Pointing: Where Language, Culture, and Cognition Meet

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Acknowledgments

How to Point in Zinacantán

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This chapter takes as its raw material pointing in the speech of two different individuals from Zinacantán, a Tzotzil (Mayan)-speaking peasant community in Chiapas, Mexico: a 3-year-old girl named Mal immersed in learning how to interact with other people, and her grandfather Petul, a partially blind octogenarian. Field material from Zinacantán suggests the possibility of a "natural history of pointing" that encompasses a range of narrative and nonnarrative discourses, different sorts of speakers and interactive contexts, and both the emerging skills of language-learning infants and the full-blown competence of adult speakers. As a preliminary to such a study, in this chapter I present several examples of apparent pointing, first to argue against the oft-assumed simplicity of "pointing gestures." Second, I suggest the essentially linguistic nature of pointing, as part of the system of determiners and pronouns, using as evidence links between pointing and spoken language, the form of pointing, and its use by young Tzotzil children.

Consider first the alleged conceptual and functional simplicity of pointing gestures, evidenced by the status of pointing in proposed typologies of gesture. For example, in his influential classification, McNeill (1992) posited a class of deictic gestures taken as definitionally unproblematic; "the familiar pointing" (p. 18) gestures are described with unabashed circularity as "pointing movements, which are prototypically performed with the pointing finger, although any extensible object or body part can be used" (p. 80). Indeed, McNeill found what he called "concrete pointing," which

"has the obvious function of indicating objects and events in the concrete world" (p. 18), relatively straightforward in contrast with "abstract pointing," where "there is nothing objectively present to point at" (p. 18).

Hand in hand with the evident formal and functional simplicity of pointing goes a purported conceptual and developmental link between pointing gestures and referential devices in language generally. Again, McNeill (1992) encapsulated the standard view: "Pointing . . . has been regarded as a precursor of speech developments" (p. 300). In his discussion of "protogestures" (as opposed to "true gestures") he summarized literature on early acquisition as follows: "By 12 months of age, or so, gesture movements with definite referential significance have emerged in the form of concrete pointing. . . . A convincing demonstration of the referential significance of this early pointing is when a child reaches out in the direction of a desired object, and *looks away from the object and to the adult* who is in a different direction" (McNeill, 1992, p. 300, citing Bates, Bretherton, Shore, & McNew [1983] and Lock [1978]). Researchers seem to have little difficulty identifying a child's movements as instances of pointing, nor do they hesitate to ascribe referential intent by linking the gestures to apparent concrete referents. The later development of more complex referential devices in language is assumed to build on these early pointing gestures.

When researchers on child language (or the caregivers on whom they rely as interpreters and with whom they usually share a language) operate with their own native category of pointing they are free to apply it as they like. Matters are more complex in a different communicative tradition. David Wilkins (chap. 8, this volume) insists on the use of native categories of action in launching our descriptions. Accordingly, he bases his categorization of certain Arrente gestures on Arrente descriptive terms and an accompanying native theory. Applying this perspective to speakers of Zinacantec Tzotzil, however, yields unsatisfying results. It is not clear that Zinacantec communicative metatheory will yield *any* category of "pointing," or for that matter of "gesture," as a distinct and recognizable class of actions.

In English, to describe a pointing gesture we might use the verbs *point at* (or *to*) or *indicate* with a specific direct object denoting the presumed referent. *"She pointed at her mother." "He indicated where the ball fell."* In some contexts, we might prefer the verb *show* with appropriate complements. *"He showed me his toy."* The syntax of these expressions seems to presume that the corresponding actions are *referential*—that is, that they have *referents* denoted by their direct objects.

In Zinacantec Tzotzil, I know of no equivalent expressions. The only verbs we might translate as *point* have specific anatomical connotations. For example, the verb stem *bech* is "stick out (e.g., a limb, a finger, the end of a hose), hand over, deliver." Thus, *isbech sk'ob* means "she stuck out her hand," with no necessary implication of pointing *at* something. There are

many expressions that we might gloss as "show"—mostly causative constructions like *ak'iluk*, lit., "make (another person) see (something)"—but none is specific to gesturing, nor is a presumed "pointing" movement a particularly appropriate action to be so described.[1]

Furthermore, Zinacantec Tzotzil seems to provide neither a description of the common "pointing hand," nor even a distinctive name for the index finger.[2] In local terminology, pointing gestures seem to be accorded no special recognition or status.[3] Instead, in Zinacantán, gestures that appear to an outside observer to be instances of pointing are characterized like *spoken linguistic communicative acts*. That is, they are glossed with the same sort of metapragmatic frame used to gloss speech, typically with the form *xi*, "he/she says."[4] We show examples in the spontaneous glosses offered for little Mal's gestures, to which I now turn.

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[1] Although the expression is much more general, Laughlin (1975) does gloss *ak'iluk* by offering a series of exemplary gestures whose specific hand-shape morphology is culturally and communicationally salient: to "show /by pointing, by holding palm down to show height of object, cornfield, or animal, with forefinger raised to show height of child/." Zinacantecs thus observe a widely cited conventional use of different handshapes to signal size. Compare the classic description of such conventions in Foster (1948, p. 237), whose original citation was brought to my attention by David Wilkins.

[2] There are a few descriptive expressions for other hand shapes, for example, *much'k'ob* or *mich'k'ob*, "make a fist (lit., squeeze one's hand)." *ch'inet k'ob*, "with fingers widespread." A number of verbs in Laughlin's (1975) dictionary of Zinacantec Tzotzil suggest conventional gestures or uses of the hands: *velu*, "motion (to someone) with circular motion of the hand"; *yom*, "hold in both hands"; *vutz'ba*, "push down on shoulders with hands"; *ixin*, "shell corn with the hand"; *ak'k'ob*, "shake hands"; *nupk'ob*, "bow (to meet with one's forehead the extended hand of an older person in greeting)"; *tem*, "hold (in hand)"; *tax k'ob*, "clap"; *p'is krus*, "hold hand in sign of cross"; *mich'*, "squeeze in fist or hands"; *net'*, "press (with side of hand)"; *nup'k'ob*, "fold hands (in prayer)"; *k'et*, "hold or scoop in hand"; *jop*, "cup in both hands"; *tz'it*, "clean with second joint of forefinger /inside of gourd or bowl/"; *xek*, "pick up or carry by holding between thumb and forefinger"; and so on. Similarly, a number of conventional measures involve specific hand configurations: for example, *ch'ix*, "handspan"; *kejlej*, "span between thumb and knuckle of forefinger."

[3] This situation contrasts with what we can infer for other native American languages. For example, Rigsby (1965) wrote about the Nez Perce numeral *túska:s*, "seven." "*Seven* is a descriptive formation which may be segmented into /túsk-/ *point (with a finger)* and /-a:s/, a common suffix for body parts which might be considered a 'fossilized' allomorph of the first person singular pronominal clitic. *Seven*, then, may be translated literally as *pointer my*. Starting with either hand, the seventh finger is always the first finger of the opposite hand. Unlike some American Indians of the Plains who 'point' at objects by protruding the lips, the Sahaptins pointed with their first or index fingers, as do Euroamericans. In fact, the index finger is called /tuskáwas/ *point for the purpose of* in the Northwest and Colombia River dialects" (Rigsby, 1965, p. 117). I am indebted to Courtney Handman for bringing this passage to my attention.

[4] The word is derived from the defective intransitive stem *-chi*, "say"; see Haviland (1998a). Lucy (1993) gives an extended treatment of the cognate expression in Yucatec Mayan. In other contexts, the same word functions as a demonstrative meaning "thus" and also in a construction where it suggests "all of a sudden, just."

MAL AT 18 MONTHS

Consider the following examples of what a barely verbal Zinacantec child can communicate using word and gesture. Mal (shown as M on the transcripts) is a Zinacantec infant who in this sequence is 18 months old, barely into the "one-word" stage in her spoken Tzotzil.[5] She is strapped to the back of her 18-year-old cousin (shown as L on the transcripts), one of her principal caregivers. The cousin and T, an aunt who is an occasional visitor in the household, are engaged in conversation about where Mal's mother has gone. There follows a complex interaction, from which I have extracted several evident pointing gestures.

(1) V9607:44:27 *me'* "mother"

5　T;　much'u tzna ibat taj sme'e?
　　　　Whose house did her mother go to?

6　L;　an, tzna me'el Alyax
　　　　Why, to the house of old lady Arias.

7　T;　aaa?
　　　　Oh?

8　L;　jmm.
　　　　Mm hmm.

As the women talk, Mal has been feeding chicks, and L is cleaning corn dough off her hand. Mal has also evidently been following the conversation, and she now stares intently at T. After a short pause, she simultaneously reaches out in a "pointing" gesture and intones a word (see Fig. 7.1).[6]

　　　　((Mal gazes at T as tortilla dough is being brushed off her right hand)
　　　　((Mal extends her left hand with index finger extended, out to her left side))
　　　　[
9　M;　me'
　　　　Mother

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[6]In the transcripts, descriptions of gestures, sometimes individually labeled with letters or attributed to particular interactants for clarity, appear above and linked with an open square bracket [to the corresponding transcribed simultaneous speech.

FIG. 7.1. Mal points, "Mother."

Both women understand the combination of Mal's word and gesture to be a contribution to the conversation about the child's absent mother, as evidenced by their spontaneous "glosses" of what she has said.

10　L;　bat lame'?
　　　　Did your mother go?

11　T;　bat lame'?
　　　　Did your mother go?

Mal apparently replies to T's question, although T misunderstands her. Mal's word at line 19 sounds like the adult *ja'* "yes," which is how T interprets it. L, a frequent interpreter of Mal's utterances, corrects this reading, glossing Mal's word instead as *sa'*, a bare verb stem[7] meaning "look for." At line 17, T now understands Mal's childish pronunciation *xi'* as *si'* "firewood," as evidenced by the comments that follow.

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[7]See de León (1999) on the remarkable ability of Zinacantec children to isolate roots from the adult stream of speech, which ordinarily clothes them in inflectional and derivational morphology.

12 M; ja'
     Yes (But: sa' = [went to] look)

13 T; ja'?
     Yes?

14 L; ba sa' xi
     "She went to look," she says.

15 M; xi'
     Firewood

16 L; si'
     "Firewood"
     |

17 T; ba sa' si' ((laughs)),
     "She went to look for firewood."

18   lek xa ka' xlok' yu'un.
     I see that she pronounces well now.

19 L; ba sa' si' xi.
     "She went to look for firewood," she says.

This little interaction illustrates several complexities that belie the presumed simplicity of pointing. First, it is unclear toward what Mal is pointing. Mal's mother—one possible "referent" of her gesture—is absent, although she has left the house compound by the path that lies in the direction Mal indicates. This direction itself illustrates the limited spatial knowledge Mal possesses; she herself rarely leaves the house compound, but she knows that it is by this path that people depart. Finally, Mal's interlocutors apparently have glossed the pointing gesture as a proto-predicate: "go that way."

Mal wants to try to feed the baby chicks, to which she refers repeatedly as *nene'* "baby." Her aunt, T, engages the little girl in "conversation," noting that the chicks have moved to another part of the yard.

(2) V9607:45:27 *taj* "over there"

42 T; bu lanene'e
     Where is your baby?

43   buy
     Where?

L, who frequently prompts Mal with suggestions about what to say, tells her to look for the chicks, guiding her with a gaze. Mal looks around, raises her arm in another clear pointing gesture in the direction of the chicks (see Fig. 7.2), and repeats L's deictic *taj* "there [distal]"—the only deictic in Mal's verbal repertoire at this point.
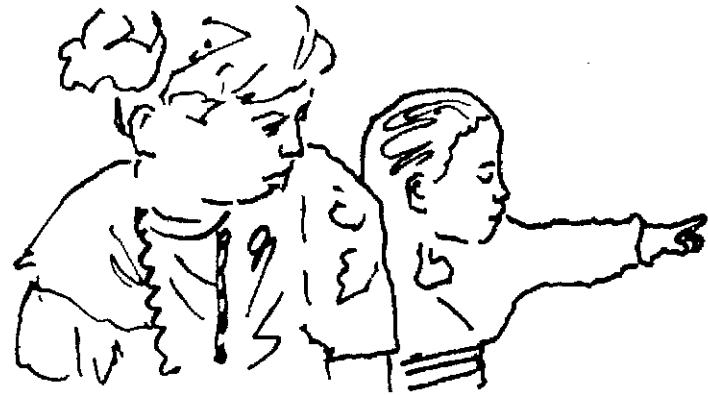
FIG. 7.2. *taj* "Over there."

44 L; taje vi
     Over there, look.
     ((Mal looks, points with her left hand to her left))
     ((holding the pointing gesture as she speaks))
     |

45 M; ta:j
     Over there

46 T; a: ja' le',
     Oh, there?

47   ja' anene' le'e.
     That's your baby there?

48 M; ((nods))

T continues the virtual dialogue at lines 46–47, interpreting Mal's utterance for her and eliciting a nodding assent in line 48.

In Sequence 3, Mal and her interlocutors engage in a little routinized game. The child is now clearly the center of interactional attention, and she is aping for her aunt, closing her eyes as if asleep, and pounding on her own head. Suddenly she pretends to pluck a louse from her head and pop it into her mouth (to bite it—the normal way to kill lice).

(3) V9607:46:39 *oy nan uk* "(I) have (lice), too"

76 L; oy la yuch'.
     She says she has lice.

FIG. 7.3.   *tzakbo* "Grab her (louse)!"

L glosses the routine *just as she would gloss speech*: She uses the "quotative" particle *la*, which marks reported speech[8]: "*she says* she has lice." Mal now takes another "louse" from L's head and "eats" it (see Fig. 7.3). T takes up the commentary.

> M;   *((reaches for L's head and "picks a louse"))*
> 77   T;   oy la yuch' noxtok
>   *She(L) has lice, too, she (Mal) says.*
> 78   an tzakbo che'e
>   *Why, go ahead and grab them.*

Now Mal reaches out in T's direction, extending a pointing hand (see Fig. 7.4), in an obvious request to continues the game. T's reaction (spoken at line 80) makes it clear that she interprets the gesture as having both referential and imperative significance: She offers her own head for Mal to examine.

> M;   *((points at T))*
> 79   T;   aaii
> 80   oy nan uk a'a
>   *Why, perhaps (I) have (lice), too.*

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[8]See Haviland (1987, 1989).
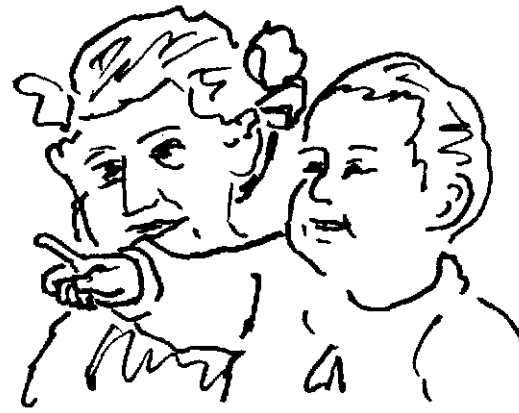
FIG. 7.4.   *oy nan uk* "I have (lice), too."

Immediately afterward, Mal informed me that she wished to pick "lice" from my head, too, using a point aimed at my head, and repeated insistently with a grabbing hand (see Fig. 7.5).

The last of Mal's apparent pointing gestures comes as L carries the child toward the house to put her down for a nap. The sound of a baby crying in a neighboring courtyard elicits an utterance from Mal, which her aunt interprets (at line 148). Mal then amplifies her "commentary" at line 149, supplementing it with a further pointing gesture in the direction of the sound.
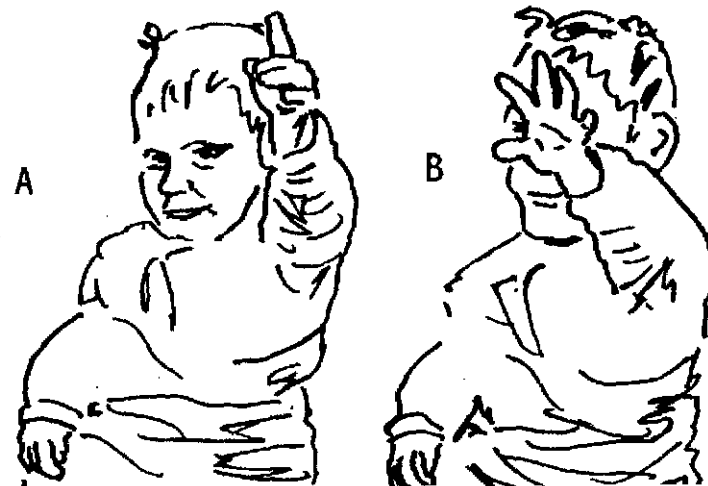
FIG. 7.5.   Reaching insistently for lice.

(4) V9607:49:44

147 M; nene'

         Baby

‹148 T; yu'un la chve' nene'

         (She says that) the baby wants to eat.

149 M; titi'

         Meat

        M; *((points out to left with hand held low.))*

        L; *((L repeats Mal's point as she amplifies her meaning))*

         |

        M; *((Mal raises her pointing hand))*

         |

150 L; sk'an la titi' taj nene' ch'ok'e

         (She says that) that baby wants meat, (that's why) it's crying.

At line 150, L integrates into a single complex gloss the three parts of Mal's communication (the two spoken words and the gesture), simultaneously echoing Mal's point with her own, perhaps to accompany the spoken deictic *taj* "that one." Mal's "pointing gesture" has a trajectory: It moves from low to high, suggesting to observers a relatively distant "referent" (see Fig. 7.6).

MAL'S GRANDFATHER PETUL

To get an idea of the adult pointing that provides Mal with her targets, let us turn briefly to Petul, Mal's grandfather now in his late eighties. Petul's pointing gestures are notable for their formal and conceptual complexity, and for their interactive delicacy.
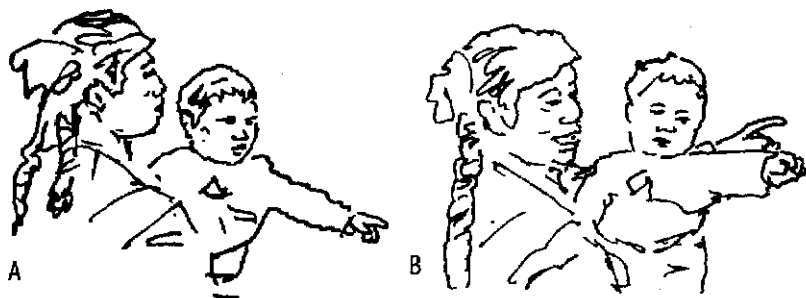
FIG. 7.6. *titi'* "(It wants) meat."

In Example (5), Petul is talking with another man who is stacking boards he has just carried up to the path from his woodlands. Petul has adjacent property, and he is asking about other large trees in the area that might also be used for timber. He accompanies his questions with changes of gaze and hand gestures that both "point to" the areas he is asking about and illustrate iconically aspects of the terrain and the configuration of the objects there.

(5) v9611:1:7

        A: *((left hand out South, back))*

82 p; much'u ma yu'un ali xi ta olon

        Whose is that down below . . . ?

        B: *((fingers pointing and wiggling))*_ _ . . .

83   olon sba li tulantik

        down, above the oak trees.

84   mol tulantik

        big oak trees . . .

85   ali tojtik oy to

        There's still pine there.

86   bu alok'es o ate'

        where you got your wood from

        C: *((outstretched fingers curl inward, hand dips down, held))*_ _ _

        |

87   amol toj vo'ne

        that big old pine tree of yours long ago?

88 m; . ja' yu'un i kitz'intake

        That belongs to my younger brothers.

Petul first extends his arm (A) in the direction of the particular stand of pine trees he has in mind. He then shows by the trajectory of his backhand sweep (B) that the pines lie in a specific direction "above" a different group of oak trees. Finally, he identifies a specific "large pine" by showing with his hand where it stands in relation to the reference point just established (C) (see Fig. 7.7). Petul's pointing hand thus indicates both location via a series of directional vectors, and also relative position (and perhaps contour of the terrain), by changes in shape and finger motion. His gestures add considerable locational specificity to the very general spatial terms he speaks: *olon* "below" and *sba* "on top of."[9]

_____

[9]See de León (1995) and Brown and Levinson (1993) on the use of words denoting *up* and *down* for geocentric location.

FIG. 7.7.   The pine trees below, above the oaks.

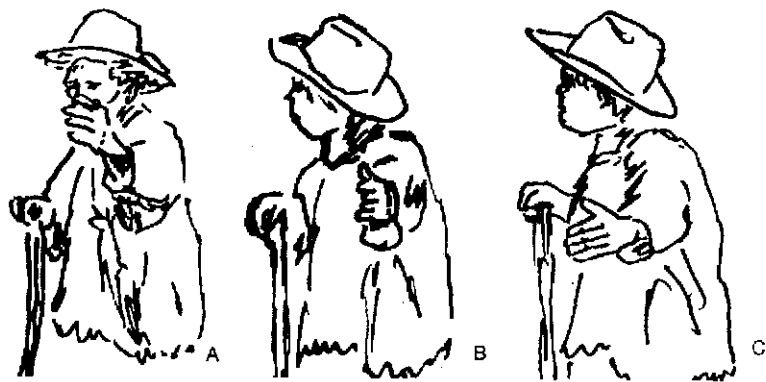Later in the same conversation, the two men discuss several small pine trees wantonly chopped down by thieves. M, the owner, complains angrily of the destruction, directing an extended index finger in the direction (south-southeast from where the men stand) of the affected tract of land (see the left side of Fig. 7.8). Petul shortly thereafter offers a possible explanation: that the gate in the fence around that tract had been left wide open.

(6) V9611: 1:54

((*points and sights along index finger, South-southeast*))

126   M;   animal ep laj yixtalan ya'ele

They just messed with LOTS(of tree)s.

. . .

((*arm sweeps out right, points North-northeast*)

131   P;   ja' nan i level to'ox . li ti' be

Perhaps because before the gate was gaping open

Petul points north-northeast as he speaks of the gate (see the right side of Fig. 7.8). Because the gate in question actually lies to the southeast of where the men are standing, it appears that Petul has *transposed* his perspective to the field where the baby trees were destroyed. Calculating from that position, the gate lies in the direction Petul indicates.[10] For such transposed directional gestures to work, the interlocutors must share knowledge of both the geography referred to and the principles of direction as applied to gestures.

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[10]Systematic uses of such directional transpositions in gesture are described in Haviland (1993, 1996b).
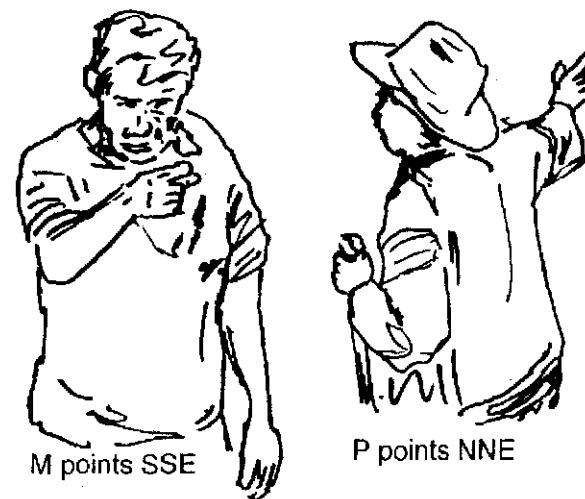
FIG. 7.8.   The gate was open before.

One can also use precisely oriented referential gestures in a hypothetical or imagined space, incorporating as appropriate props from the local surround (Haviland, 1998a, 2000). Petul, for example, once described to me how to make a cane press, known in Tzotzil as *k'av-te'* "split wood." The contraption uses two logs mounted on supporting posts; twisting the logs squeezed the juice out of cane stalks inserted between them. To illustrate one of the supporting posts, Petul used a real house post conveniently located to the right of where he was sitting. The other supporting post he created with gestures in an imaginary space to his left. To show how the cross bars were inserted into the posts he pointed to his right with his index fingers, using the real house post as a prop, first with a single index finger to show where holes were drilled (see Fig. 7.9A), and then with two fingers (Fig. 7.9B) to represent the bars themselves. The transition between A and B was rapid: first pointing to the house post (standing for imagined cane-press post) with an outstretched index finger, then actually touching the post as he said *xi* "thus," then swiftly extending the second finger as he said *xchibal* "both (bars)."

(7) K'av-te'

A: ((*index finger extended out, touching house post*))

3   p;   xch'ojojbe sat xi to vi

they put holes in it this way, see?

FIG. 7.9. *kav-te'* "Cane press"—"hole(s), two sticks."

B: ((two fingers extended, still touching post))

6 p; te matz'al xchibal li te' xi to vi

Both of them stuck in this way, see?

To refer later to the two bars, Petul again used his index fingers, first illustrating how the crossbars connected to an imagined post to his left (C, in Fig. 7.10), then extending both index fingers in parallel back to his right (D) to show how the bars were supported between the two posts.

C: ((index fingers of both hands crossing to left))

12 ochem xchibal xi ta jote

And the two entered thus, on the side.
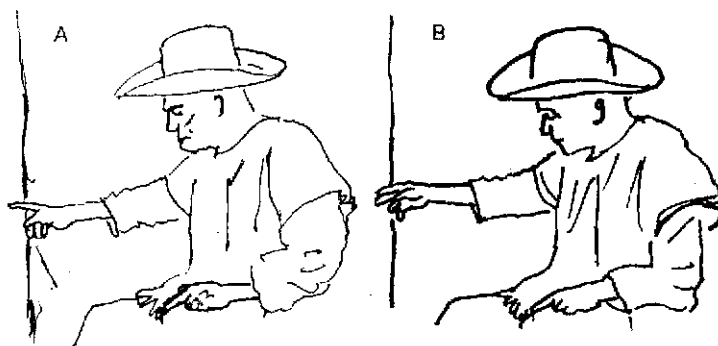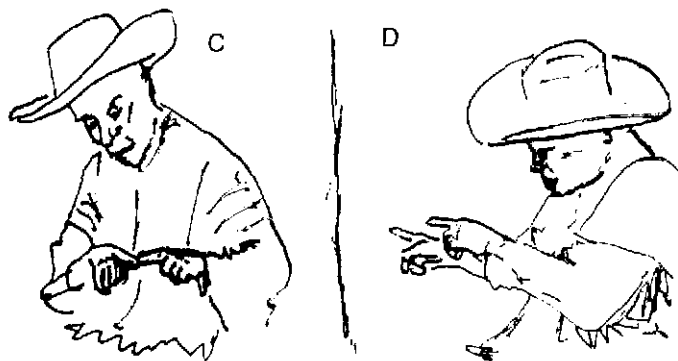

FIG. 7.10. *k'av-te'* "Cane press"—"two bars."

D: ((both index fingers extended pointing to right))

13 ochem xchibal xi to ta jote

The two entered thus, on the side.

Petul ends his illustration of the machine by bringing both index fingers together in the gesture space in front of his body (Fig. 7.11) to illustrate how the two bars worked together to crush the sugarcane.

As a final example, consider how Petul uses what I call *sociocentric* pointing as part of a complex genealogical discussion. Petul is telling me about the relatives of a recently deceased man, José. To locate José's father, whom I call Mol Sebastian, in genealogical space for me he glances up to the east and raises a pointing hand (see Fig. 7.12). This gesture (also shown as A in Fig. 7.13) points toward where one of José's surviving relatives, Maria, now lives. Maria is my *comadre* or "co-mother," a fictive kinswoman related to me through shared ritual obligations, and Petul thus uses *my* kinship relations to anchor his descriptions of the referents. The woman Maria and the recently deceased José were both children of the same father, Mol Sebastian. Next, to be sure I know about whom he's talking, Petul further identifies Mol Sebastian as the grandfather of my *compadre* or "co-father," Juan, and Maria as his mother. Petul now points back over his right shoulder (at Fig. 7.13B) toward where Juan lives with his father-in-law, Domingo.

FIG. 7.11. "Together."

FIG. 7.12. Sociocentric pointing: "your compadre."
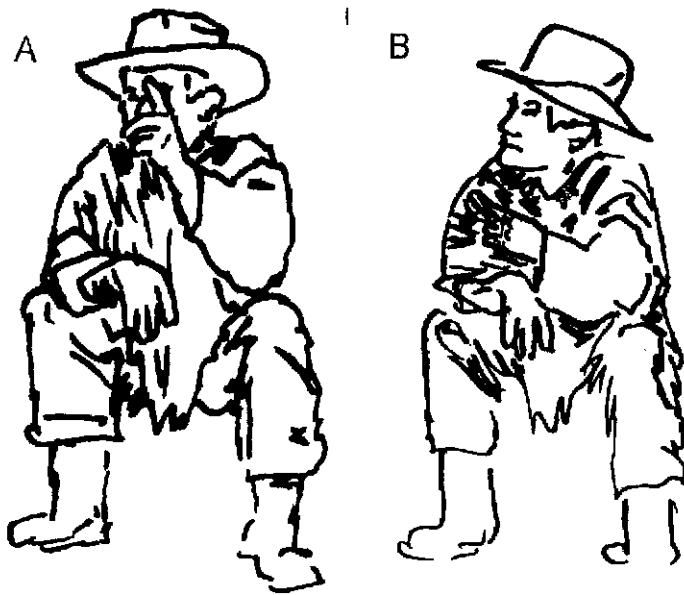
FIG. 7.13. "Your compadre."

(8) Chon

A ((left hand points up east))

13 P; ja' stot ti yajnil ti akumpa Manvele

That was the father of the wife of your compadre Manuel.

14   smuk'totik i xun

the grandfather of Juan

B: ((left hand points back northwest, behind))

15   akumpa xun te sni' li romine

your compadre Juan, the son-in-law of Domingo

. . .

Another son of Mol Sebastian Petul identifies as the "brother-in-law of Domingo," but this man had a different mother, Mol Sebastian's first wife. In speaking about this other woman he points (at Fig. 7.14C) somewhat vaguely to his right, south, perhaps toward the house of her son, "Domingo's brother-in-law," whom Petul has just mentioned. However, the original deceased man José and my previously mentioned comadre Maria shared the same mother, as he tells me (at Fig. 7.14D), once again pointing in the direction of Maria's house.

36   sbol li romine

The brother-in-law of Domingo

FIG. 7.14. "His mother."

Mol Sebastian = first wife

= second wife

Domingo's
bro-in-law

José: the   Maria: = my compadre
deceased   my   Manuel
                  comadre

my compadre
Juan

FIG. 7.15.   The deceased José's (partial) genealogical tree.

C: ((index finger extended right, level, palm up))

37   pero . jun o sme'
       "had a different mother

       . . .

       D: ((index finger up, pointing east))

45   Ja' xa sme'ik taje
       But that was their mother

The genealogical relations mentioned are diagrammed in Fig. 7.15, where the equals sign (=) symbolizes a marriage.

Petul constructed a genealogical chain built around people he knew me to be able to identify, indeed, using my own fictive kinship links with them as a basis for his characterizations. His gestures in turn indexed the social geography of the village where we sat (see Fig. 7.16), and they functioned much like spoken anaphors to refer to, distinguish, and locate individuals. However, the precise directions of his pointing gestures, as well as his combinations of locational index with characterizing words, required indirect "sociocentric" inferences to establish links to specific individuals, a matter to which I return later.
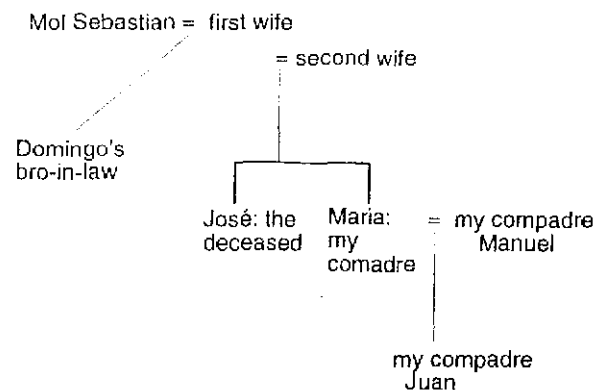
COMPLEXITY IN POINTING

Mal's gestures and those of her grandfather illustrate the complexity of pointing and its close integration with spoken language. Although pointing may seem a primeval referential device, it is far from simple: It is complex
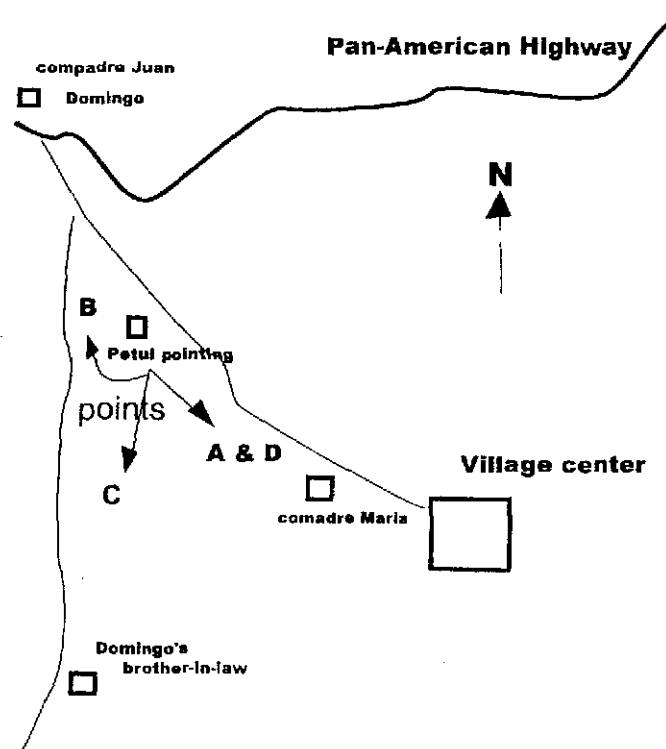
FIG. 7.16.   Map of the village, showing Petul's gestures.

(a) conceptually, (b) morphologically, (c) linguistically, and (d) socioculturally as a device for communication.

Pointing Is Conceptually Complex

Elucidating a central Peircean trichotomy of signs that distinguishes icons, indexes, and symbols, Silverstein (1976) in a classic paper underscored the dual nature of all indexical signs, including pointing gestures: They can have both a creative (or "entailing") relationship and a dependent (or presupposing) relationship with the "context" they index. When Petul points in the direction of my compadre's house in order to help me identify the particular woman—this compadre's wife—to whom he refers, he exploits a particular preexisting geographic and social space in the village, and our shared knowledge of who lives where within it. To be successful as a referring device—to allow me to identify the woman he has in mind—his ges-

ture *presupposes* a set of spatial relationships and my knowledge of them. The spatial context thus comes first, and the pointing gesture both depends upon and exploits it. Contrast Petul's *creative* use of the house post and the space in front of him to describe the cane press; his gestures do not rely on a previously existing space of potential referents but instead *populate* the space, establishing their referents by placing them into the interactive arena. The house post becomes a support, and Petul's pointing fingers create the "holes" into which imagined cross bars "fit." Indexical signs, in Silverstein's parlance, "project" their contexts (Silverstein, 1993): They both draw on presupposable aspects of, and help to create and structure, the contextual surround.

The dichotomy between relatively presupposing indexical signs and relatively entailing or creative ones is actually a continuum, and like other such signs pointing gestures typically have both creative and presupposing aspects. Even little Mal, pointing in roughly the same direction in three separate utterances, indexes presumed referents of quite different characters: once the chickens that are within her view (Fig. 7.2), once a neighbor child out of sight but whose cries can be heard (Fig. 7.6), and once her mother, nowhere to be seen but departed in the indicated direction (Fig. 7.1).

That interactants rely on mutual knowledge or common ground (which is precisely what is presupposed or creatively altered by indexical signs) is nowhere more apparent than in the "meaning" of *direction* in pointing gestures. In other work (especially Haviland, 1993, 1996a) I have argued that pointing makes crucial use of highly structured conceptual spaces that include points, vectors, and areas, all of which may be variously presupposed or created by the corresponding gestures. When Petul remarks to me, "That was the father of the wife of your compadre" (see again Fig. 7.13A) by the time he says the Tzotzil word for *his wife* his pointing finger has already located my compadre geographically from where we sit. The direction of his gesture (roughly toward the house of the compadre in question) helps fix his referent for both of us, although in slightly different ways. His gesture is not toward a named individual but rather (as I must infer) to a house compound. He knows to which person he is referring, and he reckons that person's place of residence to be a salient identifying feature for me. I must narrow down the *comadre* in question—one of many—taking a hint from where Petul has placed her husband (my *compadre*) on the landscape.

Moreover, pointing transposes and laminates these conceptual spaces in characteristically complicated ways. In the second frame of Fig. 7.8, Petul points to the north while referring to a "gate." The gate in question actually lies south of where he stands, but the two interlocutors have relocated themselves discursively in a field still farther to the south. Petul can point north and be understood thus to index the perspective of a man in the field
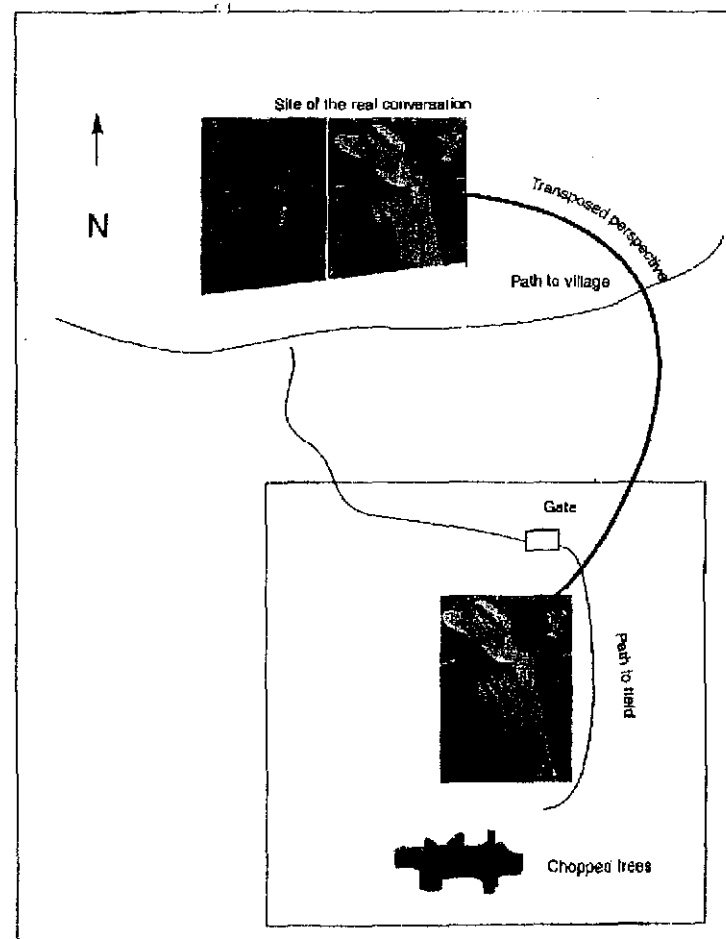
FIG. 7.17.   Transposed perspective in pointing.

where the destroyed trees lay, looking north *from there* to the gate both men can identify (see Fig. 7.17). That is, Petul and his interlocutor must imagine themselves to be standing not on the path to the village where they actually are, but rather in the field where the fallen trees are. At the same time, they must hold constant the directional orientation of Petul's gesture, transposing only its origo, to locate the gate conceptually. Such transpositions, signaled and at once exploited by pointing, are perhaps the clearest expression of the conceptual complexity underlying such indexical reference.

Pointing Is Morphologically Complex

In the exhibits, Mal and Petul point with outstretched index fingers using a familiar "pointing hand." Nonetheless, in Zinacantán in addition to the "index" finger various body parts (as well as other objects—hoe handles and machetes, for example) are used to "point out" things, and there are multiple accompanying bodily attitudes. Gaze alone can do the dual job of calling one's interlocutors' attention to something and indicating a direction, and one can use not only the eyes but also the chin, the shoulders, or even the lips.[11] Before his first pointing gesture in Fig. 7.14, Petul first looked up with a brief eyebrow flash in the direction he was about to indicate, anticipating his reference to my compadre who lived over that way. Moreover, although Mal points with a loose fist and outstretched index finger (a hand shape she began to master at about 11 months of age), her grandfather's gestures show at least one further standardized Zinacantec handshape for "pointing": the flat hand illustrated in Fig. 7.6.

Petul uses the flat hand (with the palm held vertically, thumb side up, fingers grouped and extended outwards) to indicate vectors or directions, in contrast with the extended index finger, which seems to denote individual referents located in particular directions. A distinction akin to that between linguistically marked genders or noun classes appears to be conventionalized here in symbolic hand shapes[12] that distinguish reference to individuals from reference to pure direction.[13] The flat hand apparently indicates "that away" as opposed to the index finger's "that one."

As we have seen, Tzotzil speakers can also indicate direction by gaze alone (sighting a "point" above the horizon, for example, to indicate a time of day), or by a combination of components: Petul sights along his outstretched hand in Fig. 7.7A, and his interlocutor does something similar in Fig. 7.8. Both actions suggest that there is, indeed, something to "see" in the direction of their gaze. All in all, the morphological complexity of "indicating direction" reminds us of further conceptual indeterminacies with the notion of "direction" itself. In which space are the directions to be calculated? Are they attached to individual loci, to pure vectors, to orientations (e.g., "running north-south," specifying, as it were, the shaft of an arrow but omitting the arrowhead), or to areas? At what level of resolution are entities specified? What sorts of perceptual access are available (if any, since one can point to imaginary entities in virtual spaces)? And so forth.

[11]See Sherzer (1972).

[12]See footnote 1 for another example of such gestural gender marking, symbolized in handshape combined with orientation.

[13]A similar distinction can be observed in the gestural accompaniments to the ubiquitous Guugu Yimithirr directional terms described in Haviland (1993), especially in gestures that accompany or appear to replace the "side terms" that denote such notions as "on the eastern side." See also Haviland (1979, 1998b).

Although a pointing gesture indexes, in the Peircean sense, the direction it is meant to signify—the direction "meant" is recovered from directional aspects of the physical production of the gesture itself, although perhaps in complex or transposed ways—other aspects of the significance of the gesture may be iconically encoded. A clear example is Mal's "grabbing" gesture in Fig. 7.5, where the form of her open, grasping hand iconically "projects" its "referent"—presumably an imagined louse—as being something graspable. (Contrast, for example, an outstretched open hand with palm face up—a familiar begging gesture that combines a conventional, symbolic action with an iconically suggestive handshape—"projecting" a desired object that can be laid in such an open hand.)

Moreover, in addition to the familiar sweeping rise of the hand or punctual extension of an outstretched limb, other sorts of formatives, including motion, accompany apparent pointing gestures. In example 5 Petul moves his outstretched flat hand evidently to indicate both the direction of the place he has in mind, the lay of the land there, and the location of one large pine in relation to a stand of oak trees. He traces details of a trajectory that corresponds to the path leading to the place he speaks about, mapping in the air relative locations and directions. Using a different convention,[14] he appears to indicate the relative distance of referents by altering the height of his index-finger point. For example in Fig. 7.14 (A and D), he suggests that the compadre he refers to with a raised pointing gesture is relatively distant, by comparison with the other compadre he mentions, toward whose house he gestures with a relatively lower backward point (Fig. 7.14B).

Different aspects of the form of pointing gestures thus relate to different "semantic domains": not just direction, but also aspects of shape (or manipulability), and proximity. The list does not stop here, however, as pointing gestures also seem to encode information about individuation or quantity. Petul's description of the cane press provides a clear example. In Fig. 7.10, he uses one outstretched finger to illustrate the hole drilled in the support posts for the cane press. He adds a second pointing digit when he mentions the second crossbar, and he continues to model the double bars with two fingers (from one hand or both) as he "points" to show where the bars are attached. In each case, his double fingers move into action just as he pronounces the corresponding word xchibal "both."

In talking about his interlocutor's pine tree, in example 5, Petul also appears to use gesture to individuate. He has located a stand of trees with a sweeping pointing gesture; when he mentions a specific tree—amol toj "your big pine tree"—his hand, still extended in the appropriate direction, appears to dip, suggesting that he now refers to a single known tree.

[14]The association of height of pointing gesture with distance of referent may be a widely shared convention; see Calbris (1990).

Slightly different is Petul's gesture in Fig. 7.14C. He has been enumerating different relatives of the deceased man, relating them to fictive kin of mine. Two of the individuals he has located clearly in social space, pointing with an outstretched finger in the direction of their houses at A and B. As he mentions a third relative, who had a different mother from his previous referent, he says *jun o sme'*, literally "one other [his] mother," simultaneously turning the hand palm upward and extending another outstretched index finger. The change in palm orientation seems to correspond to Petul's contrast between the two groups of people, corresponding to the two wives and families of Mol Sebastian. The extended finger appears precisely as Petul, in word and gesture, individuates his new referent—the old man's long deceased first wife—placing her in a spot in the interactional space in front of him. He thus gesturally distinguishes her from the second wife, to whom he returns at D, and who has a specific if indirect locus in space defined by the house compound of her living daughter.

The complex morphology of pointing gestures means that they are typically not "simple referring devices" but rather complex semantic portmanteaux. Indeed, pointing gestures seem much like spoken deictics, linking in a single morphological guise many of the same semantic domains—quantity, shape (or "gender"), and proximity—that characterize spoken demonstratives.

Moreover, the link between a "natural" gestural expression of a notion like *one* (a single raised digit, for example) and referential pointing suggests the possibility for gesture of a process akin to "grammaticalization." In particular, it recalls two paradigm cases of historical developments in spoken languages: the movement from demonstrative to definite article (Greenberg, 1978a), and from the numeral "one" to an indefinite marker (Givón, 1981; Hopper & Closs Traugott, 1993).[15] Some of Petul's pointing suggests that his "pointing hand" is at once a conventionalized individuating gestured numeral "one" merged with a pure directional vector "there/that." The directional significance of the deictic element (the fact that the finger points a certain way) may be bleached away, leaving only the gestural equivalent of "definiteness" ("this" as opposed to "another'), and the icon-

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[15]The well-known use of pointing gestures as full pronouns in ASL (Bellugi & Klima, 1982) suggests a similar conclusion. Consider the following just-so story, adduced to explain the development of Germanic articles from cognate demonstratives: "The natural way of giving linguistic expression to the desire to draw attention to the definite or familiar is to qualify the noun in question with a demonstrative pronoun, i.e. with a word meaning 'this' or 'that' or both. But in this new function, the demonstrative force of the word automatically diminishes, eventually disappearing altogether; when this happens the article is born" (Lockwood, 1968, p. 86), quoted in Heine, Claudi, & Hünnemeyer, 1991). Suggestive, too, is the link between demonstratives and relative clause markers (see Heine et al., 1991, p. 183ff), in light of McNeill's suggestions about the metanarrative functions of deictics and the gestures he calls "beats" (1992, p. 188ff).

ically signaled "oneness" may be conventionally reduced to the assertion of individuation and existence ("[He had] *another* wife").

Pointing gestures serve clear anaphoric ends, even in the short exemplary fragments of Mal and Petul's discourse. For Mal, pointing gestures substitute for arguments, and for Petul they act as virtual resumptive pronouns. Moreover, they are integrated into discourse in an especially languagelike way, a topic to which I now turn.

Pointing Is Linguistically Complex

Standard wisdom links pointing to speech directly. Here is a particularly clear account that divides a pointing event into subcomponents:

> Suppose George points at a book for Helen and says "That is mine." His act of pointing is the index (*index* is Latin for "forefinger") and the book is the object. His intention is to get Helen to recognize that he is using the index to locate the book for her. To that end, he must point while she is attending. He must locate the book for her by the direction of his forefinger—a physical connection. And he must get her to see that he is pointing at the object *qua* "book" and not *qua* "example of blue," "piece of junk," or whatever. (Clark, 1996, p. 165)

On Clark's account, George wants to refer to the book, and he must locate his referent in space and time for his interlocutor. He accomplishes this dually, in this example, by pointing and simultaneously talking. Moreover, in this hypothetical case the pointing gesture is evidently linked to a specific spoken element, the demonstrative *that*. Clark argued that "[i]n language use, indicating is usually combined with describing or demonstrating" (1996, p. 168), citing as the paradigm example the use of demonstrative pronouns, linguistic elements sometimes analyzed as virtually requiring gestural specification (Levelt, Richardson, & La Heij, 1985). Of course, there is no necessity that the locating be done both by gesture and the accompanying "characterizing" speech,[16] although this is perhaps a typical case.

In the naturally occurring examples from Zinacantán one can thus ask how pointing gestures are synchronized with the accompanying talk. In Petul's conversation in the forest, some of his directional pointing follows Clark's general description of "composite signals" (1996, p. 176). In Example 5 at line 82, just as he says the demonstrative *xi* "this way," his hand sweeps out in the direction of the field he is speaking about. He further

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[16]Indeed, the division of labor between pointing gesture and accompanying talk may be quite different, as when Petul characterizes the two hypothetical crossbars of the cane press both in words and with double extended fingers.

specifies the direction in words: *ta olon* "below," referring to the lay of the land. Here demonstrative, descriptor, and pointing gesture all coincide temporally and complement one another referentially.

However, when the two men talk about the destruction of small trees, the pointing gestures bear a more problematic relation to the talk. In example 6, both men point, but neither issues an explicit spoken demonstrative. When Petul refers in speech to the "open gate," one might associate his gesture with the (transposed) location of his referent. In the same exchange, Petul's interlocutor's sights along his pointing finger exactly when he says *ep* "lots," referring to the baby trees felled by the thieves. Both gestures are simultaneous with descriptive predicates, and in neither case is there a clear spoken referent—demonstrative or otherwise—to associate with the gesture. Petul's description of the cane press at example 7 uses spoken demonstratives (*xi* to "this way"), but now his pointing gestures are produced well before the demonstratives are pronounced. Similarly, in example 8, Petul makes a pointing gesture precisely when he begins to utter the noun phrase associated with each new referent (relatives of the dead man), but the "locating" relation that may typically obtain between referent and index is nowhere expressed in words. (Only in line 45 is there a verbal demonstrative, *taj* "that one yonder," but the gesture has been in place since the beginning of the breath group.)

One may conclude that although pointing gestures may frequently, perhaps even canonically, be associated both referentially and synchronously with spoken demonstratives, such a link is not always present. Spoken demonstratives, of course, occur in nondemonstrative uses (e.g., as relative pronouns), which expect no gestural complements. And pointing gestures can occur emancipated from any specifically indexical expressions, perhaps even with no associated verbalized referents.

This functional complementarity (or autonomy) between gesture and speech is even clearer in the utterances of young children. Mal's pointing gesture in the opening example (Fig. 7.1) appears together with or just after her spoken *me'* "mother." Later in the sequence, having been instructed to look at some baby chicks *taj* "over there," Mal first looks, then points, and while holding the point repeats *taj* (Fig. 7.2). In the lice-picking game, Mal makes her pointing and reaching gestures without words (although she utters a little demanding syllable, *aa'*, when she insists on picking *my* lice at Fig. 7.5). In each of these cases, there is no clear synchronization between word and point. If there is a "lexical affiliate" in any of these cases, it is *taj* "over there"—a deictic that, as we have seen, frequently receives gestural supplementation in adult speech. Here the gesture comes well before the echoed verbalization.

In the other cases, either the gesture is independent of speech, or it seems to act as a kind of proto-syntactic frame for which the single word ut-

terance is more like an argument. Indeed, in example 1 the adult gloss for Mal's little performance is exactly "Mother went." The caregivers appear to treat the *combination* of word and gesture as a virtual (proto-syntactic) construction, with the spoken *me'* "mother" providing the "subject" and the pointing gesture supplying the predicate (something like "[go] thataway").

In Fragment 4, the relative timing between Mal's words and her gesture is more complex. A baby is heard crying in a neighboring yard. Mal begins the sequence with a spoken word, *nene'* "baby." Her caregiver provides a fuller gloss—"(She says that) the baby wants to eat"—after which once again Mal speaks a word, *titi'*, a baby-talk word for "meat." Only now does her gesture appear: She points in the direction of the baby's cry. Once again, the caregiver offers a "gloss" that encompasses the whole sequence, Mal's two words and her pointing gesture: "(She says that) that baby wants meat, (that's why) it's crying." This holophrastic gloss also appears to treat gesture as a proto-predicate (or at least some kind of virtual frame) to which the spoken arguments are attached.[17]

Although Tzotzil provides no satisfying metalinguistic label for "pointing gesture," the fact that caregivers gloss children's discrete gestures as virtual equivalents to speech suggests that the movements are both segmentable and recognizable in the stream of communicative behavior. They are treated much the way spoken deictics are treated, integrated into metalinguistic glosses just as spoken counterparts might be. In the examples, we see two strategies for glossing the child's intended communications. One uses the explicit verb of speaking *xi* "[she] says," as illustrated in Example 1. The other attaches the "hearsay" particle *la* to a putative interpretation, marking it as illocutionarily attributable to the gesturer. Yet although they are treated metalinguistically as "utterances," the gestures are synchronically autonomous, or at least are potentially decoupled from any explicit verbalizations.

The influential typology of gestures known as "Kendon's continuum" (McNeill, 1992, p. 37; Kendon, 1988) orders different sorts of gestural phenomena according to their "languagelike properties" and their relationship to speech. It puts "gesticulation"—which McNeill characterizes as "id-

osyncratic spontaneous movements of the hands and arms accompanying speech" (1992, p. 37) and which he takes to include deictic gestures such as pointing—at the least languagelike end of the spectrum. Such gestures are opposed, for example, to conventionalized "emblems," which must meet languagelike standards of well-formedness and which, unlike gesticulation, 'have as their characteristic use production in the absence of speech" (McNeill, 1992, p. 38). There is thus an apparent paradox. Deictic gestures are included among the least languagelike gesticulations in terms of their formation and their characteristic appearance *together with* verbalization— on some accounts, necessary accompaniments to such words as demonstratives. Yet in terms of their segmentability, glossability, and potential temporal autonomy from speech (not to mention the apparent conventions of well-formedness that may sometimes apply to them), pointing gestures are much more emblematic in character than, for example, iconic gestures.[18] Indeed, the considerations in this section suggest that pointing is simply *part of language*, albeit an unspoken part: like emblems, autonomous from speech while serving speechlike ends, and also unlike emblems tightly linked pragmatically to such parts of spoken language as deictic shifters.[19]

Pointing Is Socioculturally Complex

Let me conclude my excursion into the wilds of pointing[20] by returning to the ethnographic interests that prompted it in the first place. Spoken language involves elaborate descriptors, lexical hypertrophy, and a variety of devices to emancipate interlocutors from the confines of the immediate here and now. In some cases—the "essential indexicals" (Perry, 1979)— links to this I-here-now are necessarily built into language. However, in many other cases—the shifty inspecificity of demonstratives, for example— explicit definite descriptions might do the job better, on at least some philosophers' semantico-referential accounts of language. Why say *that* when one could avoid confusion by intoning *the blue book balanced on the corner of*

[18]As we have seen, pointing disobeys the apparent tight synchrony between iconic gestures and their "lexical affiliates" (Kendon, 1980a; Schegloff, 1984), in which iconic gestures just precede or coincide with the associated words.

[19]Little wonder, if this is true, that in signed languages deictic shifters *are* pointing gestures.

[20]In the conference to which the original presentation of this chapter was a contribution, one section was devoted to the study of "pointing in the wild." As a specimen collector, I recognize that my reflections on the particular items pinned by their wings to my ethnographic wall have been collectively informed by the comments and criticisms of other participants in the conference. I wish particularly to thank Laura Petitto, Susan Goldin-Meadow, Adam Kendon, Herb Clark, and especially Chuck Goodwin and Danny Povinelli for their insights on this material, insights that I have not always managed to assimilate into my own understanding.

the desk in Room 114? And why, of all things, point, when the resulting referential indeterminacy is potentially even worse?[21]

Common arguments about the efficiency of linguistic expressions (Barwise & Perry, 1983) go a long way toward answering such deliberately naive questions. Petul's conversation with his interlocutor in the forest illustrates how pointing and the judicious use of spoken demonstratives can replace whole reams of difficult explanation. Indeed, the two men largely *work out* in the process of description just what it is they are describing— among other things, *which* stand of trees in *which* field. However, other communicative virtues of pointing—some linked firmly to interactive sociocultural practice—emerge from exhibits like those I have adduced from Zinacantán.

For one thing, pointing can accomplish otherwise impossible reference. Mal at the "one-word stage" has a highly limited repertoire of referring expressions, the majority of which are verbs.[22] When she points to indicate a referent, no words are spoken, largely because she has no words to speak. When there are no obvious available descriptors (e.g., when one can't think of the appropriate words) adults have recourse to the same device.

More interesting is the expressiveness of the unspoken. The well-known Australian prohibition on speaking the names of the dead is a single example of more general culturally driven reluctance to speak certain words or names, prohibitions that can be neatly observed and circumvented by pointing. A large part of Petul's gesturally rich genealogical discourse in example 8 is motivated by strained relations with some of the individuals he must mention, whose usual names and exact kin relations he is unwilling to state explicitly. At the time he was in an active feud with both my compadres Domingo and Juan (Domingo's son-in-law), and thus he chose both an alterocentric descriptive phrase—based on my relationship with them rather than his own much closer genealogical tie—and a distancing gesture to insert them into the conversation. That is, although there were many referentially clearer alternative ways for Petul to identify the people in question, the indirection of his chosen means of referring—pointing (sometimes fleetingly and almost covertly, as in Fig. 7.13B) in the general direction of houses of relatives of the referents—invited me to infer about whom he was talking without having simply to come out and say their names plainly. The Cuna "pointed lip gesture" (Sherzer, 1972) sometimes associates derogatory, if not downright vulgar, connotations with its referent, and thus has the virtue of silence. Signaling a pick in basketball or a desired set in volleyball, with a pointing finger discretely hidden from certain others' eyes, is a related phenomenon.

[21]See Wittgenstein (1958, section 85) and Quine (1960).

[22]See de León (1999).

The interactive potency of pointing can go further still. Zinacantec children are notoriously shy around non-family members, and in some circumstances they simply will not talk to strangers. When she will sometimes not *say* what she wants, Mal is nonetheless often willing to *point*, as if the words are more difficult (or more dangerous) than the gesture, or as if the gesture is less compromising than the words.

Most striking to the anthropologist, perhaps, is the inferential and interactive potency of pointing. Indexicals are, in general, potentially *creative*; they effect changes on the "spaces" they implicate, populating them, transforming them, and rendering these changes exploitable in subsequent interaction. To have such an effect, however, they draw interlocutors into active participation. Petul, when a younger man not yet deaf and blind, was renowned in Zinacantán as a master speaker. His graphic description of the cane press, in which he virtually reconstructs the contraption before my very eyes, is a mild example of the techniques he employs to involve his interlocutors in his narratives. A central device for invoking the visible and the invisible, the present and the absent, in Petul's discourse is pointing.

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