linked specific features of conversational turn-taking both to conversational ecologies (culturally preferred bodily arrangements for interlocutors, to take just one example; see Rossano, Brown, and Levinson 2009) and to specific structural features of the languages themselves. For example, writing about Tzeltal, a close cousin to the Tzotzil language which surrounds the tiny sign community where Z has emerged, Penelope Brown writes:

Tzeltal conversational interaction is characterized by a large amount of “dialogic repetition” involving a particular addition to default turn-taking rules that has the property of highlighting new information (and therefore often verb roots) across adjacent turns at talk (Brown 1998:199).

Similarly, my own work on turn-taking in Tzotzil (Haviland 1996, 1997b, 2005, 2007, 2009, 2010, 2017) emphasizes a variety of stance-taking and evidential mechanisms which affect both the rate and the timing of turn-transitions, producing different “genres” of Tzotzil conversation (and flavoring or modulating phases within them) with quite different apparent patterns of turn distribution (as well as turn-overlap, interruption, and so forth).

Consider, for instance, two opposing poles of turn organization in spoken Zinacantec Tzotzil discourse. (a) Disputes in Zinacantan are generally mediated by a *jmeltzanej-k’op* or “dispute settler” whose job is to find a solution to fights about everything from deadly assault to a runaway spouse or a transgressed cornfield boundary. At one “conversational” extreme is the inevitable phase in every Zinacantec public litigation when representatives of opposing sides are allowed

by such a dispute settler to engage in a shouting match, an unconstrained free-for-all (Haviland 1997b). (b) At the other extreme is what I have called Zinacantec “small talk” (Haviland 2002b), the highly stylized and characteristically empty phatic exchange of turns, between exactly two Zinacantec acquaintances in a casual encounter.

In the former, many speakers may declaim simultaneously, completely overlapping one another for sometimes lengthy sequences of multiple, heated turns. Although they may be organized in teams (in the sense that several speakers may simultaneously represent the interests of one party, and several those of the other party), within a “team” so understood some turns may be aggressively directed at the opponents, others collaboratively at fellow team-members. The result is a verbal cacophony which an experienced dispute settler will usually allow to run its course before trying to impose a more regimented turn structure. At the latter extreme, in small talk, two speakers will alternate largely non-overlapping turns at talk, building on one another with highly repetitive, short utterances. In the former case, it is hard to represent graphically the volume and nature of turn exchanges—many speakers, all talking at once without let up. For the small talk case, Figure 2 diagrams the amount of alternating talk in a short characteristic example, representing as a single turn a stretch of uninterrupted speech by one speaker, and using the number of syllables uttered per turn as a rough measure of speech volume. It should be evident that turns are generally short, and more or less evenly distributed between the two conversationalists. (B, the older man, averages about 6 syllables per turn, whereas his younger ritual kinsman A averages about 4.2.)

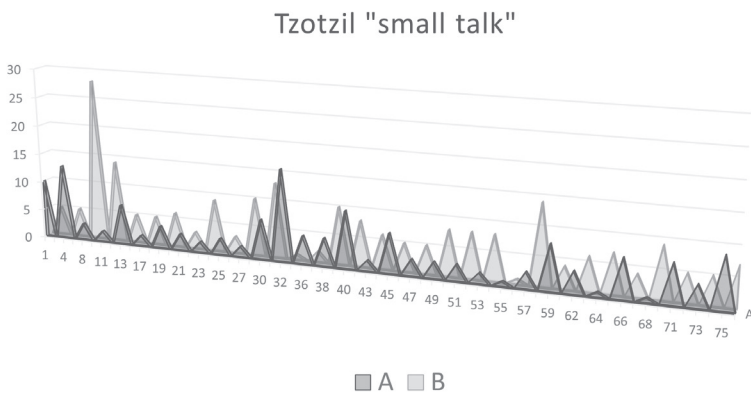


Figure 2: Turn exchanges in Tzotzil “small talk” for two speakers, A and B (x-axis = turn number; y-axis = number of syllables per turn)

Such a simple quantitative mechanism illustrates the interplay between turn-taking patterns and what may be seen as different speech genres (Bakhtin 1986). In a conversation between the same two men on another occasion, B is telling A about the history of their village. Now the distribution of turns is markedly different, as shown in Figure 3. B breaks his story up into turns that average 21 syllables each, a few much longer, some also considerably shorter. They are interspersed with A's responses, offered in chunks that average just under 2 syllables each. This is the typical pattern of Tzotzil narrative, even in multi-party conversation, in which one participant may tell a story or give news, with a designated responsive interlocutor providing back channel (Yngve 1970).

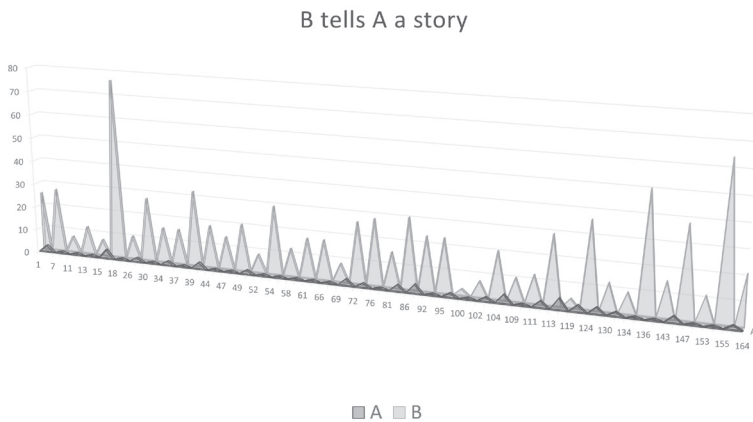


Figure 3: B narrates an episode in the history of the village to A ((x-axis = turn number; y-axis = number of syllables per turn))

Contrast the phases of different kinds of talk that, by these simple measures, distinguish segments of a much longer conversation between the same senior man, B, and a dispute settler A, whom B has gone to visit in order to complain about a land dispute with his in-laws. A sequence of almost 2000 turns from this dyadic conversation is represented in Figure 4.

The sheer volume of talk and its distribution between the two interlocutors suggests how the interaction unfolded through different turn-organizations. The first 30–40 turns were devoted to the empty exchange of pleasantries characterizes what was called “small talk” above. Then B launches into a long and impassioned explanation of his grievances, with quite long turns and largely noncommittal monosyllabic replies from the dispute settler A (from about turn 50 through turn 800). A breaks into B’s monologue with a series of substantive questions (turns 800–850 roughly), and then A himself delivers a long monologue

of about 300 turns (with B providing backchannel) outlining his own view of the situation. The next 500 turns or so represent a back and forth exchange of questions and answers via longish turns, with the bulk of the floor occupied by B. There follows a further sequence of about 300 turns in which B again returns to his complaints, after which A delivers his opinion and advice on the matter. (See Haviland [2017] for a fuller account of this interaction.) Even without considering the detailed mechanics of turn transitions in Zinacantec Tzotzil, there can clearly be quantifiably different patterns of turn organization, tailored, one presumes, to Zinacantec standards of appropriate ways to talk.

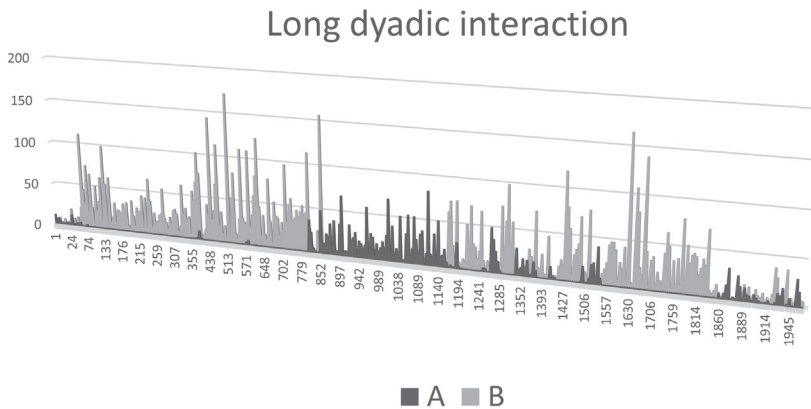


Figure 4: A multi-part conversation between two Zinacantecs, A and B (x axis = turn number; y axis = number of syllables per turn)

How might gaze be involved in the complex mechanisms of turn alternation in spoken conversation? The eyes are not only instruments of vision, but also powerful, plurifunctional, expressive articulators. Gaze is an important indexical signaling device in its own right, at least in part a result of the morphology of the human eye whose “white sclera ... has almost certainly evolved to enhance gaze detection” (Levinson and Holler 2014:3, citing Kobayashi and Koshima 2001). Gaze direction itself frequently alters the gaze of others. Since interlocutors are usually able, if not invited, to follow one another’s gazing eyes, gaze can thus be used to point, to refer, and otherwise to direct attention. That is, interactively, gaze is a potent device for manipulating the attention of interlocutors. Catching someone else gazing with your own gaze is—in some corners of North American life, at least—a familiar device for forcing gaze aversion.

Authors have also considered the role of both mutual and asymmetric gaze between interlocutors in opening and closing verbal channels or

otherwise orchestrating turns at talk. Well-known studies of eye gaze in spoken conversation (for example, Kendon 1967, Kendon and Cook 1969, Goodwin 1981, Rossano, Brown, and Levinson 2013, and Streeck 2014) emphasize the interactive expressivity, complexity, and delicacy of gaze in the sequencing of spoken turns. Gaze can explicitly mark both addressivity by speakers—addressee selection and interactive exclusion—and reciprocity by hearers, allowing hearers to signal both attention and disattention, deliberate, unintended, or otherwise pragmatically marked.

Recent studies of such matters (Rossano, Brown, and Levinson 2009, Rossano 2013) have questioned earlier claims, using both statistical and selective micro-interactive data to conclude that the link between turns at talk and gaze behavior is non-mechanical and variable. Rossano, Brown, and Levinson (2009), basing their observations on a selective corpus of “questions,” defined functionally as described above for the turn-taking studies, maintain that there can be significant differences between languages and communicative traditions in how regularly speakers gaze at one another or are “relatively gaze aversive” (Rossano, Brown, and Levinson (2009:231), as is said to be the case for speakers of Tzeltal, Tzotzil’s close cousin.

No careful studies of gaze in spoken Tzotzil conversation exist, to my knowledge, although even cursory attention to Zinacantecs when they talk would cast doubt on whether the label “relatively gaze aversive” can fairly apply to Tzotzil conversation. I have examined in some detail the videotape of the tiny “small talk” conversation described above (see again Figure 2). The two men are standing in a house courtyard, conversing while taking a short break from working in different fields. They certainly cannot be said to avoid looking at one another. Indeed, in this one conversation, by my own rough count at least, one of the men looks at his conversational partner in 69% of the spoken turns, and both men gaze at one another mutually in 38% of their turns. At the start of each new turn at talk, the speaker is gazing at his addressee just under 56% of the time; and similarly, the addressee gazes at the speaker 56% of the time. More revealing than these raw percentages is the fact that gaze is not evenly distributed over turns, even in this maximally phatic and minimally informative socializing, as can be seen graphically in Figure 5.

The two speakers are relatively close ritual kinsmen who have been out of touch for some years and who come together in this brief interaction somewhat by accident. Clear from Figure 5 is an evolving pattern of gaze: both men start off their encounter locked in close mutual visual attention to one another, which begins to give way as the main speaker moves his gaze elsewhere. There follows a phase in which both speakers are visually engaged with other aspects of their immediate environs or looking effectively nowhere (for example, when both men

look down at the ground, between turns 35 and 45). After this phase they begin again to monitor one another directly, partly—or so it seems to me—in preparation for closing the interaction. Rossano (2013) argues that gaze behavior is “mainly organized in relation to sequences of talk and the development of courses of action or ongoing interactional projects,” and, without offering more details, I assume such an analysis applies here as well. However, it should be clear, even from this crude summary, that Tzotzil interactants are neither wedded to nor averse to gaze in conversation, and that the relationship between turns at talk and mutual gaze seems neither mechanical nor predetermined.

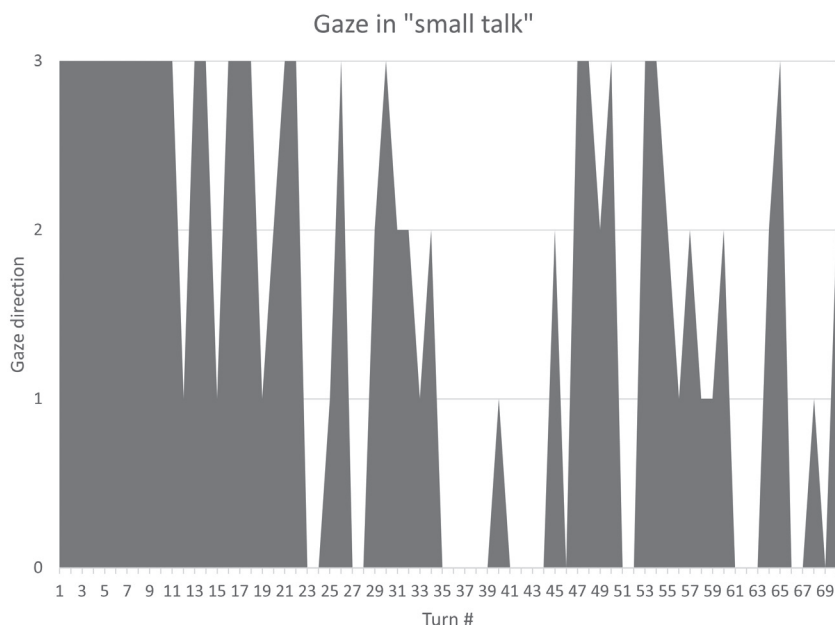


Figure 5: Gaze patterning in Tzotzil “small talk” (x-axis = turn number y-axis = gaze at turn inception, where 3 = mutual gaze between speaker and addressee; 2 = speaker gazes at unreciprocating addressee; 1 = addressee gazes at unreciprocating speaker; 0 = neither party gazes at the other)

1.2 Turntaking and gaze in sign language:

The organization of turn-taking in sign language is considerably less studied than in spoken language, in part, perhaps, because the ballistic dynamics of

signed utterances are markedly different from the acoustic dynamics of spoken turns, which have (relatively) clear beginnings and ends. One perspective on the timing of signed turns can be found in the research of Coates and Sutton-Spence (2001) who argue that informal signed conversation between friends is characterized by two “key features”: “overlapping talk and joint construction of utterances” (Coates and Sutton-Spence 2001:518). They challenge claims (1) “that signers will only sign if they are sure their addressee(s) can see them” and (2) “that addressees maintain their gaze on the (solo) signer” (Coates and Sutton-Spence 2001:519), citing instances in which “signers sign even when there is clear evidence that no-one is attending to them” (Coates and Sutton-Spence 2001:520) and postulating a kind of Gricean principle of collaboration for signed conversation:

“Participants will assume, all other things being equal, that they are all attending to each other at all times, even though at any given time the gaze has to be directed at one signer rather than another” (Coates and Sutton-Spence 2001:525).

By contrast, in a groundbreaking study, McCleary and de Arantes Leite (2013) dispute such characterization of turn-timing in signed conversation, largely by applying analysis of the dynamics of speakers gestures (Kendon 1972, 1980, 2004, especially as reformulated by Kita, van Gijn, and van der Hulst 1998) to the ballistics of sign movement.² In much the same spirit, but taking further inspiration from the recent cross-linguistic studies of turn-taking mentioned above, De Vos, Torreira, and Levinson (2015) perform similar parsing tricks to achieve comparability between signed and spoken turns. For example, they suggest that the timing of signs should focus not on preparatory movements or retractions,³ but instead on what Kendon calls the “strokes” of a signed phrase. These are the parts of signers’ movements that contain “propositional content as expressed by the movements of the hands” (De Vos, Torreira, and Levinson 2015:3). The authors thus propose to analyze the timing of signed turns as defined by “stroke-to-stroke turn boundaries” (De Vos, Torreira, and Levinson 2015:11). These authors, following the paradigm of similarly focused previous studies, also restrict their attention to a corpus of largely dyadic functionally and sequentially defined set of “question/answer” sequences (which they suggest defines a kind

² For an independent application of Kendon’s gestural scheme to Z signing see Haviland 2011, 2014.

³ In Kendon’s formulation, a gesture phrase has a central “stroke” which is characteristically preceded by a preparatory movement, during which the hands move to an appropriate position to perform the stroke, and then followed by a retraction or return to a neutral “rest” position.

of “baseline” for permissible overlaps or gaps between turns). They find that the stroke-to-stroke turn-timing results for sign-languages correspond very neatly with those of the cross-linguistic corpus of spoken conversation their colleagues have examined (see Stivers, Enfield, Brown, Englert, Hayashi, Heinemann, Hoymann, Rossano, De Ruiter, Yoon, and Levinson 2009).

We know that the eyes, in sign as in speech, can be effective referential indicators, part of the inventory of several readily available pointing devices.⁴ For a visual medium like sign—evolved for and by deaf interactants who have little or no access to acoustic signals—directed gaze takes on additional importance in interaction, as the primary means by which people access one another’s signing in the first place (see Emmorey, Thompson, and Colvin 2009, Thompson, Emmorey, and Kluender 2006), and also by which they can display deliberate non-reciprocity (for example, by looking away from a signer). In one of the earliest studies on gaze in sign language, Baker (1977:223) refers directly to Kendon’s research on gaze in speech, to make the deceptively obvious (although, as mentioned, controversial) claim that:

[s]igned conversation differs uniquely from oral conversation in that a speaker cannot initiate a turn until the desired addressee looks at the potential speaker, i.e., an interactant cannot “say” something (and be “heard”) if the other interactant is not looking. This single constraint makes eye gaze one of the most powerful regulators in Sign since it determines when an interactant can speak (Baker 1977:221).

With respect to turn-transitions, Baker explicitly argues that a signer’s gaze at an addressee is linked to turn endings (“to check on addressee decoding” [Baker 1977:223]); and correspondingly that an addressee’s gaze at signer at turn end may be a “speaker shift regulator” whereas not gazing at the speaker may be a speaker “continuation regulator” (Baker 1977:227),⁵ a theme taken up by several researchers who consider how turn transitions are centrally managed via gaze in multiparty signed interactions (Van Herreweghe 2002, Mather 1996).

Gaze is also linked in the literature to various aspects of sign-grammar, such as agreement marking (Baker and Padden 1978, Thompson, Emmorey, and Kluender 2006). It has also been associated pragmatically with repair initiation, as in the so-called “freeze look” of Argentinian Sign Language (Manrique and

⁴ Compare Enfield (2001), Cooperrider, Slotta, and Nuñez (2018).

⁵ Baker also connects gaze in sign language to a number of what she calls “sociolinguistic conventions” of deaf etiquette—about where and when to gaze, or about how to signal to a signer that another interactant wants his or her attention.

Enfield 2015).⁶ Moreover, as Engberg-Pedersen (2015) has argued, the eyes are versatile and multi-faceted sign-articulators, serving not only to regulate turns and check mutual understanding between signers and addressees, but also as important semiotic vehicles for both establishing and shifting between multiple possible “perspectives” in sign formation. She summarizes different perspectival uses of gaze as follows:

When signers have eye contact with their addressee(s), they take on their role as sender or narrator [. . .]. Through eye contact with the addressee, they can keep track of the current speech situation and check the addressees understanding. Signers also take on the role of sender/narrator when they use their gaze for reference tracking, i.e., looking briefly in the direction of a referent’s locus. This happens often in the beginning of a sentence when the topic changes to a new referent. Configurational or locational gaze is seen when signers describe a complex static configuration or the relationship between two or more referents by representing them in space; it is as if they direct addressees’ gaze to the representation itself. The final type of gaze that indicates the sender/narrator is signers’ looking away in no particular direction at a major syntactic break or when they hesitate (Engberg-Pedersen 2015:418).

Note that prolonged mutual gaze between signing interlocutors also enables use of other expressive visible palettes, notably interlocutors’ faces, which are centrally integrated into the multiple simultaneous articulations of sign.

2 “Z”

One of the few contexts in which to observe naturally emerging new human languages is in communities whose deaf members are sufficiently numerous and multi-generational to fuel the rise and development of spontaneous communication systems based on a visible modality. This study deals with one such case, a first generation sign language which I call Zinacantec Family Homesign or “Z” for short, described in more detail in the sociolinguistic sketch that accompanies this volume. Crucially, in the Z language community there are only three deaf signers—Jane, Frank, and Will, all siblings—along with three other fluent hearing signers: another sibling, Terry; a niece, Rita; and Jane’s young son Vic.

Such a tiny first-generation sign language has a special place in recent work on emerging sign languages, bridging, as it does, the “resilient” language-like

⁶ Compare the “prolonged gaze” described by Levinson (2015) as a conventionalized repair-initiator in spoken Yélí Dnye, the language of Rossel Island.

features of what are conventionally called “homesigns” (Feldman, Goldin-Meadow, and Gleitman 1978, Goldin-Meadow, Butcher, Mylander, and Dodge 1994, Goldin-Meadow 2003, 2012, Fusellier-Souza, 2004, 2006, Coppola and Newport 2005, Coppola, Spaepen, and Goldin-Meadow 2013, among others)—creations of individual deaf children (who sometimes carry these homesigns to adulthood) in interaction with their hearing families—and the kinds of grammars characteristic of both young and established sign language communities (see Kegl, Senghas, and Coppola 1999, Senghas and Coppola 2001, Zeshan and DeVos 2012; Nonaka 2004, 2009; Sandler, Meir, Padden, and Aronoff 2005; Meir, Padden, Aronoff, and Sandler 2007; Nyst 2007; and deVos 2012, among others).

Z is of particular interest in the context of the introductory discussion above of turn-taking and gaze in sign languages. Given the frequent, if disputed, claims that signed utterances *depend* in crucial ways on reciprocal gaze between interactants, and given the claims in the literature about “gaze aversion” in a language closely related to the surrounding matrix language, Tzotzil, which envelops the tiny Z signing community, an emerging sign language like Z has compelling interest for discerning interactive mechanisms that may motivate conversational structure. Moreover, as hopefully will be clear from the empirical data I present, gaze seems to be of central importance in the patterns of Z conversational interaction, if not in more syntactic features of phrase and argument structure. I concentrate here on this particular embodied aspect of Z signing, without dismissing the potential relevance of other features of utterance “composition” (Enfield 2009).

The youngest Z signer, Vic, was 10 months and 19 days old and actively beginning to acquire Z signs when I started to work in earnest with the Z family. By then, one could already see Vic’s developing communicative routines. For example, in my earliest films of interaction among the Z signers it appeared that Vic already used pointing gestures to indicate his desires, something familiar from classic studies of language acquisition and socialization (e.g., Werner and Kaplan 1963; Carter 1975; Bates 1976, 1983, Bates, Thai, and Whitesell 1989; Acredolo and Goodwyn 1988; Dobrich and Scarborough 1984, Lock 1980, 1993, Lock, Young, Service, and Chandler 1990), including work with Tzotzil-speaking infants (Haviland 1998, 2000; de León 1998).

Strikingly, Vic’s early pointing gestures, as well as his gaze direction, were also routinely interpreted by his caregivers as volitional conversational turns (Lock 1980). The best evidence for such an interpretation is how adults reacted to and, indeed, manipulated Vic’s gestures. In an early film the deaf signers were having a meal while I spoke with their father. Vic was asleep at the beginning of the film, but he eventually woke up, and his mother Jane brought him into the room where the rest of us sat. The ensuing sequence of events illustrates

how Jane appears to teach Vic about the appropriateness (or lack thereof) of a communicative social act.

First, let me explain the “transcriptions” or diagrams which illustrate the rest of this chapter. The video recordings on which the analysis is based, and thus the transcripts, allow a maximum timing granularity of 30 frames per second. The video stills are labelled with individual letters (a, b, c etc.) and they are linked to a timeline, with hashmarks (variably graduated, sometimes representing individual frames, sometimes 10^{ths}, 15^{ths}, 20^{ths} or even 100^{ths} of a second). On the timelines, corresponding letters indicate the precise time of each video still. Two other kinds of annotations may also be linked spatially to the timelines. The first are short representations of the ballistic phases of unfolding individual signs (Kendon 1972, 1980, 2004; Kita, van Gijn, and van der Hulst 1998; Haviland 2011, 2014; McCleary and de Arantes Leite 2013; De Vos, Torreira, and Levinson 2015), written below the timeline and synchronized with it. These annotations mark a preparatory motion (shown, following Kendon 2004:114 ff., with a string of tildes [~~~]); a main stroke (shown with a string of asterisks [****], punctuated by slashes [/] to indicate distinct phases of movement within the main stroke, sometimes repetitions, and also “holds”—which Kendon represents with underscored asterisks but which I represent in these diagrams simply with a sequence of underscores [____]); and, where relevant, a retraction to some sort of rest position (shown, again following Kendon, with a sequence of full stops and dashes [.-.-]).⁷ The ballistic notations for individual putative signed phrases are enclosed in square brackets. Individual signs are often glossed, below the ballistic indications, using the convention of capitalized English words as “sign labels”⁸ for putative signed units, occasionally with additional clarifying notes following a semicolon or, for relevant aspects of the sign form, in square brackets. Certain putative grammatical elements also appear in sign glosses, written in italicized capital letters: indexical signs (abbreviated *IX*, and often accompanied

⁷ Recent work by Austin German (2018) demonstrates that separate ballistic analyses of Z signs must be applied to simultaneous articulators, most importantly the signer’s two hands which can move independently, but I have not attempted to apply this insight to the examples diagrammed in this chapter.

⁸ The “sign labels,” of course, have the almost fatal defect of being categorically and denotationally indeterminate, especially when they reflect purported “referents”—in the case, for example, of apparently referential points and gaze. Thus the perennial ontological problems that Quine (1960) pointed out hypothetically over half a century ago as applying to “*radical* translation, i.e., translation of the language of a hitherto untouched people” (2013[1960]:25) plague my analysis of Z, a new language-in-the-making which, while not exactly “untouched,” is still not immune to the issues Quine raises.

by an explanatory ‘=’ followed by a putative referent), “size and shape specifiers” (abbreviated *SASS*, and sometimes followed by ‘:’ and descriptive notes); and various apparent negative formatives (abbreviated *NEG*). A second sort of annotation appears in “gaze lines,” which use a modified form of the gaze annotation introduced in Goodwin (1981). Full stops (...) along the gaze timeline show when an individual appears on the corresponding video to be moving his or her gaze towards a particular target; the focus of the target itself is written on the timeline starting at the point where that person’s gaze⁹ appears to reach it. A sequence of underscores (___) show that a person’s gaze continues to be focused on this target for the timespan indicated. Strings of commas (,,,) indicate when gaze is being withdrawn from a locus (and not clearly moving to a new one, or perhaps returning to some neutral, unmarked position). Such diagrams are clearly a deficient (and far less legible) alternative to scrutinizing actual signing (or video recordings of it), but they at least provide detail sufficient to enable certain discoveries, especially about synchronicity. The individual timelines plus their annotations thus represent a kind of miniature musical score linking the individual still frames to concurrently unfolding sequences of action.

As Vic appeared on camera, strapped to his mother’s back, his uncle Will was drinking from a soft drink bottle (see Figure 6). Will looked up and appeared to engage his young nephew’s gaze (a), holding it for about half a second before beginning to turn away (b). Within less than a tenth of a second, Vic’s extended index finger came up (c), and he appeared to “request” some of the soft drink by pointing at his uncle’s bottle (d) for almost a full second before retracting his arm (e).

⁹ As those who have paid close attention to gaze behavior will recognize, there is often a clear, and potentially significant, difference between where the *eyes* appear to be directed (which is what my annotations in this chapter try to capture) and where the *face or head* is apparently turned. I have not tried to differentiate such subtleties here, although they are probably relevant to Z signing as well as elsewhere.

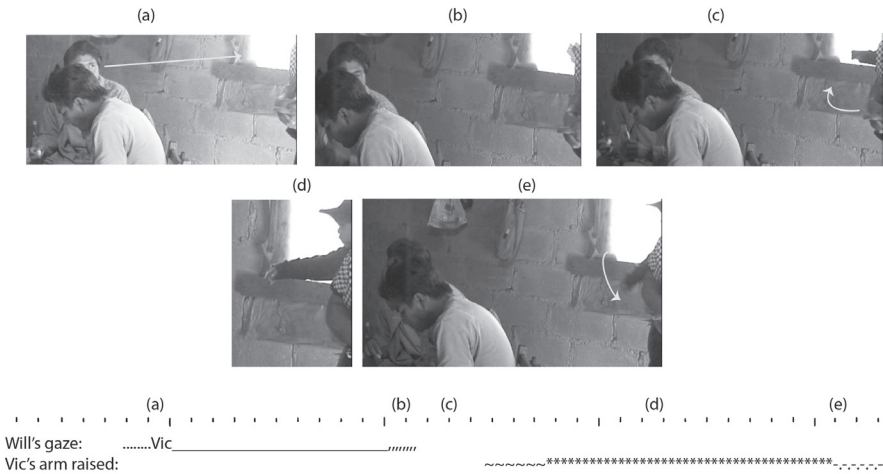


Figure 6: Will gazes at young Vic, just offscreen on his mother's back, and as Will looks away, Vic appears to point at Will's drink. (Timeline graduated in 20ths of a second.)

Notable here is what one might call a proto-turn-taking system. Vic's engagement with Will seemed to begin with Will's prolonged gaze at the infant, which lasted half a second. When Will's gaze was withdrawn, within less than a tenth of a second (and perhaps responding to Will's lack of attention) Vic started to raise his arm, forming what appeared to be a pointing gesture. He continued to hold the outstretched arm for almost a second before dropping it.

Only half a second later, however, the child appeared to point again (see Figure 7). As Will started to put the top back on his bottle, Vic once more stretched his arm forward in a point (a), and then also leaned his body forward more insistently (b). Whether in response to Will's refusal to share his bottle, his disattention to the child, or for her own reasons, after letting him point for about a second, Vic's mother Jane seemed to "shush" the child by reaching up (c), grabbing his hand (d), and pulling it forcibly down (e).

Note that although it ended in suppression, Vic's communicative intention was nonetheless both recognized and incorporated into a clear sequence of interlocked turns or moves, involving mutual (if asymmetric) attention and communicative action between Vic, his uncle Will, and his mother Jane. (See Figure 8.) Schematically, there is (1) initial engagement, via mutual gaze, between Will and Vic (a), broken when Will looks away (b). Then (2) Vic makes a first request of Will, which the latter refuses by continuing to look away (c-d). Next (3) Vic repeats his request, more insistently (e-f). Finally, (4) Jane shushes the infant (g-h).

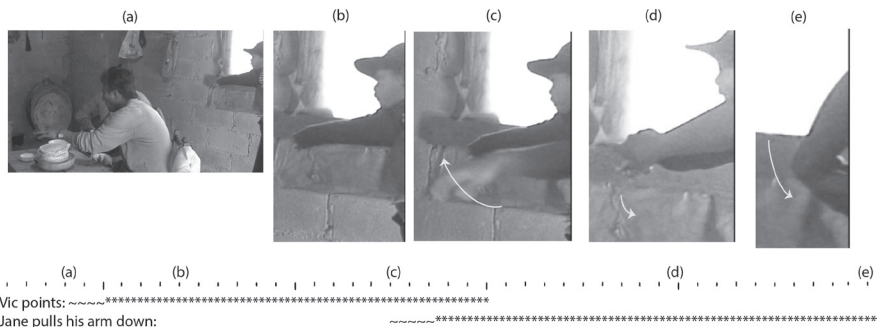


Figure 7: Jane pulls Vic’s pointing arm down, effectively “shushing” him. (Timeline in 20ths of a second.)

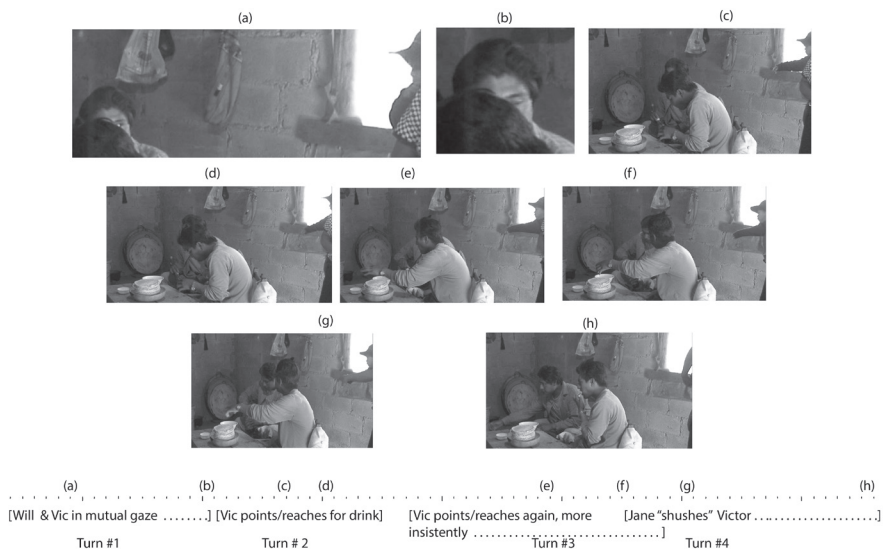


Figure 8: Vic points and Jane shushes him, full sequence. (Timeline graduated in 10ths of a second.)

One month later, just a week before his first birthday, Vic’s gestural routines were more elaborate, apparently responsive to the conversational surround, and clearly interpreted by adults as deliberate signing (see Haviland 2000). At one point during our first elicitation session, Terry—the hearing sibling of the deaf signers and herself a fluent signer—was helping me explain to her brothers a pilot elicitation task I was about to inflict upon them. Vic was strapped to her back, asleep, but he woke up as the session proceeded. Vic watched with intense interest as his aunt Terry instructed Frank, seated next to her, to describe what

he saw on a computer screen to his brother Will, who was seated facing him (see Figure 9).



Figure 9: Terry, with Vic on her back watching, tells Frank to sign what is on the computer screen to Will, at whom she points

After watching this performance Vic himself suddenly began to sign (see Figure 10), in a sequence that started with his gazing at the computer screen (a). He then raised his eyes to Frank (b), staring at him with a small smile for more than a second, then glanced back at the at the screen (c), while raising his arm in what looked like a pointing gesture at Will and turning his gaze back to Terry, his apparent addressee (d).

The details of the interactive exchange that follows show that quite delicate mechanisms for managing turns and turn-transitions were seemingly already part of Vic's communicative repertoire at this very early age. (See Figure 11.) After mimicking Terry's instruction to Frank and Will, Vic waited for Terry to acknowledge his own performance, staring at her with an inquisitive face and head tilt as he continued to point with his outstretched finger (a). Terry, in the meantime, appeared to check both of her previous addressees by gazing first at Frank (a) and then at Will (b).

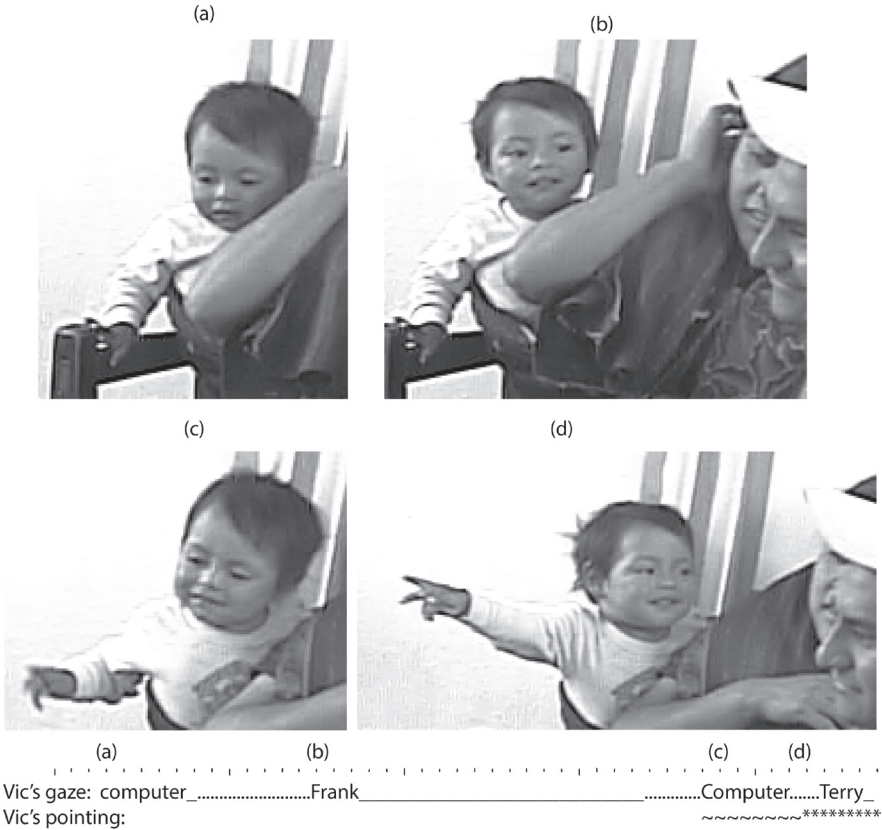


Figure 10: Vic “repeats” his Aunt Terry’s immediately prior utterance. (Timeline graduated in 20ths of a second.)

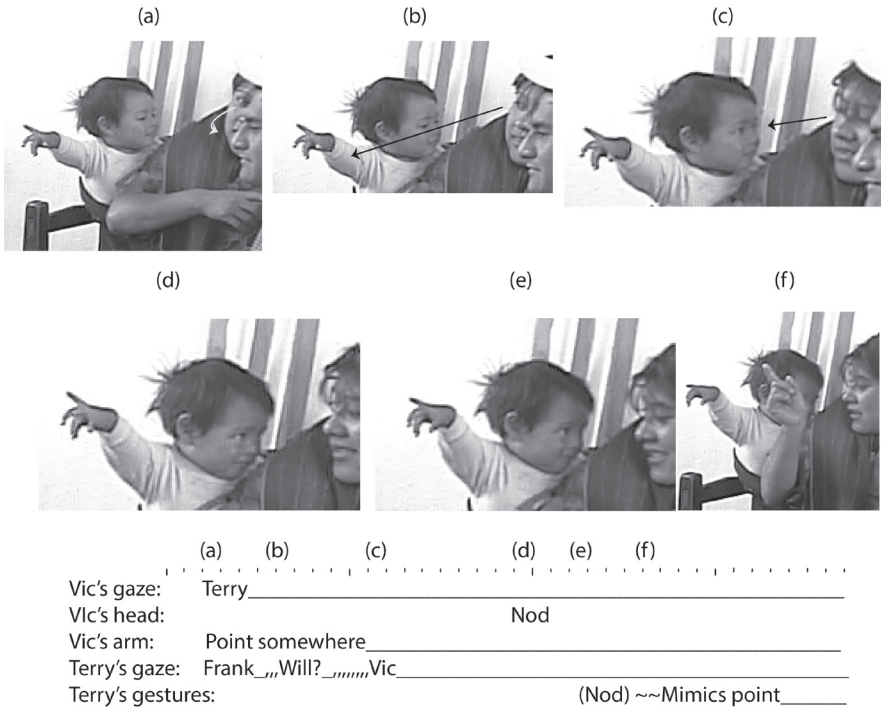


Figure 11: Vic nods at Terry and points, and Terry reciprocates. (Timeline graduated in 10ths of a second.)

It is interesting to juxtapose what happened next in the interaction with the spoken Tzotzil conversation that had preceded this first eliciting session in my Z research. The deaf siblings' late mother had expressed her concern that young Vic would—like his mother and uncles—never learn to speak Tzotzil, and that he should not be encouraged in his acquisition of Z signing, at this tender age. When Terry finally gazed down at Vic, they exchanged nods ([d] and [e]), and Terry evidently repeated Vic's pointing gesture, opening her mouth slightly (f). (It is not clear what Terry thought Vic was pointing at, or what, indeed, she herself was indicating.) After this collaboratively constructed exchange of signed or gestured turns, Terry also directly addressed Vic in Tzotzil with a metalinguistic command, "No, child, don't learn to do that!" She followed with a remark to her mother: "Look! He's learning [to sign]!" The mother's scolding response—"Why do you show him? He'll only keep trying to learn [to sign]"—elucidates the ambivalence the family felt at the time about whether it was desirable for Vic to sign at all.

2.1 Z turn taking: gaze and mutual attention

The infant Vic during the first year of his life thus seemingly used pointing as part of his early utterances, both to indicate his apparent interest in objects (e.g., his uncle’s soft drink) or to repeat his caregiver’s references to co-present others. If reference is a process by which one interlocutor induces another to pick an entity of interest out of a contextual surround, then—ignoring many complexities (e.g., Lock, Young, Service, and Chandler 1990, Haviland 2000, Lizkowski 2006, Lizkowski, Brown, Callaghan, Takada, and de Vos 2012)—we can take indexical manipulation of an interlocutor’s attention to be an essential and quite early element of initial putative attempts to refer. Reference can be achieved indexically via some sort of indication, whether by inducing an interlocutor to redirect his or her attention—for example by “pointing”—or by bringing something into focus within the interlocutor’s existing span of attention (by highlighting it, or by moving it there—what Clark [2003] calls “placing”). Under appropriate circumstances, one can refer to an entity simply by directing one’s gaze at it.

I shall in the remainder of this chapter exhibit possible origins of conversational structure in the emerging Z sign language by linking such structures to visual processes of mutual monitoring and attention in the interactions. Consider another extract from the first film I took as part of my extended study of Z in 2008 when I filmed the signers during a meal. After many years of reluctance, I had finally asked the signers’ father, an old friend, about my trying to work with his deaf children on their language. As he and I talked, my video camera standing on a tripod was trained on the three deaf siblings finishing a meal. With traditional Zinacantec hospitality, Jane had suggested that they buy a soft drink to share with me, and in the segment of the film to be discussed she was serving the soda, Zinacantec style, in a shared cup, passed from person to person. I was almost totally oblivious to what Jane and her brothers were doing and saying. Indeed, the signers were in part indulging in a variety of “secret speech”—a form of highly undemonstrative signing which family members say the deaf signers use with each other when they want to avoid “eavesdropping.” (Terry calls it “*chk’opoj ta sat no’ox*, talking with the face alone.”) It was only several years after I began work on Z that I returned to this sequence, since originally it had hardly looked like comprehensible “conversation” to me at all. The hearing sister Terry, a fluent signer, who was not present on the day of the filming, gave me her Tzotzil interpretation of their short conversation. She explained that Jane criticized her brother Will for taking too long to drink, since others were waiting for the cup; that Frank then told Will that Jane was impatient with him and that he should drink up fast; and that Will then mocked his sister’s impatience.

I was initially baffled about how Terry had extracted her glosses from the signers' behavior. As I hope to show here, however, close inspection of the video reveals how the interaction unfolds.



Figure 12: The soda pouring scene

At the start of the scene, Jane (on the left in Figure 12) is holding the bottle of soft drink, watching her father and me (off screen to the left). She has already served her brother Will, who is holding his cup, and she is waiting for him to finish his share so she can retrieve the cup and serve the rest of us. In the lapse of just over half a second, she performs a quick visual dance (see Figure 13), glancing first at Will (a), then at the cup in his hand (b), and then at her older brother Frank (c), who is dipping his finger in the salt bowl as he eats. As she appears to watch Frank touching the salt (d), she reaches down to touch Will on the leg apparently to try, unsuccessfully in the event, to get his attention. That is, Jane surveys the situation, noting several relevant facts (that Will is still drinking the soda in his cup, and not apparently aware of her agenda) without really managing to engage an interlocutor's attention, and then she tries a direct conventionalized tactile "Hey!" sign or turn initiator (Haviland 2015) in an unsuccessful attempt to initiate a signed exchange with Will.

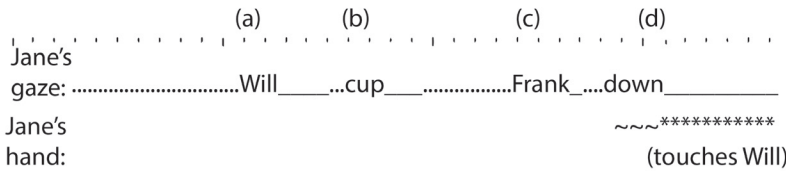
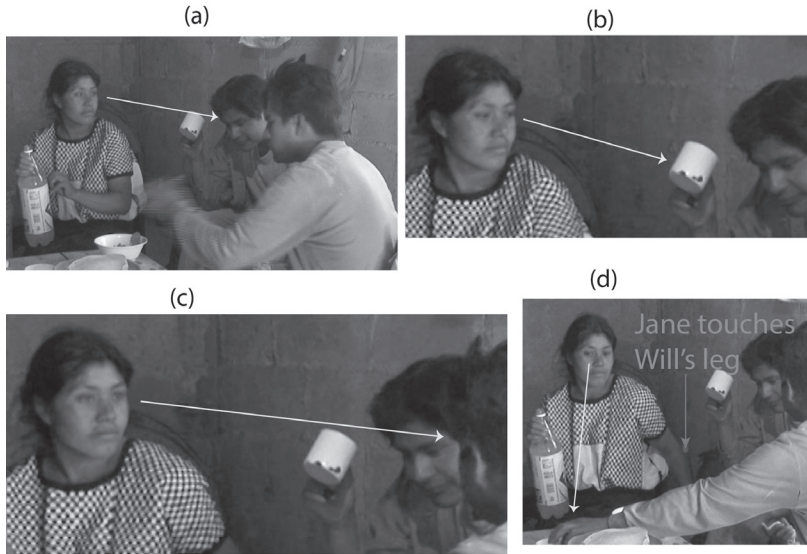


Figure 13: Jane glances at Will, his cup, Frank, and at Frank's hand while trying to get Will's attention with a poke. (Timeline shows individual frames at 1/30th of a second.)

Instead, as shown in Figure 14, after another quick glance at the cup (a), Jane goes on to stare fixedly at Frank (b). Once she has attracted his attention, apparently just by fixing her gaze on him (smiling slightly and pursing her lips when he begins to attend to her—see [c]), for the next 2 seconds she engages in a tiny expressive routine with her hands and eyes. She taps on the bottle three times and smiles at Frank (d), then glances down at the table (where I think she wants the cup to be placed so she can pour more soda into it—see [e]), and then very swiftly at the cup in Will's hand (f). She then fixes her eyes on me—the guest—for about half a second, with a little nod (g), before returning her smiling eyes to Frank (h). An approximate rough gloss for the entire sequence, which is punctuated by gazes at her interlocutor, would be something like, “I need to serve this soda to our guest over there (and I need Will to give me back the cup to do so).” Note that most of the communicative work—both to organize turns and within her single longest turn—is performed by gaze. First she initiates a turn via prolonged gaze eventually reciprocated by Frank. Then she performs a quick

chain of references, without intervening pauses: first deictic taps on the bottle, then a series of referential gazes: (1) to pick out a locus for serving the soda, (2) the needed receptacle, and (3) the desired recipient, before returning a smiling gaze to her interlocutor.



Figure 14: Jane to Frank: “I need to serve soft drink to our guest here...” (Timeline graduated in 20ths of a second. Timing for Frank’s gaze is approximate, as his eyes are not visible on the video.)

Still holding Frank’s attention, Jane now launches a more specific complaint about Will (Figure 15), performed first with a sidelong glance at the cup in Will’s hand as her smile fades (a), then a pouting face along with a dismissive complaining rapid

toss of the hand meaning ‘drink’ (b-d), followed by a more elaborated version of the same sign for ‘drink’ accompanied by an accusatory glance at Will (e-g). Terry glossed the entire sequence as, “Will is taking too long to drink.”

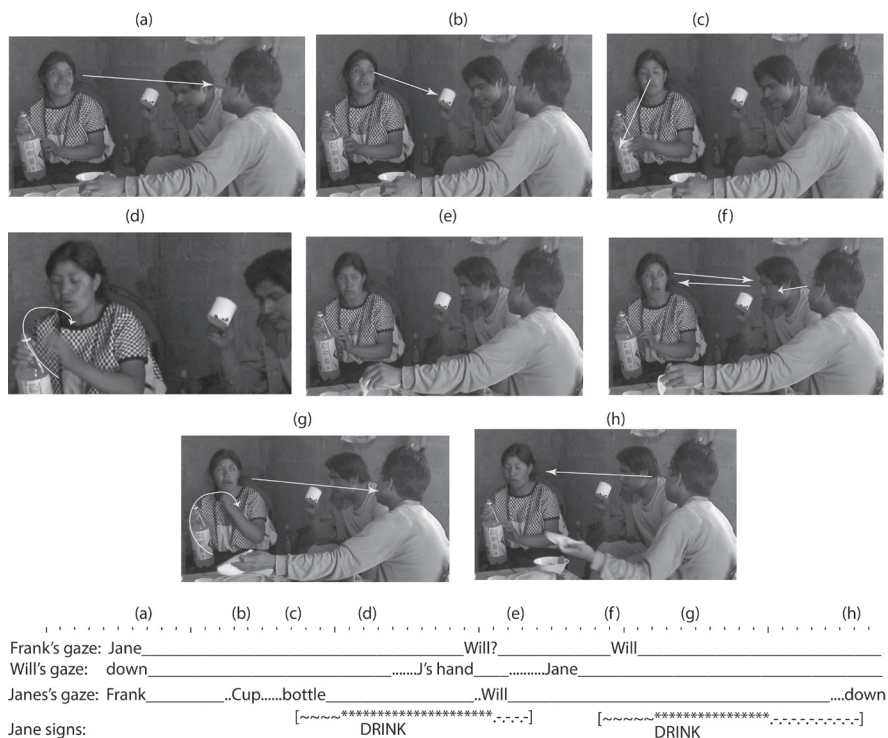


Figure 15: Jane to Frank: “Will is taking too long to drink.” (Timeline graduated in frames.)

Figure 15 also makes apparent several other features related to the discussion above about signed turns. In this diagram, manually signed phrases are subdivided into a preparatory movement, a main stroke, and a retraction or dissolution of the sign, to allow close inspection of the timing of movements. The diagram also allows the reader to calibrate such signed elements with changes in gaze. For example, precisely at the moment (e) after Jane finishes the stroke of the somewhat dismissive reduced hand toss glossed as “drink” she also starts to turn her gaze to Will, who in turn appears to have noticed her signing hand and then to move his gaze up to her face. Although it is somewhat unclear on the video, Frank also appears at that same point to turn his gaze from Jane to Will himself, as if to anticipate or perhaps to invite some reaction from Will to Jane’s criticism.

Jane goes on to repeat directly to Will her pouting gripe that he is drinking his soda too slowly.

Now consider Figure 16. When Jane finishes her complaint, she seems to lower her eyes to avoid further reciprocal gaze with her brother Will (a). Will also then drops his eyes and displays a thinking face—looking into a kind of empty or “nowhere” space (b)—as if he is trying to work out why she is aiming such displeasure at him. He then turns to look at his brother Frank (c-d) and asks him (with an interrogative frown) what it’s all about (e).

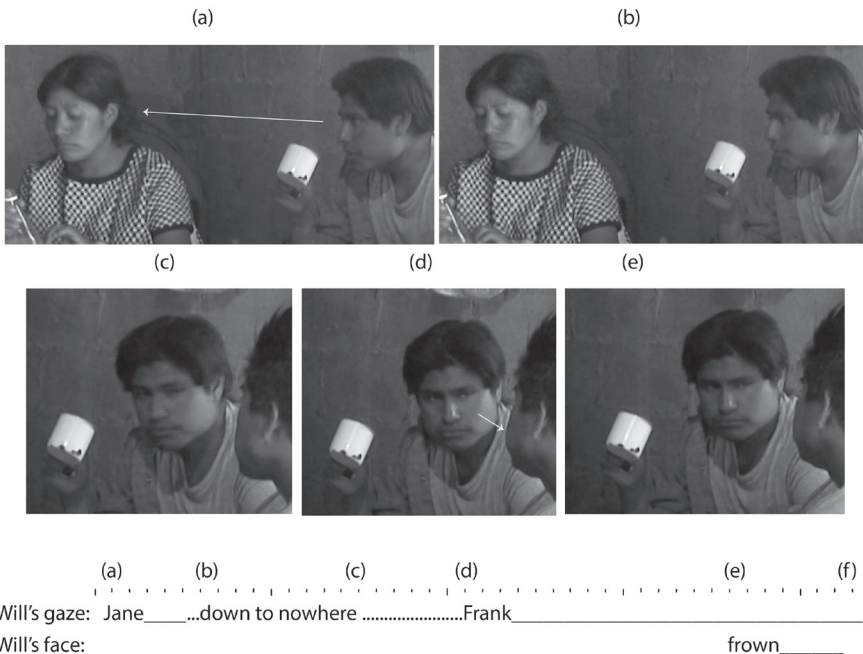


Figure 16: Will stares at nothing, trying to understand why Jane is annoyed with him, and turns to ask Frank about it. (Timeline graduated in 20ths of a second.)

With a manual sign (Figure 17 a-c) Frank tells the frowning Will that Jane wants him to hurry up and drink to return the cup. Will, still apparently confused, stares fixedly at Jane (d). To elaborate further Frank touches Will’s arm (e) to get his attention back (f).

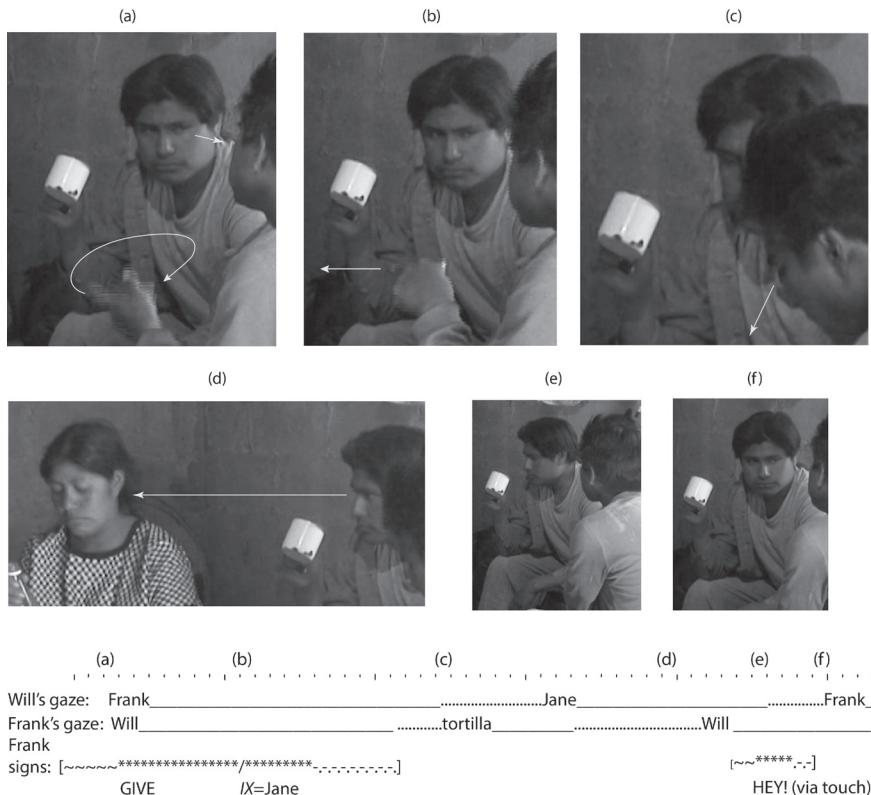


Figure 17: Frank signing to Will, “She wants you to drink up.” (Timeline graduated in 20ths of a second.)

After he returns his attention to his brother, Will stares at Frank’s signing hand (Figure 18 a). Frank signs that Jane wants Will to give her back the cup immediately so she can serve the others (b). Jane watches the end of Frank’s explanation (c-d), still with an accusatory expression and a tentative gaze at Will (e). For his part, given Frank’s explanation, Will seems momentarily to consider what to do, staring into space again for about 1 second (Figure 18 e).

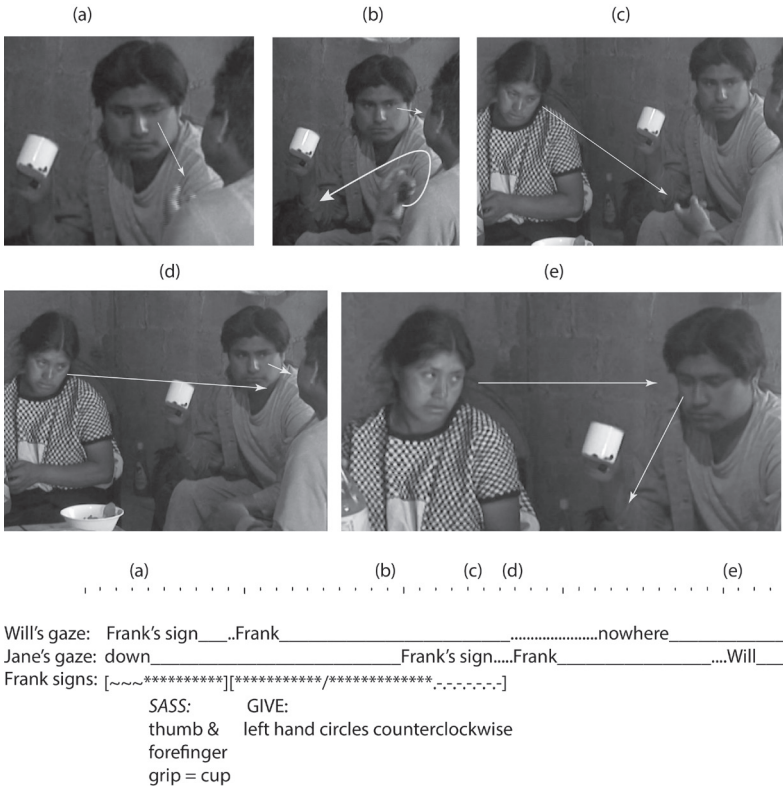


Figure 18: Frank explains a 2nd time that Jane wants his cup immediately, and Frank takes this information in. (Timeline graduated in 20ths of a second.)

Finally, brother and sister meet each other's gazes (Figure 19 a-b). Somewhat grudgingly (taking almost two seconds to do it), and with a faint derisive grin growing on his face, Will places his cup quite deliberately on the table in front of Jane, fixing his eyes on her the whole time (c-e). With a full pout Jane looks down (f) and begins to refill the cup with soda to serve her other guests.

As shown in Figure 20, taking his hand from the cup, Will turns back to Frank (a) to launch the final, evaluative coda to the whole short interaction. Frank meets his gaze (b), and Will leans back in his chair with a broad smile and an exaggerated shrug (c) while pointing at Jane (d). Terry glossed this as: *vi x`elan tzpas le`e* (roughly: "look how ridiculously she behaves!"). He finishes his remark (joking with Frank as Jane, glancing up at him, tries hard not to break into a smile herself [e-f]) by pounding several times on his right knee with a clenched fist (f-g), i.e., "I should hit her."

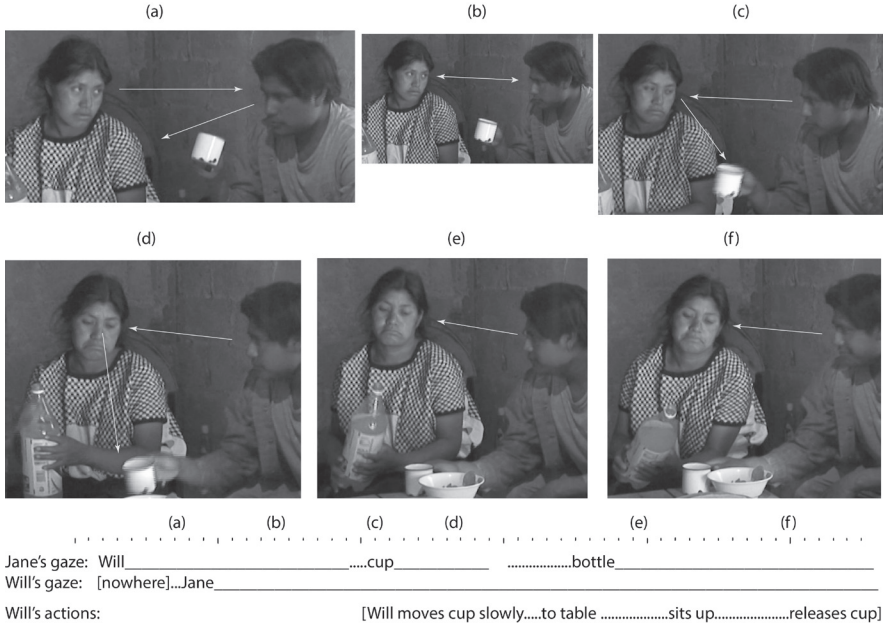


Figure 19: Will slowly returns the cup to Jane. (Timeline graduated in 20ths of a second.)

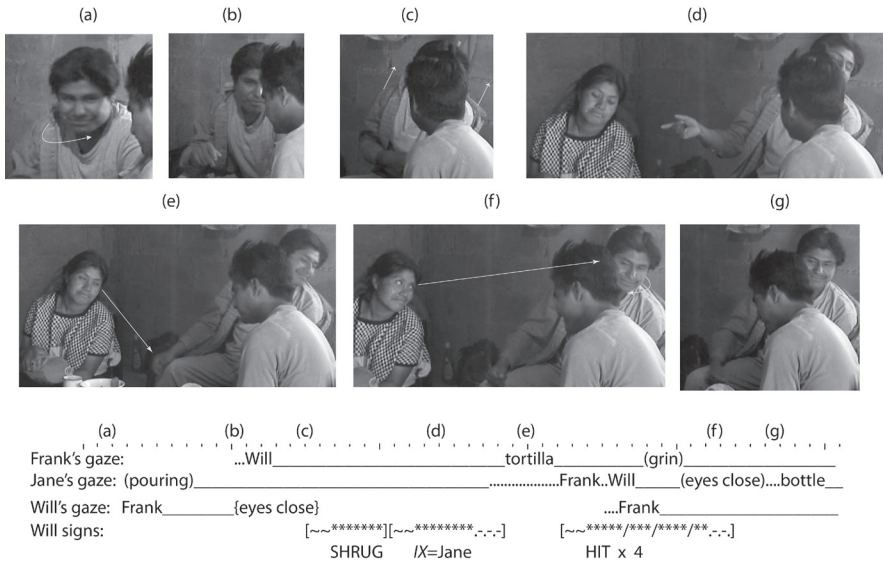


Figure 20 : Will to Frank: “She’s ridiculous! I should hit her!” (Timeline in 10ths of a second.)

Recall Terry's remark that the Z signers sometimes, for privacy, "sign only with their faces." From the perspective of the overall interaction in the house on that day—my visit and negotiation with the signers' father about a possible long term research project—the tiny scuffle over the soft drink cup was a mere side sequence, not meant for anyone but the three siblings themselves. The multifold deployment of gaze for communicative purposes in such a muted, private context offers a clue to how the eyes can perform multiple (and sometimes deliberately hidden or muted) kinds of work in a new language like Z, adding considerable interactive communicative richness and subtlety to an otherwise undemonstrative exchange. Facial expressivity coupled with visible indexicality (how all the interactants "point" with their eyes, among other articulators) and the manipulation of attention via swift glances permit a complex interaction with a limited (although crucial) set of communicative tools, and with only sporadic recourse to conventionalized manual signs (for example, 'drink') or other embodied emblems (a "pout," a "shrug," and a "frown").

This short Z interaction helps populate a catalogue of potential linguistic uses of the eyes, starting with ordinary reference, first to entities in the world (things, and locations, such as the cup, the soda bottle, the table). These are entities in Jakobson's (1957) E^n , the "narrated event"¹⁰ including narrated participants (P^n) when these entities are co-present or otherwise indexically available to be glanced at in the speech situation. The rapid play of Jane's eyes (in Figure 14 and Figure 15) illustrates how gaze can serve as an efficient and delicate demonstrative.

Gaze also functions demonstratively in Jakobson's "speech event" E^s , although here reference is frequently metalinguistic, as when the eyes (of both signers and recipients) can focus on the signing hand itself (see Figure 18), a device frequently used by Z signers both to initiate signed interaction by calling their interlocutor's visible attention to the relevant articulators and otherwise to focus on specific features of the hand's configuration and position.

More familiar from spoken conversation is the metapragmatic power of gaze to regiment address and reciprocity. This also may be part of the domain of reference in E^s —specifically P^s , the "participants in the speech event." For signers, gaze can be a potent addressee selection device, a theme of direct interest as Jane begins her turn in Figure 13. Unable to get Will's attention tactilely when she pokes him to

10 The reader will recall that Jakobson (1957:3) proposes this notation to represent "two basic distinctions", viz., "1) speech itself (*), and its topic, the narrated matter (*); 2) the event itself (E), and any of its participants (P), whether "performer" or "undergoer"."

no avail (Figure 13 d),¹¹ Jane selects Frank as the recipient of her complaint about Will’s slow drinking by fixing her gaze upon him until he reciprocates (Figure 14 d). Thus arises one of the points of friction in this conversation—one of the ways that her behavior can be characterized subsequently by Will as “ridiculous”—since Jane voices her displeasure with Will to a third party rather than directly to him. In fact, her indirection with Will is evident elsewhere in how she uses her eyes: dealing him sidelong, if accusatory glances (for example at Figure 15 f); or steadfastly avoiding Will’s gaze while he gazes at her (Figure 16), instead substituting an injured pout for reciprocal regard. Similarly, Will asks Frank to explain what’s bothering Jane by fixing his brother with a stare and adding an interrogative eyebrow wrinkle (Figure 16 e). For interlocutors, returning proffered gaze is a normal way of accepting reciprocity; avoiding such mutual gaze (see Jane in Figure 16 or Figure 17) or withdrawing¹² it (Figure 19 d) are effective ways of declining or terminating engagement, or, as in Goffman’s “civil inattention” (1977), of altering its character.

One last device, introduced briefly in this little conversational example, is what I have been calling a “gaze to nowhere”: a kind of fixed stare whose presumed target (if any) is indexically non-available in the contextual surround. As mentioned, Engberg-Pedersen (2015) considers “signers’ looking away in no particular direction at a major syntactic break or when they hesitate” to be one way in which signers convey via gaze what she calls “sender or narrator” perspective—i.e., representing themselves explicitly as sending a message rather than as, say, representing the point of view of a narrative protagonist, Pⁿ, a character in a narrated scene. Sometimes in the examples we have seen, such a “nowhere” gaze seems merely to be a way of conveying that one is, as it were, absent or “lost in thought” (see, for example, Will at Figure 16 b or Figure 19 a). At other times, the nowhere gaze looks *outside* the present moment and circumstances but seems, nonetheless, to be fixed upon a virtual something. This device can invoke a narrated context Eⁿ explicitly de-coupled from the speech

11 As mentioned in the accompanying sociolinguistic sketch, Jane is often ignored by her siblings, part of the miniature sociopolitics of talk in this tiny speech/sign community, if not more widely in Zinacantán gender relationships (see Haviland 2013b, 2016). There are social tensions, humor, and also mutual affection displayed in this scene, in the alignment of the boys against their sister, and the naked (if brotherly) ridicule that characterizes Will’s reaction to her sister’s behavior.

12 See Goico (2011) for the apparently strategic use of gaze withdrawal by a single deaf student in an inclusion classroom in Peru, a way to cut off interactions in which she no longer wishes to participate. For a possibly related phenomenon, linked to repair, see Manrique and Enfield (2015)

event E^s : imagined or remembered circumstances taking place in another place or time, but into whose space one can still appear to gaze. This may be part of what Will wants to accomplish by looking away from his sister, directing his gaze out of the local scenario, to mitigate the expressed threat of his pounding fist in Figure 20 e—he would like to hit her in some imagined time or place perhaps (but he won't actually do it in the here and now). These issues will reappear in the discussion below.

2.2 Gaze, reference, and turn coordination

To recapitulate, I have suggested that Z conversational structure builds on a series of coordinating devices, present in non-linguistic interaction as well as in talk (spoken or signed), especially indexical uses of pointing and gaze. In the soda-serving scene, gaze functions as a referring device, individuating such referents as bottle, cup, and co-present individuals (in the “narrated event space”), as well as interlocutors (in the “space of the speech event”) both sought and rejected. Turn alternation arises in part from patterns of alternating attention in the interaction.

The next, more elaborate, example comes from spontaneous conversation preceding an eliciting session in 2015. The conversational interchange is organized in ways more familiar from spoken languages, and it further emphasizes the plurifunctionality of the eyes and face in structuring linguistic interaction in Z . Here the signers gaze directly at signing hands, use the eyes as depicting devices, and the face as a vehicle not only for affective but epistemic stance. The point of the example is to show how gaze is central to the entire interactional organization.

To fill out the readers' understanding of what is at stake in this brief interaction, let me offer a quick summary of the signed conversation and its context. On the day in question, I was busy with Vic, by then 8 years old, preparing cartoon stimuli on a computer screen for him to narrate to the adult signers, who were sitting around a table waiting for the elicitation session. They were anticipating being bored by both the wait and the elicitation session itself, which we were holding in an unusual place they had not visited before: a room in small house in the Spanish-speaking mestizo town not far from their home village. They were amusing themselves as best they could by looking around the house, and as the video began (Figure 21) Frank was surveying the kitchen area.

As illustrated in Figure 22, Frank began the signed conversation by asking Terry whether a certain stuff (a) was edible (b) or not (c). He then located the stuff in question by gazing at it with a little head flick upward (d).



Figure 21: The deaf siblings look around the anthropologist’s kitchen.

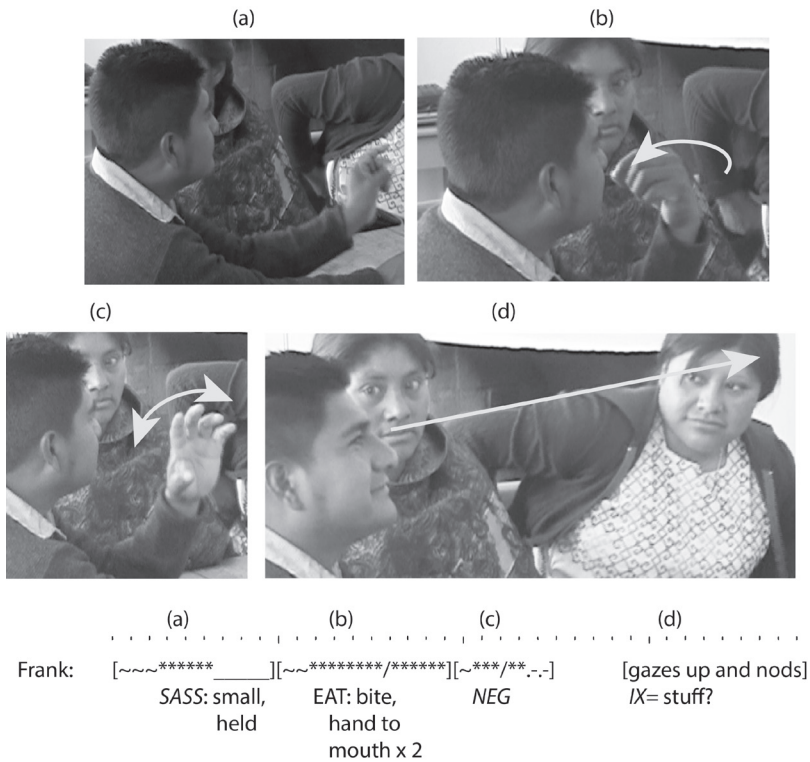


Figure 22: Frank signs “Is that thing stuff up there edible, or not, do you think?” (Timeline graduated in 10ths of a second.)

Jane immediately replied that she thought the stuff was not edible, although her disparaging remark (conveyed by both a negative head shake and a somewhat disgusted facial expression—Figure 23 a) went without uptake.



(a)

Jane: [Head shake L][frown][2 quick shakes]

Figure 23: Jane replies to Frank negatively.

Terry decided to share her insider information about the food in question, which the signers could see and smell from where it sat in a glass bowl atop my refrigerator. She got Frank’s attention by reaching out to touch him on the wrist (Figure 24 a). She informed him that I had told her the food was made from small beans. This she accomplished through a sequence of signs. She referred to the mysterious food at the beginning of her utterance by both gazing and pointing at something on my kitchen counter (to her left—see again Figure 24 b). Then she signed “small” with a size and shape specifier (SASS) illustrating how one would grip such an item with thumb and forefinger (c). “Size-shape specifiers” are frequently motivated in Z by an iconic principle of indicating the size and shape (and sometimes the heft¹³) of a referent by demonstrating how human beings characteristically engage manually with a particular object (see Safar and Petatillo Chan, this volume).

¹³ For example, by muscle tension—or its lack—and even by facial expression miming effort or ease.

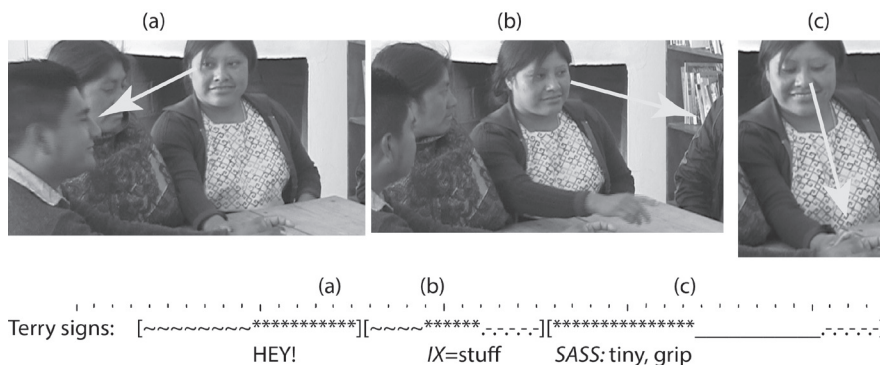


Figure 24: Terry starts to tell Frank about the stuff. (Timeline graduated in 15ths of a second.)

A Z SASS is frequently followed by a “characterizing” element to clarify what sort of entity so sized and shaped the signer intends to denote. As can be seen in Figure 25, following the “small” SASS (a), Terry’s characterizing sign for “bean” was based on the action pattern that Zinacantecs use for cleaning beans, namely sifting them back and forth between cupped hands while blowing on them to remove pebbles and other debris (b). She ended the turn by bringing her palms together (c) and tilting them forward in a deictic reference to me (JBH), sitting in front of her across the table (d).

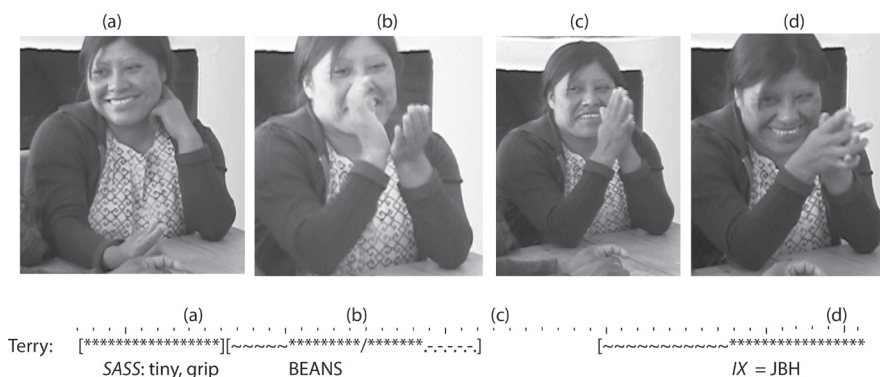


Figure 25: Terry: “JBH says it’s little beans” (Timeline graduated in 15ths of a second.)

When Frank did not respond, Terry immediately elaborated, telling Frank that what she had just said was not quite right: the food was not really made of beans (Figure 26).

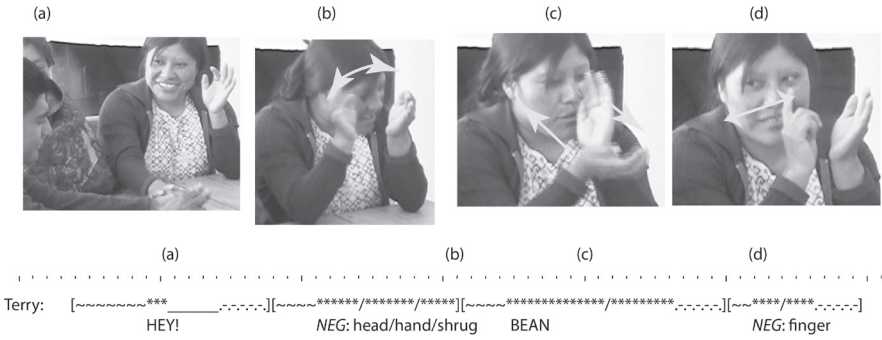


Figure 26: Terry: “Hey, it’s not beans.” (Timeline graduated in 20ths of a second)

Instead, it was made of something that, according to me (Figure 27 a), was small like a bean (b). However, it was not that (c) but rather another unknown entity (d).

So, Terry continued, that “stuff” (Figure 28 c, e) was made from an unknown bean-like thing (Figure 28 b-c) with a strong smell (d).

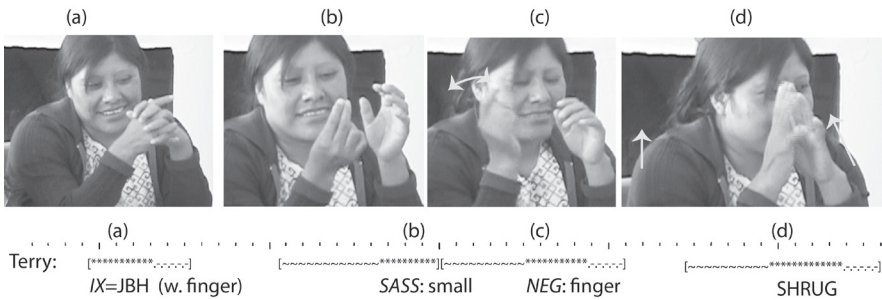


Figure 27: Terry: “He says it’s something else small, not sure what” (Timeline graduated in 20ths of a second.)

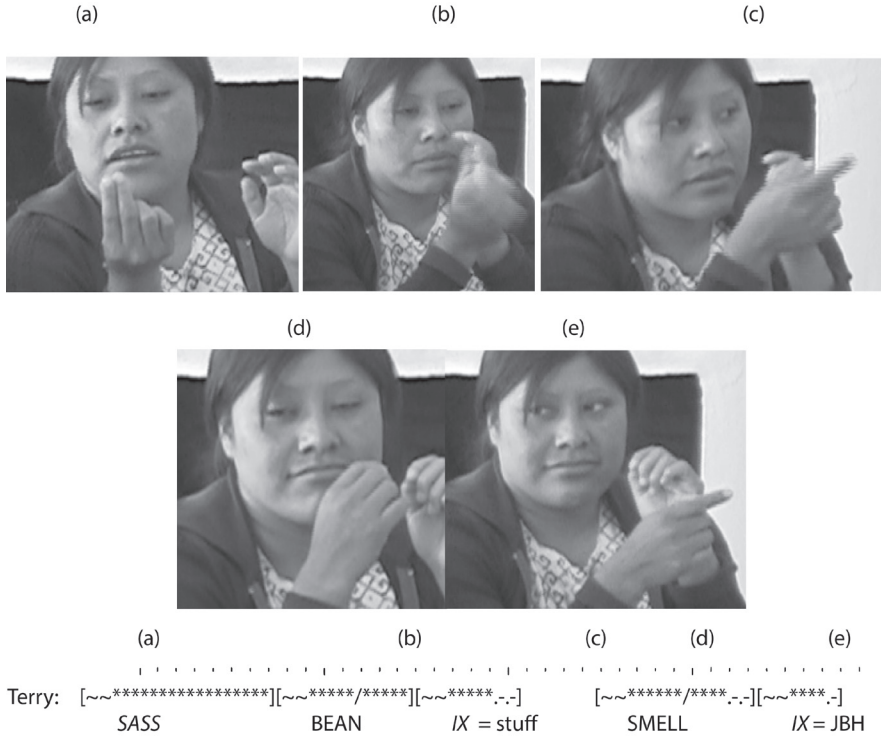


Figure 28: Terry: “There: a small kind of bean, with a malodorous substance” (Timeline graduated in 10ths of a second.)

The smell is from something like an onion (Figure 29 a-b) but unlike an onion (c), of a smaller size (d) although equally smelly (e)—that is, a piece of garlic .

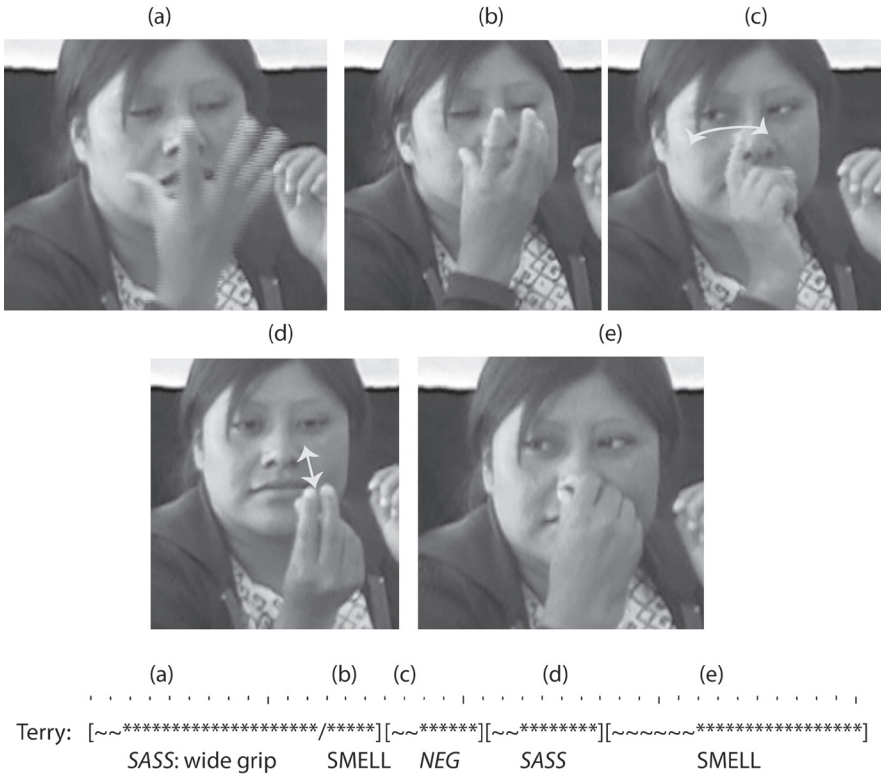


Figure 29: Terry: “He says it’s not a regular sized onion, but a smaller onion-like thing” (Timeline graduated in 15ths of a second.)

And, she concludes, that is what was put into the strange foodstuff, accounting for its odor (Figure 30).

The full story will not surprise those readers versed in the niceties of ethnographic fieldwork. My “exotic” food, the thought of which so disgusted poor Jane, was hummus, made from chickpeas (“little beans”), and perfumed with garlic, considered by Zinacantecs as more a cure for witchcraft than a vegan delicacy. In fact, when we had entered the house earlier that morning, I had tried to explain away the strong garlic smell in the kitchen by telling Terry, in Tzotzil, how hummus is made and what it contains. She was passing that information along to the others.

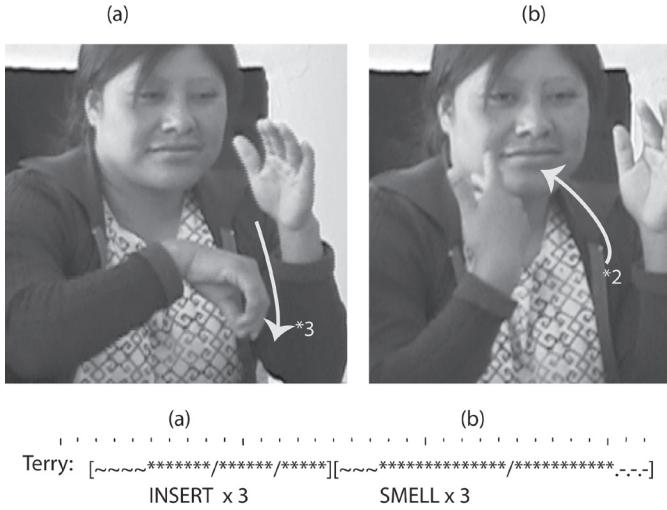


Figure 30: Terry: “He put that in, and that’s where the smell comes from” (Timeline graduated in 15ths of a second.)

This initial account of the short conversation about my food concentrates on its explicitly signed referential content, in particular that expressed by the signers’ hands. However, what originally drew my attention to this tiny signed interaction was not the signing, since I was attending to other things at the time, but rather “the play of gaze.”

Later that same day, when we had finished the eliciting session, I remembered that something in Terry’s signing had caught my attention while I was setting up the computer. Looking through the video recording I discovered that it involved what might be called “bystander” gaze—my gaze, as a non-ratified participant in the developing conversation between the signers. Terry had started to sign to Frank and the others, but when I looked up at her from my computer screen my gaze seemed to throw her off.

Here are relevant parts of the clip, shown now with synchronized split screen images from a second video camera showing my face superimposed over the lower right hand corner of the image. As we saw above (Figure 24), after Frank’s initial turn (which I appear not to have noticed at all in the moment) Terry turned her gaze to him and reached out to touch his arm: “Hey!” As can be seen in Figure 31, which diagrams the play of our gazes in addition to Terry’s signing, at that point I was still concentrating on the computer screen in front of me (a-b), although both Jane and Frank turned to look at Terry as she gazed and pointed at something related to the strange food—perhaps the raw chickpeas sitting on my kitchen counter across the table from her (b). Terry then switched her gaze to

me (referred to as JBH on Terry's "gaze line" in Figure 31, see frame c), perhaps checking to see whether I was paying any attention to her. When she performed the pointing movement I had still been fully engrossed in my computer screen. However, at (d), perhaps noticing her outstretched finger (which Will seemed to glance at as well, turning his gaze to Terry's face almost simultaneously with me), I glanced up and our gazes met fleetingly as I caught her in mid-utterance. At that point she immediately began to drop her eyes towards her own signing hand, a process completed by (e).

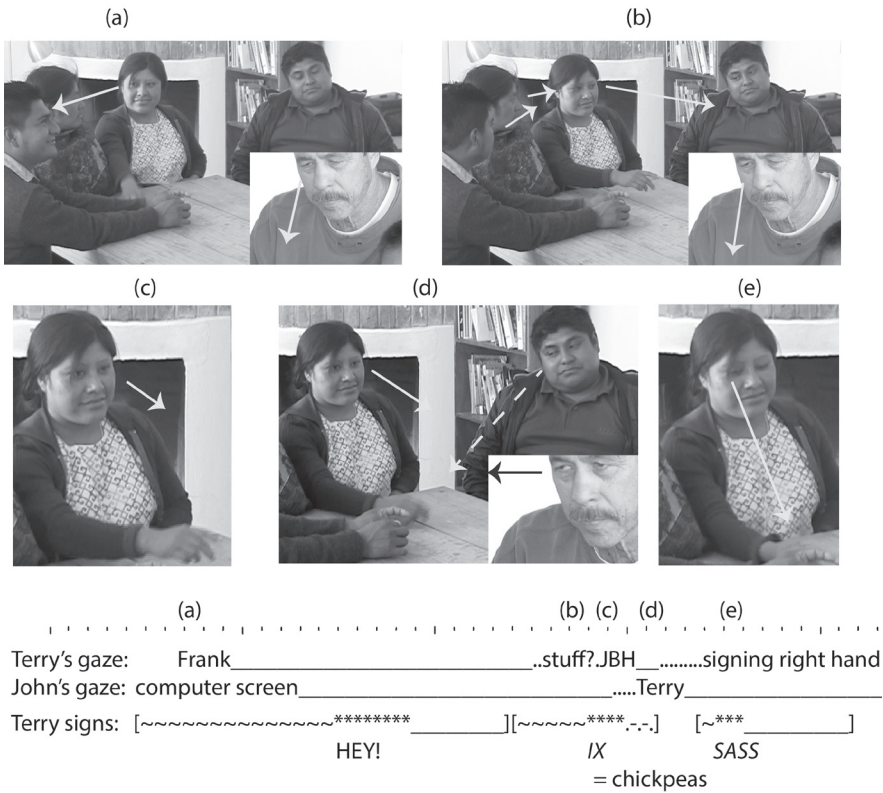


Figure 31: When I catch Terry signing, she seems to drop her gaze. (Timeline graduated in 15ths of a second.)

The exact movements of Terry's eyes can be seen somewhat more clearly in Figure 32, where the quick changes of gaze can best be appreciated from the numbers (in the format sec.msec) of the video frames. First Terry gazes at the malodorous food (a), and in the next frame her eyes move to me (b). One tenth of a second later, my eyes meet hers (c), and within another two tenths of a second her gaze

has dropped (d). The whole sequence illustrated takes only one third of a second to complete.



Figure 32: Detail of Terry’s gaze when I look up at her.

Terry appeared to be somewhat disconcerted by my catching her signing, and she moved into a notably minimal signing mode, in which her movements were small and occupied a limited space, slightly visually obscured at least from me (Figure 33). While I continued to watch her, she gazed at her own lowered right hand as she signed a small two-fingered gripping SASS (a) to denote a small object that can be so held, first holding it very low against the table (b), and then lifting it slightly more into view (c) as she trained her gaze on Frank. With a somewhat abashed grin, perhaps because she was aware that I was still watching her, she performed a highly stylized version of the conventional sign for “beans”¹⁴ (d) before returning to a rest position (e) with her two palms together in front of her face (again, slightly obscuring my continued view).

¹⁴ Whereas her version here is brief and truncated, the more fulsome versions of this sign, seen above in Figures 25 and 26, involves alternating motions between the two hands and simultaneous miming with the mouth the process of blowing on the beans to remove extraneous bits of vegetation and rubbish.

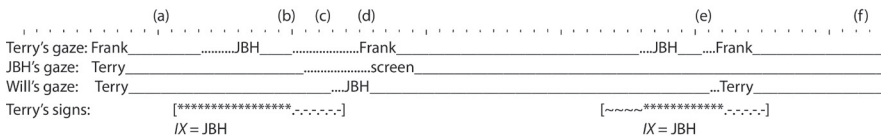


Figure 34: Terry glances in a clandestine way at me, and then points overtly. (Timeline graduated in frames.)

That a signer’s utterance is in part a product of who is looking at her should, of course, be no surprise if we think about commonplace alternations in linguistic structure that reflect the identities of interactants: register-like choices of lexicon and syntax, pronominal alternations, use of names, nicknames, and other vehicles of person reference, and, indeed, alternations between entire languages, or different constraints on who is expected or allowed to speak at all, as in co-tellings and re-tellings. All of these are familiar indices of the identities and statuses of interlocutors (and, indeed, even of possible referents) in the linguistic anthropological literature. As Goffman (1974) pointed out, the currently perceivable social world in which co-present individuals are positioned to monitor one another, partly via gaze, continually imposes constraints on actions

by co-present individuals; and these constraints may extend to the structure of utterances—a special kind of actions. Talk (or signing), like all collaborative action, responds to the mutual attention of the participants, and, in turn, it reorganizes and directs this attention as a primary resource for communication, especially since gaze, attention, and ‘reference’ in an maximally general sense are inextricably linked.

Finally, it remains to demonstrate that patterns of gaze and patterns of turn-taking in this extremely young sign language are closely interrelated and, perhaps, mutually constitutive. Consider further details of mutual or directed gaze in just the first few interactions between the ratified participants in this example. How is the topic of my hummus raised, and by whom? Here again is the very first part of the sequence, now marked up to diagram the patterns of mutual gaze among the interlocutors. I call the reader’s attention to the choreography of gaze “turns,” its apparent contribution to the progress of the conversational interaction, and the constitution of its universe of discourse referents.

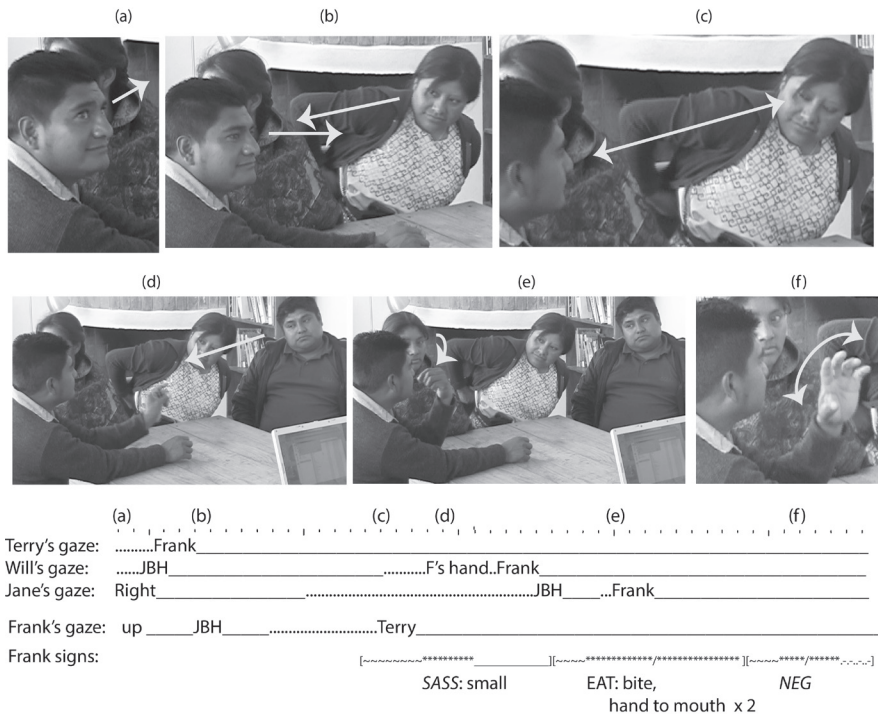


Figure 35: Frank and Terry initiate an exchange of gaze, and Franks asks whether the strange stuff is edible or not, also attracting the attention of both Will and Jane. (Timeline graduated in 20ths of a second.)

As shown in Figure 35, at the start of the scene Frank was surveying things in my kitchen (a). Noticing his gaze, Terry glanced in Frank’s direction (b). Frank went on to gaze at Terry, and having established mutual gaze (c), he began to sign to her, attracting Will’s (seemingly very bored) attention at the same time (d). Frank here started to produce the size-shape specifier with gripping fingers to denote the foodstuff he had been looking at. By the time he signed ‘EAT’ to ask whether the stuff was edible (e), he had the visual attention of all three of his interlocutors, including Jane who had been previously disengaged from the interaction. Frank maintained the gaze of his three interlocutors as he turned his utterance into a question “can you eat it or not?” by appending a negative hand wave (f).

Finally, Frank indicated his referent by shifting his gaze (see Figure 36 a), with a little upward head flick (b), to the bowl sitting atop my refrigerator. One by one (c, d, & f), the others turned to look at what he had signaled, and Frank turned back to them to wait for their responses (e).

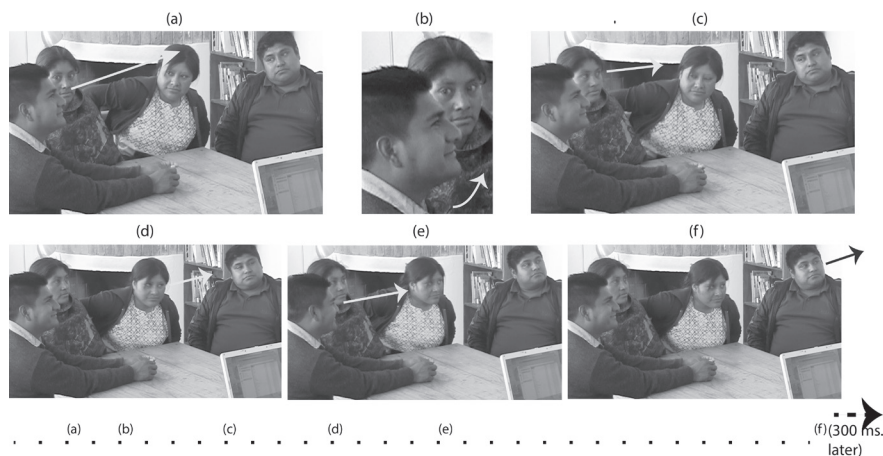


Figure 36: Frank refers with gaze and a chin flick to his referent. One by one, Frank’s interlocutors copy his gaze, and he looks to them for a response. (Timeline graduated in 100ths of a second.)

One such response was not long in coming. With a look of disgust on her face (see Figure 37 a), Jane turned to Frank (b) with a series of definitive negative head shakes (c-d): “No, you can’t eat stuff like that! Yuck!” The others appeared to pay

her no attention,¹⁵ however, since none of them gazed in her direction at all, nor reacted to her seemingly definitive opinion.

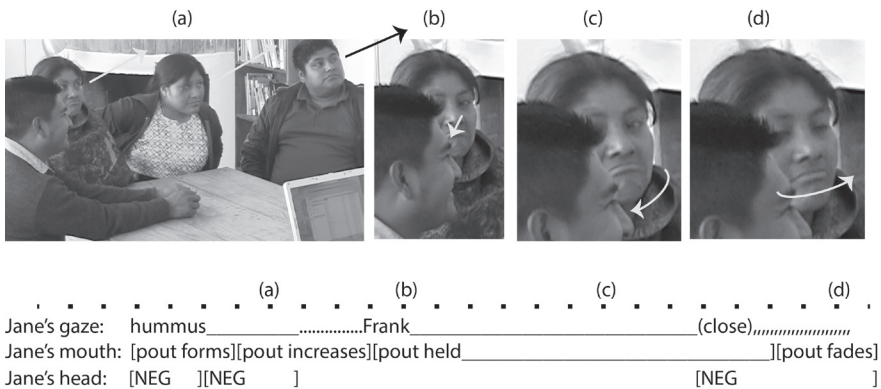


Figure 37: Frank receives a response from Jane. (Timeline graduated in 100ths of a second.)

For the next 8 or 9 seconds the signers continued to gaze at the objects on top of my refrigerator, with Terry and Frank occasionally looking at each other, and Jane apparently trying to figure out what would happen next (see Figure 38). It was clear that there was more to be said, and the signers—especially Frank and Terry, who were visually engaged with each other—seemed to be thinking about who might say it.

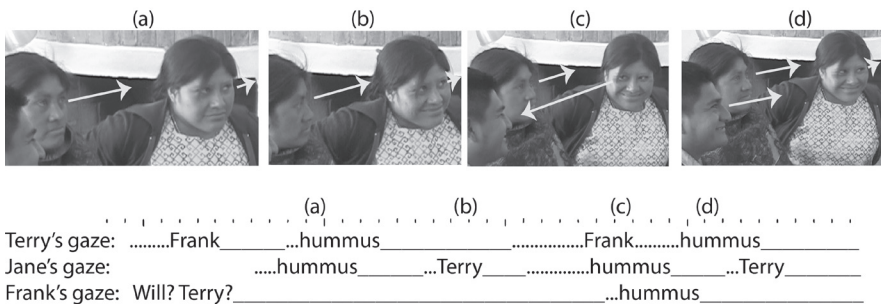


Figure 38: Knowing glances are exchanged between Terry and Frank, interspersed with more looking at the object in question. (Timeline graduated in 10ths of a second.)

¹⁵ See footnote 3 above.

It was at this point that Terry began the utterance which was interrupted by my looking up at the signers. We have already seen (in Figures 31 and 32 above) how my gaze seemed to disrupt or alter Terry’s signing in this segment. Here I concentrate on the play of gaze in the resulting overall turn structure. When she made up her mind to answer Frank’s question about whether or not the smelly hummus was meant to eat, Terry gazed fixedly at Frank (see Figure 39). Then, still staring at Frank, she directed a manual “Hey!” sign at him, which attracted Jane’s gaze (a). Terry then physically touched Frank’s wrist to signal her desire to begin a signed turn, and Frank started to turn to reciprocate her gaze (b). Note that at the same time Jane also gazed at Terry’s hand touching Frank. When Terry raised a rapid pointing finger to indicate the offending foodstuff (c), Jane was by then watching her face, and Will, too, had noticed her pointing hand. Immediately thereafter, Terry was nonplussed to gaze at me (d) and notice that I was now also looking at her (e). She quickly dropped her eyes (f), effectively delaying for three seconds any further signing. By this time the other interactants, judging from the fact that she had attracted all their gazes, seemed to be watching her expectantly.

It was in the next segment that Terry seemed to be most acutely aware of my watching her as she signed, resorting to a variety of “whispering” techniques—reduced or small signs, in a limited signing space, and performing a distracting “self grooming” movement (touching her neck and hair)—as she articulated a tiny SASS with a small gripping handshape (see Figure 40). The SASS was partially obscured from my view by being performed behind Frank’s arms, but it was clearly visible to the other signers, all of whom looked first at her hand (a), and then at her face (b-c). Will alternated his visual attention between Terry and Frank, apparently checking the latter’s comprehension or anticipating a response from him as Terry signed (b-e). Terry’s gaze moved from her signing hand (a), to Frank (b-c), and then to a kind of imaginary or empty space where she seemed to be gazing at nothing actually in the present surround as she performed the depictive sign for cleaning beans (e). This is another example of an unanchored “gaze to nowhere”¹⁶ because it seems formally to evoke or index a non-present imagined scene not to be found anywhere in the narrating space. Finally Terry seemed to check Frank’s comprehension by gazing at him to end the scene (f).

¹⁶ I have sometimes referred to this as a “neutral space,” which is not to be confused with the “neutral” signing space or “neutral zone” (see de Vos 2012) which is an area of signing space where certain discourse referents may be creatively positioned. Here, instead, I mean that the gaze seems to be directed at some imagined (or, at least, currently invisible) referent—what I elsewhere dub the “gaze to nowhere.”

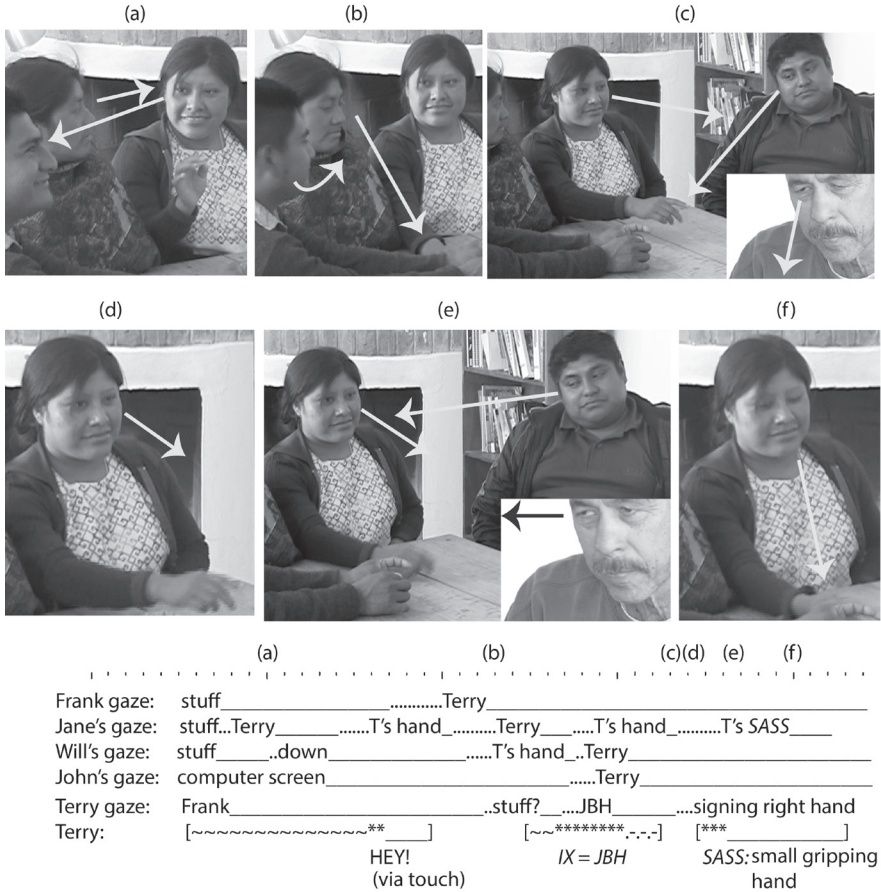


Figure 39: Terry initiates a response to Frank (disrupted by JBH gaze) (Timeline graduated in 20ths of a second.)

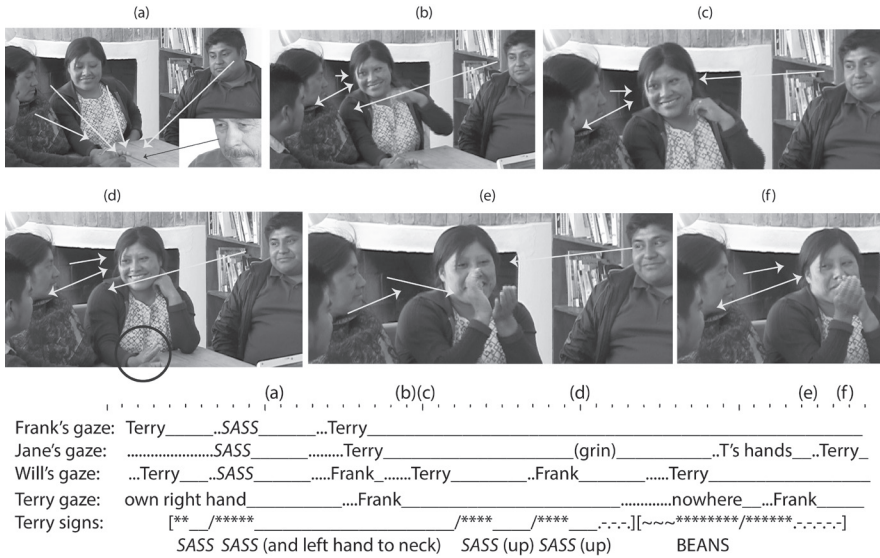


Figure 40: Terry directs her interlocutors’ gazes to her hand as she forms a SASS, holds it low for about 3 seconds and then signs “beans” with a “gaze to nowhere.” (Timeline graduated in 15ths of a second.)

Terry, as we saw in Figure 34 above, then seemed to want to point at me, first in a discrete way, and then more demonstratively once I finally decided (intentionally) to drop my gaze and stop intruding on her signed explanation of the “little beans.” Both Jane and Will glanced at me after Terry referred to me in this somewhat secretive indexical way (see Figure 41 a). Terry turned her gaze back to Frank (b), her principal addressee in this sequence, as did the other signers, apparently waiting for him to respond to Terry’s explanation that the stuff they could see (and smell) on top of my fridge was some kind of bean concoction. Frank actually dropped his gaze and showed no sign of intending to continue at this point (c).

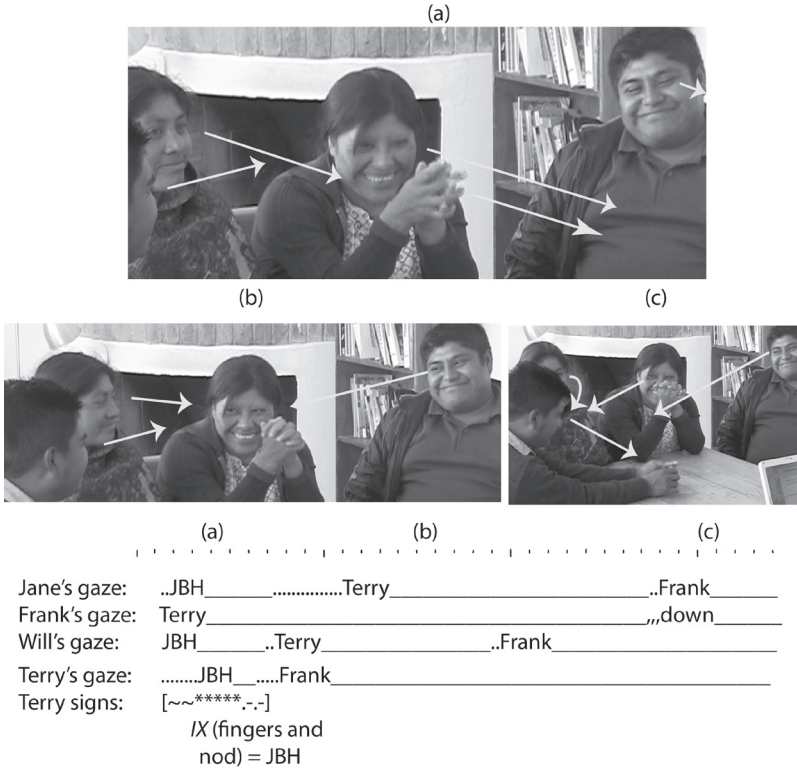


Figure 41: After Terry finishes her utterance by pointing to me, all apparently await a response from Frank, which is not forthcoming. (Timeline graduated in 15ths of a second.)

3 Discussion

I began this chapter by trying to illustrate how mutual attention, partially achieved through gaze, is crucial to organizing conjoint action in non-speech contexts in Zinacantec life. I have dissected in some detail the elaborate dance of gaze in these two sequences of Z signing to support my claim that the sorts of mutual monitoring that characterize many sorts of collaborative action, including talk, in Zinacantán (if not everywhere) are heavily employed in the organization of Z signing as well. In the examples presented we see gaze at work both in the formation of signed utterances and in their interactive synchronization and coordination.

Gaze is a basic mechanism to index referents in narrated events, as well as speech-act participants in the speech/sign situation itself. With respect to

referents, gaze can also contribute (via a “gaze to nowhere”) to establishing the absent status of imagined, hypothetical, or invisible referents in E^n depictions—for example, the depicted beans that an imagined ego cleans in the mimed bean-cleaning action embodied in Terry’s sign in Figure 25 (b). This is, of course, the converse of the direct but also superimposed indexing of such referents, available to be directly gazed at in E^s , which must then be laminated onto E^n —for example, the immediately co-present JBH who at a different time told Terry about the exotic food on his fridge, as she now narrates the matter. Perhaps more important in these materials, is how gaze recruits and selects speech-act participants: addressees, next-speakers (and signers), or conversely non-speakers and non-recipients (those who avoid gaze to eschew participation, or who are left unaddressed, or unattended to, when they speak/sign). These extended examples of Z signing are meant to show how (inter)action can be managed in Z, and how carefully choreographed mutual (dis)attention seems to be.

As above, paralleling Jakobson’s (1957) distinction between narrated events (E^n) and speech events (E^s), one can distinguish narrated spaces (within which narrated entities can, if only virtually, be gazed at) and speech-event spaces (in which, minimally, speech act participants are available to be looked at, at least in canonical cases, and perhaps most especially in sign language). That these spaces routinely overlap—because we frequently may want to narrate events or situations which coincide within the same spaces, and perhaps with the same cast of characters, as those in the current speech event—means that indeterminate indexical devices (like all Jakobsonian “shifters”) including referential gaze may frequently inadequately disambiguate by form alone between such different domains of reference. For example, they may not clearly distinguish between Jakobson’s P^n and P^s (“participants in the narrated event” vs. “participants in the speech event”), to cite one of the simplest cases. Moreover, gazing at or otherwise indicating a co-present interlocutor may, sometimes, specify him or her as a referent in E^n (for example, “John is the one who said that...,” at Figure 34 b, followed by Will’s confirmatory gaze and head nod at me in Figure 34 d). Alternatively, in E^s , it may serve to indicate an expectation that an interlocutor will take up a next turn (as Terry appears to do with Frank in Figure 35 b), or to constitute an invitation to be an addressee (as Frank seems to do with Terry before starting his turn in Figure 35 c). These latter two phenomena, which clearly link to turn management, should perhaps be added to the catalogue of typical cases of what Engberg-Pedersen (2015) calls “sender/narrator” perspective, noted above.

A more interesting case for a sign language is illustrated by the fact that signing itself may invite interlocutors’ mutual gaze as a mechanism to highlight and share aspects of a sign’s denotation. As mentioned above Z signers frequently explicitly direct their gaze at their own signing hands. We saw one such moment

when Terry, disconcerted by my catching her talking about me, “secretly” (or as one might gloss it, “in a whisper”) formed a small SASS hand and seemed explicitly to invite her interlocutors to inspect it—which they did (Figure 40 a). It may also be that, in Z at least, gaze at one’s signing hands is part of a sign’s exact formation—an invitation, as it were, to inspect carefully details of a hand shape. Note, for example, that Terry regularly stares directly at her hand as she forms the SASSes associated with the chickpeas (Figure 28 a) or contrasts the size of onions with that of garlic (Figure 29 a and d). That gaze to a sign may be taken as a potential invitation to interlocutors similarly to focus their attention on gripping handshapes is clear from the fact that they do indeed sometimes shift their gaze from the signer’s face (see Emmorey, Thompson, and Colvin 2009) to her hands at such moments.

The complex nature of gaze in E^s is further illustrated by two other phenomena I have described in Z. There are first the varieties of “nowhere” gaze—or perhaps more simply gaze into a neutral space—which locate the signer conceptually, as it were, in Eⁿ through a (virtual) gaze at something or someplace demonstrably *not* in E^s. There is perhaps a link between this variety of “nowhere” and the perspectively marked gaze that Engberg-Pedersen describes for Danish Sign Language as “imitative” gaze, one which reflects what she calls “referent” (as opposed to sender/narrator) perspective. As she puts it: “When the signer’s locus represents a referent in a narrative, their gaze direction often, but not always, imitates that referent’s gaze in the represented event” (Engberg-Pedersen 2015:218). Here the match between what Engberg-Pedersen identifies and what the Z signers do is not exact. For an emerging sign language like Z which in only limited ways makes systematic use of space for grammatical purposes (see, for example, DeVos and Pfau 2015, but see also Haviland 2013a), there are only rare occasions when the direction of a protagonist’s gaze indexes an arbitrarily established signing space populated by pre-established argument loci, or which a subsequent signer can then exploit (by, as it were, “quoting” it). Instead, the “nowhere” gaze of Z narrative seems to be linked with sign-formation itself: a way of showing that a depiction is organized around virtual entities nowhere to be seen in E^s. Such is Terry’s gaze when performing the “bean” sign, in which she moves her hands and mouth as if sifting beans, but fixes her gaze on nothing—since no actual bean referents are meant to be evoked (for example in Figure 26 c); or, perhaps most clearly, when she signs “onion” with an onion-sized gripping hand SASS in front of a wrinkled nose, but looking nowhere, referring to no onion in particular but denoting “onions” (Figure 29, a-b). How systematic such a potentially grammaticalized use of gaze might be in Z is an empirical question requiring further research.

Finally, to return to the central issue of this chapter—how interactive mechanisms in conjoint action in general can be recruited by an emerging sign language like Z to contribute to the structuring of turn exchanges—let me end by considering, very briefly, gaze withdrawal. One way that sign language may be expected to differ significantly from spoken language is in the relatively strong requirement, a consequence of its visual modality, that an addressee attend visually to a signer. Some of Goodwin’s early (1981) research on mutual gaze in spoken conversation deals with how a speaker courts, but then abandons, mutual gaze from an addressee. However, as we have seen above (see especially Figures 23 and 37, when Jane expresses her low opinion of my hummus, but no one pays attention to her), while speech can be heard and attended to with no visual contact between interlocutors, signers depend more directly on attracting recipients’ gaze. Explicitly withdrawing—or never even offering—one’s gaze is thus a particularly strategic means to refuse reciprocity (in some ways parallel to a naughty child’s covering his or her ears so as ostentatiously not to hear scolding). Therefore, for sign addressees, gaze is central, partly for demonstrating that one is attending to what is being signed, but equally, and perhaps in a more marked way, for withdrawing attention by withdrawing gaze, even when being explicitly addressed.

Here is a tiny, somewhat exaggerated final example. In an eliciting session, Jane was meant to describe a complex video scene involving her father. But as she started, she initially appeared to forget how the scene began (see Figure 42, where the images start with a split-screen frame [a] which partly disguises the fact that Jane’s brother Will, her interlocutor in the task, is actually looking directly at her). Jane’s hesitation provoked a marked reaction from Will, whose job was to pick the scene Jane was describing from an array of candidate video stills. Jane looked down and scratched her head, and when she looked up to meet Will’s gaze (b), he withdrew it within a third of a second (c) and literally rolled his eyes for almost 3 full seconds (c-h) until Jane remembered what she wanted to say.

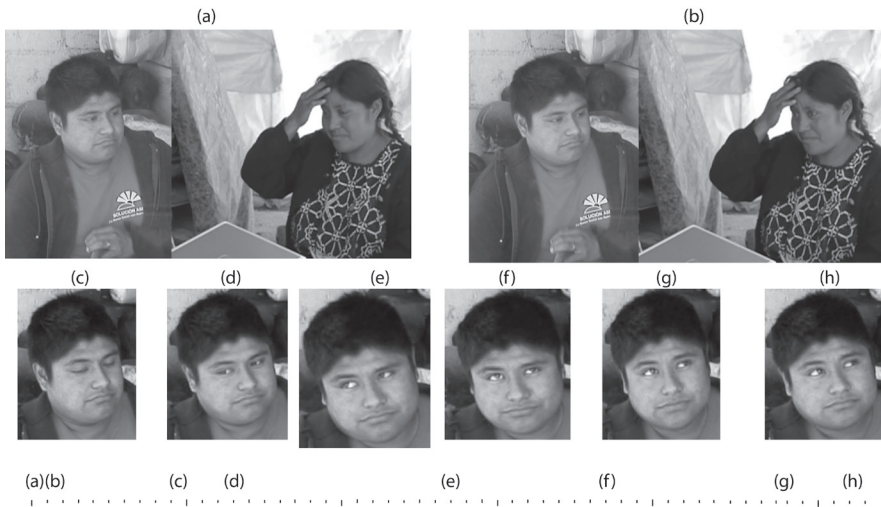


Figure 42: Jane forgets what she is going to sign to Will, and Will rolls his eyes in impatience. (Timeline graduated in 20ths of a second.)

Jane then ventured a new turn-initiating “Hey!” sign, but she had to repeat the sign three times (Figure 43 a-c) before Will, with demonstrative reluctance (d), returned his gaze to her (e), breaking into a slight smile as she proceeded with her narration (f). In fact, he attended to only part of her performance, perhaps because he thought he had enough information already to identify the scene she was narrating.¹⁷ He then turned away from her again, leaving the last part of Jane’s signing stranded and apparently unobserved.

I have described elsewhere (see Haviland 2013b, 2016) some of the power imbalances in the miniature Z signing community, and the subordinate role that Jane occupies within it, despite being the oldest sibling and, in a clear sense, the originator of Z itself. Such gaze withdrawal as a sign of impatience or simple non-reciprocity is, however, a frequent interactive ploy between all the signers, and it demonstrates another way in which Z depends on mutual gaze as an active signal of collaboration and coordination.

¹⁷ This is, of course, a defect in the elicitation “method,” distancing it in obvious ways from ordinary signed interaction.

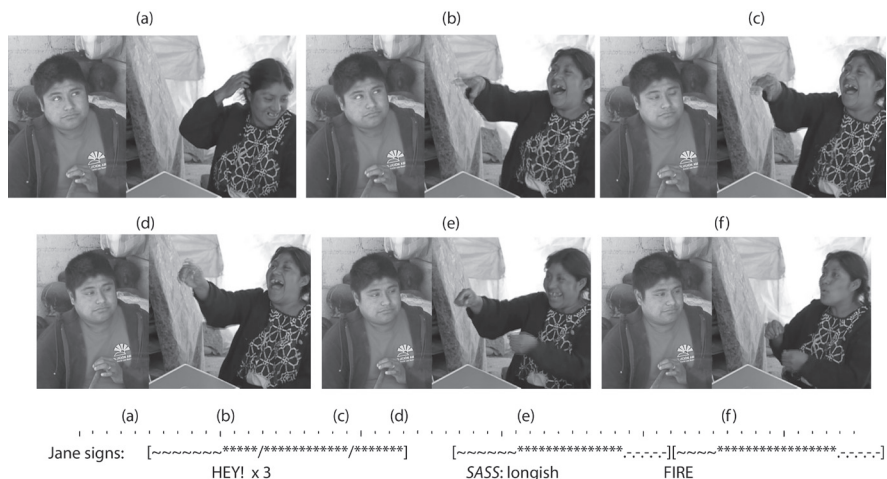


Figure 43: Will only returns his gaze to Jane when she starts signing again. (Timeline graduated in frames.)

3.1 Z conversation exploits Zinacantec interaction

In this chapter I have meant to suggest partial answers to a quite specific, vexing puzzle. How is it possible that the tiny community of half a dozen Z signers, without exposure to other sign languages, and building initially on only those few parts of spoken and gestured communication to which they have access, has managed in fewer than four decades to create a communicative system with quite remarkable expressive and collaborative power? I have explored the hypothesis that conjoint and coordinated action itself provides a scaffolding for language, starting with (non-linguistic) structures of alternating turns in various sorts of action and quite general human capacities for interactive mutual attention (both achieving it and refusing it), repetition and imitation (which depend on the semiotics of iconicity and depiction, especially as applied to human actions themselves), learning, and cooperation.

The indexical power of such attention-management devices as pointing, placing, and gaze of course gives direct rise as well to referentiality, rendered incrementally more and more efficient over repeated cooperative engagements, although also complicated by the multiplicity of indexically available “spaces” within which interlocutors can both point and gaze.

I have touched laterally on some of the socio-political and biographical preconditions that facilitate (or limit) these iterated engagements seemingly

derivative of patterns of mutual gaze. The first example, above, of a mini virtual conversation between Will, Jane, and her infant son Vic over his evident desire for some of his uncle Will's soft drink (Figures 6 to 8) shows that gaze itself can be a primary instrument for orchestrating turn-like exchanges of action, especially once young Vic has begun to learn the complex semiotics of pointing. And, as the example in Figures 9 to 11 shows, both gazing and pointing are activities young Vic is attending to and emulating well before he starts to talk. The soda serving example that follows (Figures 12 to 20) shows that even with minimal conventional manual signs, gaze and accompanying referring devices allow complex interactive exchanges, inflected as well by affective uses of the face as Jane expresses her displeasure with Will, and he his ridicule for her. Finally, the last examples of complex Z signing reveal a bidirectional relationship: between gaze as both an invitation to signing and a device for regulating or coordinating attention to it (Figures 21 to 30, and Figures 35 to 41), or sometimes for suppressing signing (Figures 31 to 34). Conversely, the final example (Figures 42 and 43) demonstrates that withholding mutual gaze can clearly signal refusing sign-recipientcy.

Z also provides clear evidence for the creation of characteristic linguistic structure on top of this underlying collaborative scaffold, several examples of which we have met in passing in the illustrative materials presented: conventionalized lexemes divided into formal parts of speech (Haviland 2013c), SASS classifiers, grammatical and pragmatic particles including those explicitly designed for attention management (Haviland 2015), and finally inflectional categories of status and evidence (Jakobson 1957, see Haviland in press). It seems, however, that it is the structure of collaborative face-to-face interaction itself, rather than the specifics of the emerging sign language, that propels the Z signers into the elaborate communicative exchanges and the accompanying conjoint actions in which they routinely and effortlessly engage.

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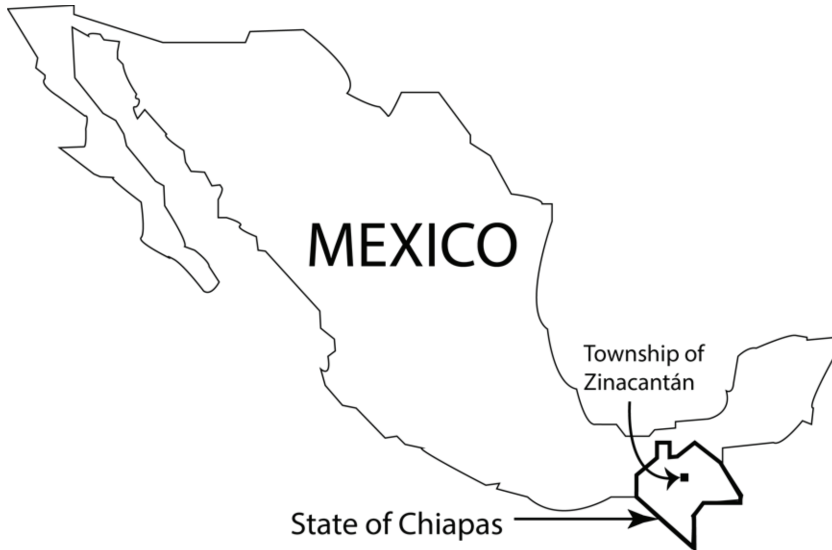
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Zinacantec Family Homesign (or “Z”)¹

John B. Haviland

In 2008, I began intensive research with the deaf members of a family I have known well over the roughly fifty years of my ongoing ethnographic work with Tzotzil (Mayan) speakers in the highland village of Zinacantán, in the state of Chiapas, Mexico (see Map 1). “Z”—my abbreviation for Zinacantec Family Homesign—has emerged in a single extended Tzotzil-speaking family. It has developed among three deaf siblings, their hearing sister and niece, and several hearing children in a second signing generation. According to their own accounts, the members of the family have never interacted with any other deaf people. Z does not, therefore, draw on any previous sign language, although it appears to make some use of visible gestures frequent in Tzotzil conversations among hearing household members and their village-mates. A complete bibliography of publications to date about Z appears below.



Map 1: Location of the Z signers in Mexico.

¹ Thanks are due to the editors for suggesting and providing a template for this brief sociolinguistic sketch; and to Elena Collavin for helpful suggestions.

The *municipio* or township of Zinacantán is one of a dozen or so predominately Tzotzil-speaking communities in Chiapas, with a total population, according to the 2015 Mexican intercensus survey (INEGI 2016:252) of just over 41,000 inhabitants, living in around three dozen small *parajes* or hamlets, the largest of which is the *cabecera* or civil and religious town center, also called Zinacantán. It is a community with a long and intense history of anthropological research, which in the modern period of ethnography since the 1960s, has ranged from economics and the ritual *cargo* system (Cancian 1965), kinship and marriage (J. Collier 1968), law (J. Collier 1973), and agriculture (G. Collier 1975), to shamanistic curing (Fabrega and Silver 1973), ritual (Vogt 1976), and gossip (Haviland 1977), to mention only monograph-length studies. There are also general ethnographies of the community (Vogt 1969, 1970), and historical treatments of colonial, post-colonial, and also post-revolutionary eras in the region (Wasserstrom 1983, Rus 2012). The Tzotzil (Mayan) language of Zinacantán is also well studied, with published grammars (Haviland 1981, Aissen 2012), a study of language socialization (de León 2005), and comprehensive dictionaries, both modern (Laughlin 1975, 2007) and colonial (Laughlin 1988).

Zinacantecs, in the last century, largely dedicated themselves to peasant corn farming, although for most modern Zinacantecs slash and burn sharecropping has given way to other trades: flower-growing and trading, transport, masonry and construction work, and, even more recently, other sorts of wage labor in Chiapas towns and cities, as well as emigration farther afield. In the case of the family where Z originated and whose simplified genealogy appears in Figure 2, the father was both a cornfarmer and a truck owner, who mainly delivered building timber from the Chiapas highlands to various furniture factories in the Yucatán peninsula, while his recently deceased wife maintained the household at home in the village. The deaf children grew up without schooling, unlike their hearing sisters who attended some years of primary school, and they spent much of their childhoods either aiding their mother with childcare and domestic endeavors, or working for neighbors at such tasks as washing, cooking, and, for example, candlemaking, or repackaging commercial yarns and thread for resale to village weavers. Swelling debt and financial disasters eventually meant that the family had to leave their natal home, to become landless renters in the *cabecera* or “administrative center” of the township, where their income derives from casual labor (the father, although now in his seventies, often serves as a night watchman), re-selling foodstuffs, fruit and vegetables, charcoal etc., or backstrap-loom weaving and embroidery, and, in the case of the two deaf men, irregular contract labor in local construction.

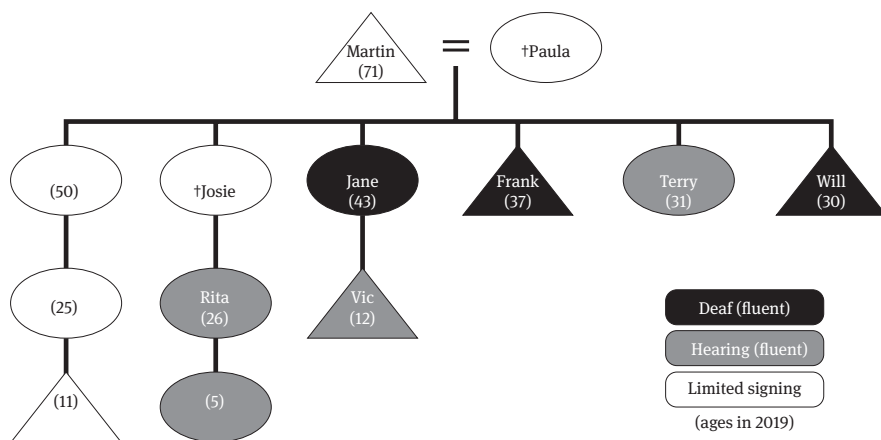


Figure 2: Simplified genealogy of the Z signers, 2019

Z originates with Jane, born in 1976, who is, as one says in Tzotzil, *uma'*—a Tzotzil word with almost the same range of meanings as the English word ‘dumb.’ She is the daughter of my long-time friend Martín, whose second oldest daughter became my goddaughter at her baptism. Jane and her siblings were born and originally grew up in a smaller village on the western side of the township territory, but, as mentioned, for a variety of reasons almost the entire family moved when she was a young adult to the *cabecera* of Zinacantán. Although there are doubtless other deaf individuals elsewhere in the township (as well as in other nearby Tzotzil-speaking townships), I know of no others in either the Z family’s original hometown (of around 3,000 people) nor in the somewhat larger *cabecera* where they now reside.

As the Tzotzil word *uma'*—derived from a root that suggests “hold in the mouth” (Laughlin 1975: 74)—suggests, unlike her older sisters, Jane never learned to speak. It was not until her brother Frank was born, and likewise did not talk, that the family began to suspect that both children were deaf. There followed another sister, Terry, who hears but who did not herself begin to speak Tzotzil until she was about three, and then Will, also deaf, born several years later. At some point when he was a child, one of his father’s non-indigenous acquaintances (about whom I have no further information) evidently offered Frank a hearing aid. Frank quickly rejected its use, and it fell into disrepair (although he sometimes recalls and describes it).

Figure 2 shows the three deaf siblings, their hearing sister, and two further hearing native signers (a niece Rita and a nephew Vic) who grew up in this extended household with Z and spoken Tzotzil as their primary means of communication. Jane’s son Vic was raised with both Z and spoken Tzotzil as his

native languages. Rita's young daughter is evidently able to understand signed interactions, but so far, she rarely attempts to sign herself; nor is she encouraged to do so. There is also a niece and her young son who have lived sporadically in the household, thereby learning some signing. The other adults in the family—the older sisters and their spouses and grown children—largely do not attempt more than minimal signing.

Z is the exclusive medium of communication for the deaf signers, and it is routinely used as well by both Terry and Rita, although mostly only in conversation with the deaf individuals. Both the parents and the other older siblings have interacted at least partially in sign with the deaf individuals over the entire course of the latter's lives, but they frequently claim to be unable to follow in detail the signed conversations between the fluent signers, and, when they feel the need, they often ask Terry or Vic for interpretation, bi-directionally. (I had the impression that Jane could at least partly lip-read the speech of her late mother, whereas neither deaf brother seemed to have developed nor been interested in such a capacity.) By contrast, Z is never used by outsiders, and, indeed, rarely performed in its efflorescent form in the presence of non-family members. None of the Z signers has attended school for more than a few weeks, and all are illiterate, although the men are able to read numbers and interpret calendars. In their work as masons, and occasionally as assistants in flower selling operations with their father's siblings, the two men sometimes travel and interact with people outside the immediate extended family. Their parents have rejected suggestions from me that the deaf brothers might earn more by joining construction crews outside the village (on the not unreasonable presumption that such crews drink up most of their wages on weekends). The parents were reluctant even to send the boys on distant selling trips, lest they become stranded and unable to return home alone. Nonetheless, in 2016 the elder deaf brother Frank (usually assisted by his younger brother Will and attended by his father, who himself had once enjoyed a distinguished ritual career as both a civil authority and in service to religious institutions) was dragooned into an official year-long *cargo* or ritual office in the Zinacantec public ritual hierarchy (see Vogt 1969, Cancian 1965). Mostly in that context, a group of Zinacantecs outside the family who were engaged in the same ritual activities had regular interactions with both men, using what amounted to nonce gestural systems to communicate with the deaf individuals.

A first generation sign language like Z is particularly compelling, especially since it has arisen in such a short time. Jane, now in her late thirties, spent the first six years of her life as the only deaf person in her community. Her deaf brother Frank was followed by a hearing sister Terry and then by Will, also deaf, born when Jane was already thirteen. Jane thus became one of Will's primary caregivers. Jane's linguistic experience, as the only deaf person in her household

(and, indeed, in her entire village) for her first 6 years, stands in marked contrast to that of Will: born into a household where his three immediate older siblings already signed. The experience of young Vic, Jane’s son, was different again, as he was born hearing with a deaf mother in a household where he was surrounded by spoken Tzotzil but where most of his early caregivers communicated exclusively or by preference in the family homesign. Indeed, the proximate motive for me to begin to study Z in 2008 was that Vic, at 11 months of age, had clearly already begun to sign, even before uttering his first Tzotzil words (see Meier 2016). I made a trip to the village explicitly to ask my friend Martín if his children would work with me to teach me about their language. Although my ignorance of sign linguistics had previously made me reluctant, if not terrified, to venture into the study of Z, the challenge of working with the first—and perhaps the last—generation of a brand new language was something I as a linguistic anthropologist could not responsibly continue to ignore.

Z builds on a lexicon of invented conventional signs, supplemented by an extensive system of deictic indications, to produce highly structured, interactive, and collaborative conversation. Patterns of grammaticalized utterance structure have also emerged, with corresponding emerging grammatical categories—signed analogues of “parts of speech,” for example. At the same time, variation in lexicon and apparent morphosyntax—for example, diverse patterns of use with emergent “size shape specifiers” (Safar & Petatillo Chan, this volume)—can be observed in even this tiny sign community, along with clear metalinguistic discourses and ideologies. (See Haviland, 2011, 2013a, 2013b, 2013c, 2013d, 2014, 2015, 2016, 2017, 2019.) My own entry into the research, conducted entirely in Tzotzil and more recently in my own halting use of Z, was clearly dependent on interpretation by Terry, Rita, and more recently Vic, who also routinely serve in such a mediating role between the deaf signers and the rest of the family, not to mention with outsiders.

As mentioned, Tzotzil speakers categorize the deaf signers as *uma* ‘dumb.’ As in English, the word carries the further connotation of reduced intellectual incapacity. There are multiple Tzotzil expressions that mean ‘deaf’ but they tend to characterize the growing hearing loss that people experience as they age. One such expression—the humorously critical *pak’-jol* (literally, “daubed/patched head” [Laughlin 1975:263])—invokes the idea that hard-of-hearing people “answer sideways” because they misunderstand what other people are saying to them. (Tzotzil is heavily endowed with disrespectful and mocking epithets for disabilities of various kinds—blindness, lameness, intellectual and physical incapacities—which, like the one just cited, often combine the rich affective or positional lexical resources of the language with particular body parts.) Another epithet, equally critical, that even family members sometimes hurl at the deaf

signers, perhaps because they routinely vocalize as they sign, is *chich* which means ‘foolish,’ most commonly used in the context of overly talkative children. Laughlin (1975:117) glosses the word as “extremely loquacious, saying everything that occurs to one.” Given the emphasis in Zinacantec social life placed on verbal skill and dexterity, deafness is considered a severe disability, and it diminishes the social prospects of those affected. One explanation offered for the reluctance of the Z signers to sign in the presence of non-kin is expressed by the Tzotzil word *k'exlal* ‘shame.’ A central dilemma for both deaf men is whether, and from where, they will ever manage to find wives because of their deafness, which seems to make them undesirable as spouses. Jane, as a single mother whose child’s father refuses to acknowledge him, is considered unsuitable for marriage.

A central topic of my own ethnographic research has been the attitude toward deafness evinced by the immediate family members themselves. The deaf siblings’ late mother expressed concern that the infant Vic, Jane’s son, would—like his mother and uncles—never learn to speak Tzotzil, and that he should not be encouraged in his acquisition of Z signing. She frequently scolded her own children when they encouraged Vic to sign at all. At a certain point, when Vic was about three, she decreed, in fact, that he should be separated from his mother and sent to live with an older aunt who had already raised her own child, and who could teach him proper Tzotzil. The resulting experiment lasted less than half a year.

More relevant to the interactions I routinely observe between the deaf signers themselves is the fact that Jane is often ignored and dismissed by her own siblings, part of the miniature sociopolitics of talk in this tiny speech/sign community (see Haviland 2013b, 2016). As I argue in the main chapter on Z in this volume, there are both social tensions as well as humor and mutual affection in the occasional alignment of the boys (and sometimes Terry) against their sister, Jane. There is an asymmetric power structure in even the tiny Z signing community, and Jane—despite being the oldest and first signer—clearly occupies a subordinate role within it, in ways and for reasons that remain an active topic of investigation. Part of the explanation, in addition to gender inequalities more widely in the community, is surely that Z has evolved rapidly in the context of the small sign-community, with at least some innovations in lexicon and grammar that have clearly left Jane behind.

Whether Z will survive the deaf individuals, something I once was hopeful about, seems ever more dubious as Vic distances himself from his mother’s native language, learns to read and write in Spanish, and moves potentially ever farther from his natal speech-sign community. Although a newly created language, Z is already severely imperiled.

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