Why Pointing With the Index Finger Is Not a Universal (in Sociocultural and Semiotic Terms)

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This chapter examines cultural variation in pointing gestures and discusses what this reveals about cross-cultural differences in the semiotics of pointing. In particular, I use data from speakers of Arrernte, a central Australian (Pama-Nyungan) language, to challenge and clarify two widely held views: (a) that pointing with the index finger is a universal human behavior, and (b) that pointing with the index finger is not socially transmitted but is a basic (natural) form of reference. Although some Arrernte pointing forms, including an "index-finger point," may look familiar to "Standard Average Europeans," a close examination of the form and function of such pointing gestures reveals that they are, in fact, quite culture specific in the range and nature of allomorphic variants of the points, the range of possible interpretations given to the points, the body space they are deployed in, and typical contexts of use. In short, I utilize data from an Australian cultural group that appears to manifest index-finger pointing to argue that pointing with the index finger is *not* a universal in sociocultural and semiotic terms. Pivotal in this argument is the fact that the Arrernte have both a fixed metalanguage for talking about pointing, and they have their own native theory concerning how pointing is a structured semiotic that plays a critical role in interactive communication.

In a number of recent papers, Haviland (1993, 1996a, 1996b) used data from speakers of another Australian language, Guugu Yimithirr (Pama-Nyungan), to make several important observations concerning pointing as a culturally and semiotically complex phenomenon. His work concentrated

primarily on broader pragmatic and discourse-functional issues concerning pointing in relation to both speech and cognition, but has not looked in detail at the formal properties of pointing gestures, nor has it explored the degree to which Guugu Yimithirr speakers are conscious, or meta-aware, of their pointing behaviors. I am interested in meta-awareness and available standard terminology for methodological reasons: Such evidence allows us to more readily explore the boundary between those aspects of a system that are above the level of conscious awareness and those that are below it, and thereby allows one to investigate the nature of conventionalization and sign structure more clearly. So, in what follows, I extend and complement Haviland's research by discussing the role of pointing as it is understood and described by a different Australian group. In particular, I hope to demonstrate that the Arrernte native classification and theory of pointing add another dimension to the discussion of pointing that allows us to step back and take a fresh view of what may be culture specific and what may be universal. As far as the index finger is concerned, we see that, cross-culturally, the index-finger pointing form varies in the functions it is used for, and that the functions "Standard Average Europeans" attribute to the index-finger point are regularly, and conventionally, carried out by other morphological forms of pointing, including other body parts beyond the hand (e.g., lip pointing and eye pointing). Thus, there is no abolute universal alignment of form and function.

This chapter is organized as follows. After describing and assessing previous claims concerning index-finger pointing, I describe the Arrernte folk classification of pointing. Then, I briefly discuss the teaching and transmission of pointing behavior. Finally, I discuss the bearing that the Arrernte facts have on the two main claims that I am challenging in this chapter, and I conclude.

WHAT IS MEANT BY THE PROPOSITION THAT "POINTING WITH THE INDEX FINGER IS A HUMAN UNIVERSAL"?

Despite that researchers generally lament that there has been little cross-cultural research on gestural behavior, it has still been common to regard deictic pointing with the index finger as a human universal. Moreover, it is no trivial universal; the "index-finger point" has been taken as a critical stepping-stone in the evolution of language (Hewes, 1981, 1996; Rolfe, 1996), a key distinguishing feature between humans and other primates (Povinelli & Davis, 1994), an innate component of the human language acquisition device (Bates, Oconnell, & Shore, 1987), a form of reference basic to human nonverbal communication (Butterworth, 1995), and "the royal

road to language for babies" (Butterworth, chap. 2, this volume). The following are typical of the statements made:

> Pointing with the index finger is a universal human (*Homo sapiens*) behavior found in cultures around the world. (Povinelli & Davis, 1994, p. 134)

> The use of an outstretched arm and index finger to denote an object in visual space may reflect hominid evolutionary adaptations of the index finger and thumb and be species-specific to man. . . . *The most plausible interpretation of our data, when it is taken in this wider context, is that pointing is not socially transmitted, nor is it derived from prehension. Our findings support the view that pointing is a species specific form of reference that is basic to human nonverbal communication.* (emphasis added; Butterworth, 1995, pp. 334–335, based on laboratory child acquisition studies of children to 2 years, in a Western context)

> The most popular form of deliberate guide-signing in our species is undoubtedly the Forefinger Point. (Morris, 1978, p. 64)

Two contributions to this volume that argue carefully, and quite persuasively, for the privileged nature of the index finger in pointing are those of Butterworth and Povinelli et al. However, when, for instance, Povinelli and colleagues (chap. 3, this volume) say of the index-finger point that "to our knowledge, the pointing gesture has been found in every human culture examined thus far," how are we best to interpret the claim? What is the pointing gesture such that it can be claimed to have been found in each culture examined? Because at this point in their discussion they are only discussing the structural form of the point—taking Franco and Butterworth's (1996) definition of the canonical pointing gesture as "the simultaneous extension of the arm and index finger towards a target"—one might assume they are merely talking about a universal ability to extend one's index finger and move it into (or toward) a position (as in picking one's nose; or poking someone in the ribs; or reaching to touch something with the tip of the index finger). If this is the extent of the universality claim, then there are no objections. Certainly a prerequisite to being able to point with the index finger is the ability to physically isolate the index finger, and Povinelli and Davis' (1994, p. 137) findings that there is "a topological difference between chimpanzees and humans in the resting state of the index finger" and that "[h]umans appear to possess a natural inclination for the index finger to protrude above the level of the other fingers, whereas chimpanzees do not" are instructive regarding species-specific morphological differences that could, down the line, influence the manifestation of the structural aspects of pointing as a semiotic act. But those same morphological differences would presumably influence countless different potential uses of the extended index finger (either for instrumental use or for other gestures beyond pointing, like baton beats or gesturing the number "one"). It

seems clear, however, that Povinelli and his colleagues have a stake in more than just the universality of the structural form of pointing because they are interested in the "psychological operations that attend (and perhaps cause)" pointing as a communicative referential behavior. Moreover, I suspect the definition of the structural form they have chosen is not as free of such psychological interests as they might like us to believe because, in its usual application by developmental psychologists, the actual interpretation of the definitional element *towards a target* already precludes a number of behavioral acts (ones not considered to be referential pointing).

As an initial challenge to the focus that has been placed on the index finger in pointing, I take a brief look at what we know about the distribution of index-finger pointing cross-culturally. For current purposes, I presume that researchers at the very least identified the three criteria offered by Rolfe (1996, p. 776) for identifying a behavioral act as an act of ostension. He wrote: "Ostension has three important facets: it is for another (and is hence situated in the earlier dialogic frame); it implies the addressee understands what is being pointed at; and it is oriented on the speaker—that is, it is 'deictic.' " To pursue issues of occurrence and distribution, I also set up a contrast of index-finger pointing and lip pointing cross-culturally. Unfortunately, in a number of instances, because of the paucity of available descriptions, I have had to rely on personal communications from trusted researchers.

"Index-Finger Pointing" Versus "Lip Pointing" in Seven Cultures

One culturally widespread deliberate pointing behavior that can often be found as the preferred referential pointing strategy, supplanting index-finger pointing for that honor, is lip pointing. The relation between lip pointing and index-finger pointing is little studied, and claims about the former in relation to the latter are often premised more on conjecture than actual research. Although Butterworth (chap. 2, this volume) boldly claims that "[w]e may describe pointing as a universal gesture in babies, given the geographical dispersion of the longitudinal studies," he cites neither the geographical spread nor any supporting studies, and it is quite clear that no one has studied the child development of pointing in a culture where lip pointing is the dominant referential strategy. Two unsupported assertions in the literature concerning lip pointing in comparison to index finger pointing are:

1. That deliberate lip pointing arises as a cultural preference to index finger pointing, only where finger pointing is considered taboo or impolite

(Hewes, 1996; Morris, 1978). This is a line of argument that follows Wundt (1921/1973), who spoke of the suppression of pointing in certain cultures on the assumption that pointing developed independently and spontaneously in children.

2. That lip pointing is less precise than index-finger pointing (e.g., Hewes, 1981).

Lip pointing is far more common than researchers (e.g., Hewes, 1981) suggest. It can be found in indigenous communities on all inhabited continents, which strongly indicates independent development. Sherzer (1973, 1983, 1993), whose description of the lip point of the Kuna Indians of the Comarca de San Blas (Panama), is the best information we have on lip pointing for any group, noted:

> This Kuna gesture shares features of both form and meaning with similar pointing facial gestures that have been reported throughout the Americas, including the North American Southwest, Guatemala, and parts of South America. Questions of typological areal comparison, including the possibility of diffusion, remain to be explored. (Sherzer, 1983, p. 246)

A lip point is also common in much of central and northern Australia, where it occurs alongside index-finger and other kinds of body points, and it appears to be common and often predominant in areas of Papua New Guinea. Although apparently of more restricted distribution, instances of lip pointing also occur in Europe and Africa.

In many communities where lip pointing is predominant, hand and finger points are not ruled out. Thus, writing about the Kuna, Sherzer placed lip pointing in relation to other gestures as follows:

> Some Kuna call the [lip point] gesture *kaya sui sai* (to make a long or pointed face). . . . While the Kuna use hand gestures as batons, to accent the rhythm of their speech, there is relatively little gesturing of other kinds. Mediterranean-like gestures, which replace specific words, are unknown. *Hand and finger pointing occurs infrequently and has a set of usages essentially identical to that of the deictic pointed lip gesture; however, the latter is more common by far.* . . . all uses of the gesture are related precisely because pointing is involved in all of them. Differences in meaning result from the various communicative contexts in which the gesture occurs. (Sherzer, 1983, p. 169, italics added)

Similarly, we find the following statement by Feldman concerning the Awtuw-speaking people who inhabit the southern foothills of the Torricelli Range in northwestern Papua New Guinea:

> Awtuw speakers typically point with pouted lips, sometimes accompanied by a fortis bilabial trill with egressive velar air. One occasionally points with the index finger. (Feldman, 1986, p. 196)

Mike Olson (personal communication) contended that there is no conventional index-finger pointing among the Barai of Papua New Guinea. Lip pointing, in contrast, is the ubiquitous deictic behavior and is highly conventionalized. Certainly the Barai were confounded when Olson used index-finger points with respect to objects as a means for getting names for them. It was not apparently a question of reading the behavior as impolite, but merely not understanding the referential intent. Lip pointing is the primary means of drawing a person's attention to something for naming, and his attempts at index-finger pointing could not engage the same dialogic interaction. When I sent these observations on Barai to Bill Foley, asking for his response to Olson's statements and any published articles that might clarify the situation, he kindly replied as follows: "As to pointing, both Yimas and Watam [both groups of Papua New Guinea] are as Olson describes it, pointing with the extended lower lips. I don't recall ever seeing them point with their fingers, but I can't rule out that they don't. . . . As far as I know, there are no published sources on this topic" (Foley, e-mail, 12 March 1996].

With respect to the Arrernte, we show that both lip pointing and index-finger pointing coexist. In this case, lip pointing is considered more informal than index-finger pointing, which can be used in much more formal discursive contexts. Moreover, the lip point can be used in circumstances where someone is being secretive about reference, whereas manual points are considered fully public acts. Among Ewe speakers of Ghana (Essegbey, personal communication; Ameka, personal communication), there is a similar differential distribution of index-finger pointing and lip pointing according to circumstance. First, it should be said that for the Ewe, index-finger pointing with the right hand is ubiquitous, but any form of gesturing with the left hand is considered taboo. Lip points can serve most of the same referential functions as index-finger pointing for the Ewe, but are typically used when the hands (particularly the right hand) are "out of action" for either physical or social reasons (e.g., one has one's hands full or one is in a context where it would be impolite to use the hands to gesture). Like Arrernte speakers, Ewe speakers may also choose to use lip pointing when they want to make the pointing less obvious to potential onlookers, and thereby invoke a sort of conspiratorial relation with their interlocutor(s).[1]

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[1]Saitz and Cervenka (1972, p. 33) provided an illustration of Colombian "lip pointing." They presented this gesture under the heading "Directions" and described it as follows: "Lips are pursed and then moved in the direction the performer wishes to indicate. Used for nearby people and objects."

TABLE 8.1
Index-Finger Pointing Versus Lip Pointing in Seven Cultural Groups

	Index-Finger Pointing	*Lip Pointing*
English Speakers (U.S.)	Ubiquitous	No
Ewe speakers (Ghana)	Ubiquitous (right hand only)	Common
Arrernte speakers (Australia)	Common	Common
Kuna (Panama)	Infrequent	Ubiquitous
Awtuw (Papua New Guinea)	Infrequent	Ubiquitous
Barai (Papua New Guinea)	No	Ubiquitous

A rough overview of the kind of differential distribution of index-finger pointing and lip pointing that can be found cross-culturally is given in Table 8.1. Hewes (1981), in questioning the precision of lip pointing, has probably premised his position on a false presumption of what constitutes the totality of the deliberate behavior. It is rarely simply pointing of the lips. This discussion is particularly relevant given Butterworth's (chap. 2, this volume) suggestion that "the arm and pointing hand may have become specialized for referential communication because it is particularly useful in taking attention further to the extreme periphery," because "[f]or any given spatial separation between a pair of targets, the angular excursion of a long lever like the arm, will be greater than that of a shorter lever, like the head and nose or a pair of very short levers, like the eyes." In Sherzer's (1973, 1983, 1993) description of the Kuna lip point, he was clear that this referential action does not only involve the lips. He wrote:

> The gesture consists of looking in a particular direction and raising the head; during the raising of the head, the mouth is first opened and then closed with the lower lip thrust outward from the face. The gesture is completed by a lowering of the head to its original position. It is this constellation of raising the head and opening and closing the lips which gives the impression of pointing lips. (Sherzer, 1983, p. 169)

Although any one short lever might afford less accuracy, the coordination of eyes, head, and lips can afford detailed and precise localization and appears to be typical of lip pointing behaviors around the world. Among the Arrernte, one can easily indicate which of two similar objects next to one another in space is intended, by pointing with the lips to the relevant space and shifting the eyes towards the side of the intended entity. Moreover, sighting behavior that looks as though one is trying to see something in the distance, rather than up close, can help determine whether the extreme periphery is intended or not.

With respect to the issue of whether index-finger pointing is being culturally suppressed, due to politeness factors and/or taboos, thus leading to the predominance of an alternate deictic mechanism like lip pointing, all one can say is that the research has not been done.[2] Certainly, it is the case that in the few accounts we have of lip-pointing predominance, there is no suggestion that index pointing is being suppressed by other cultural factors. Sherzer, for instance, simply refers to index-finger points among the Kuna as a less preferred alternate that can be used in the same way as lip pointing. Furthermore, as we have seen, in some groups both types of pointing serve different functions, and either politeness is not the distinguishing factor or, in cases where features related to politeness like formality and secrecy are involved, as in the Arrernte case, the assignment of pointing behaviors does not go in the predicted direction. All we can say is that both types of pointing seem to be widespread and are able to perform very similar functions.

So, on the basis of the preceding excursion, I would say that one should rightly be cautious about statements concerning the universality of the index-finger point. Certainly groups like the Barai, Yimas, and Watam of Papua New Guinea need to be investigated more closely. Even if it were the case that we found something looking like index-finger pointing behavior among individuals, one would need to assess group understanding and group use. This brings us to the question of convention: Olson's story for the Barai given earlier is salutary because, if accurate, it suggests that index finger pointing is not "universally understandable within our species," as proclaimed by Hewes (1996, p. 588), but requires an understanding of the conventions of use. If it turns out that these groups, like the Awtuw and Kuna, do show infrequent index-finger pointing behavior alongside ubiquitous lip pointing, then we are left to ponder what conditions could possibly lead lip pointing to being favored over index-finger pointing if it is supposed to be an innate or, at the very least, a much better solution to the problem of gestural reference. The fact that so many unrelated cultures

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[2]Hewes (1996), for instance, wrote: "The few cultural groups in which finger-pointing is tabooed, for example the Navajo of North America, do not appear to me to constitute genuine exceptions to the universality of deixis, but only specialized rules of etiquette which would be unnecessary if the gesture were in fact totally unknown (p. 588)." However, it is surely more important to stress that they *do* point with other parts of their body. Navajo is another lip-pointing dominant culture, and it is also possible to point with one's arm and hand as long as all fingers are extended. For an interesting description of this and other aspects of Navajo Culture, see the FAQs list (especially 132 and 133) at http://ourworld.compuserve.com/homepages/larry_dilucchio/faq02b.htm As is discussed later, although tabooing of index-finger pointing might be an explanation for a group like the Navajo, there is no reason to believe that this is true for all groups in which lip pointing (or some other body-based alternate to index-finger pointing) is dominant. For an interesting and critical discussion of the relation of pointing to impoliteness, which explores the complex factors involved, see Müller (1996).

have hit on lip pointing as a reasonable solution to giving gestural deictic indications must surely lead us to find more general principles underlying the development of pointing behavior than have been advanced on the basis of the presumption that index-finger pointing is king of the hill. It remains an empirical question whether, in cultures where lip pointing is dominant, babies and young toddlers actually go through a phase where they use the index finger for making reference. I have no doubt that they show index-finger extension and may do index-finger exploration of objects and may even reach for things with the index finger extended, but as Povinelli et al. (chap. 3, this volume) rightly elucidated, the "pulling out" of the pointing gesture in young infants will depend on cultural and attributional influences in interaction, which may channel them into other, culturally dominant forms. At any rate, one can now propose a comparative investigation of "pointing" acquisition among index-finger dominant pointing cultures, lip-pointing dominant cultures, and cultures where both forms of pointing are copresent and common.

In the preceding discussion, I relied on a big simplification that I am not at all content with: namely, that index-finger pointing is really the same, or sufficiently comparable, in each of the cultures that manifest it. In other words, even this presumption fails to stand up to cross-cultural scrutiny. We cannot, as outsiders, confidently identify all acts of index-finger pointing—either etically or emically—that occur in interaction in another culture. I am particularly aware of this because during my long period of interaction with the Arrernte I have had to be retrained in how to point "properly." My own use of pointing led to confusions and misunderstandings, and I have often inaccurately interpreted the content of other people's pointing. Although I am willing to concede that both Butterworth (chap. 2, this volume) and Povinelli et al. (chap. 3, this volume) have hit on factors that help to explain why the use of the index finger for pointing is so widespread and natural (even if it may not be the only candidate body part), and they have some convincing explanations for aspects of child development, I cannot possibly concede that the adult use of index-finger pointing in any one culture is identical to that in another. Certainly, as the data to be discussed next reveal, index-finger pointing among English speakers and Dutch speakers is semiotically very distinct from that of Arrernte speakers. There is a level of generational transmission, perhaps overlaid on universal underpinnings, that creates pointing anew for each generation and each culture. In the next section I go on to back up my claims by demonstrating that the index-finger point:

1. Is embedded in differently structured sign systems with different functional–pragmatic considerations (sections "Three Categories of Orienting Behavior" and "True Pointing From the Arrernte Perspective").

2. Is characterized by distinct combinatorial properties (with both lin-guistic and nonlinguistic signs) (sections "True Pointing From the Arrernte Perspective" and "The Three Recognized Types of Manual Pointing").

3. Possesses a different semantic range cross-culturally (section "The Three Recognized Types of Manual Pointing").

4. Has different physical forms cross-culturally (section "The 'One-Finger Point' ").

5. Has a deployment in gesture space that varies cross-culturally (section "Manual Points, Gesture Space, and System").

6. Invokes, and is only interpretable against, the unique culture-specific (communal) common grounds of each community (section "Manual Points, Gesture Space, and System").

One outcome of these observations is the realization that the index-finger point is, to use Peirce's term, a mixed sign having not only indexical properties, but also iconic and symbolic properties. In Clark's (1996) terms, to deploy a simple index-finger point, each of three basic methods of signaling are appealed to—indicating, demonstrating, and describing-as. The logical conclusion is that even index-finger pointing is subject to some degree of social and semiotic shaping that must be socially transmitted.

THE ARRERNTE VIEW OF POINTING

Background

This study is based on work with speakers of Eastern Arrernte and Mparntwe Arrernte who are residents of Alice Springs, in the Northern Territory of Australia. Gesture behavior is ubiquitous in interaction, but is especially prevalent when speakers are describing their traditional country and discussing events and happenings (both traditional and nontraditional) in their home territory. As well as high rates of cospeech gesture, Arrernte speakers also use an auxiliary (manual) sign language that is a simplified auxiliary communication code (with its own grammar), is used on an every-day basis by all members of the speech community, and is *not* the fully elab-orated sign language that Kendon (1988) describes for older Warlpiri and Warumungu women under a speech taboo. *Quotable gestures*[3] from this aux-iliary sign language may accompany speech or can be used independently from it (see Wilkins, 1997a).

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[3] This term is used in the sense of Kendon (1992, 1994).

For the Arrernte, pointing seems to fall somewhere between spontaneous cospeech gesture and the highly conventional signs of the sign language. I say this for two reasons. First, although there are conventional pointing handshapes (see "The Three Recognized Types of Manual Pointing"), they appear to allow greater allomorphic variation than the hand signs. Second, when Arrernte speakers signal in speech that the addressee should attend to a nonconventionalized cospeech gesture, they tend to use the demonstrating form *alakenhe* "like this; like so" in their utterance, and when they are drawing attention to a cospeech (conventional) hand sign they tend to use *nhenge-ulkere* "this sign; you know the one of this kind," but when speakers are referring to a cospeech point, there are some occasions when they use *alakenhe* "like this; like so" and some occasions when they use *nhenge-ulkere* "this sign; you know the one of this kind" to draw attention to the gesture space. These facts in themselves, I would submit, constitute the sort of evidence that is needed to establish that the group maintains some level of categorical distinction between "spontaneous gestures," "points," and "hand signs," but more direct and substantive evidence is presented later.

In the rest of the chapter, I presume as background to the Arrernte situation much of what Haviland has already established for the Guugu Yimithirr speakers living at the Hopevale Aboriginal community in northeast Queensland. Through examination of videotaped episodes of Guugu Yimithirr story telling and conversation, Haviland (1993, 1996a, 1996b) demonstrated that:

1. In talk about location and motion, both language and pointing gestures tend to be directionally anchored "in terms of what we can calculate to be the 'correct' directions, which in the G[uugu] Y[imithirr] context means correct *compass* directions." That is to say, language and gesture are both absolutely oriented in such contexts (see also Levinson, 1997, on this point).

2. Guugu Yimithirr speakers are highly gesture conscious, in the sense that gestures, especially orientational gestures, will be attended to by interlocutors and taken to be part of the asserted propositional meaning. This holds not only for obligatory cospeech gestures (like points that would accompany a phrase like "the camp that is over there"), but any oriented gesture that may occur with speech. Levinson (in press), in referring to this aspect of Haviland's work, wrote: "Haviland has put it another way: Guugu Yimithirr speakers can lie with their gestures, while we—except in limited demonstrative contexts—can hardly be said to do so."

3. One has to take account of a number of distinct deictic spaces to correctly interpret a pointing gesture—the *locally anchored space* (immediate environs of the speech event), the *interactional space* (the interpersonal space

of the interlocutors), and the *narrative space* (the space that the narrative refers to as laminated on to the immediate spaces). Shifts between spaces have pragmatic consequences that correlate with distinct linguistic and gestural behaviors and interpretations.

4. The Guugu Yimithirr deployment of pointing gestures in narratives demonstrates a constant awareness of social factors, such as kinship relations, language etiquette, and the geographical and directional knowledge that others possess.

5. Knowledge of traditional country involves orientational precision, and the use of space in communicative interaction "suggests the mnemonic function of gesture in reconstructing knowledge about land."

Apart from the fact that the use of cardinal-point terms in Arrernte speech is far less prevalent than in Guugu Yimithirr speech, the preceding five points also hold for the Arrernte, who live 1,500 km to the southwest. Of particular relevance to remember is that we are talking about a highly gesture-conscious culture with predominant absolute orientational behavior (see Pederson et al., 1998).[4]

EXPLORING THE ARRERNTE FOLK CLASSIFICATION OF "ORIENTING BEHAVIORS"

To explore the Arrernte folk categorization of Arrernte "pointing" behaviors, videotapes made during previous field trips were shown, during two field trips in 1995, to three adult women, and these tapes were used as the basis of free elicitation centering on what the women could tell me about the cospeech movements of the participants. Each consultant was interviewed separately, and the selected video clips contained episodes that were rich with discussions of location and movement, and that contained (what to me were) obvious examples of bodily orienting behavior. Among the video clips were clips of natural interactive conversation, narratives about country, elicitation games focusing on spatial issues, and direction giving. Each woman was a participant in at least one of the video clips. The results from these individual elicitations were then discussed with other adult members of the Arrernte community to further confirm the degree of agreement and meta-awareness concerning the behaviors observed. In fact, there was a high degree of agreement as to what constituted meaningful communicative orienting behavior, and what was not to be considered such behavior (e.g., gaze turns that were part of the narrative, vs. gaze turns that

[4]Discussion of Arrernte spatial language can also be found in Wilkins (1991, 1993, 1997c) and Wilkins and Hill (1995). Discussion of the spatial properties of another semiotic system used by the Arrernte can be found in Wilkins (1997b).

were just responses to "eye-catching" things happening in the local space). There was also a high degree of agreement as to how these behaviors are to be named and talked about. This is significant because, as Haviland (chap. 7, this volume) notes in his discussion of pointing in Zinacantec Tzotzil, there are cultures that do not possess descriptive terms for pointing, and for whom it is not clear that "communicative metatheory will yield any category of 'pointing,' or for that matter of 'gesture,' as a distinct and recognizable class of actions." So when a cultural group, like that of the Arrernte, does provide us with a clear guide to native categories of "pointing" and "gesture," we should pay close attention to it in our descriptions and see whether it reveals any new understanding of this class of communicative actions. This section, therefore, contains an overview of the system of semantically differentiated "orienting behaviors" identified by Arrernte speakers in the task just described.

To establish the embeddedness of the Arrernte "index-finger point" within a complex, culturally determined semiotic system, the discussion that follows moves from recognized categories of orienting behavior (see "Three Categories of Orienting Behavior"), to "pointing" generally (see "True Pointing From the Arrernte Perspective"), and finally to manual pointing and its distinct subtypes (see "The Three Recognized Types of Manual Pointing"). In other words, the investigation proceeds down through a hierarchy of recognized classes of communicative action, and it is not until discussion in "The 'One-Finger Point' " that we finally encounter a canonical index-finger pointing form as one of a set of conditioned alternant morphologies of a particular Arrernte pointing gesture.

Three Categories of Orienting Behavior

The observed orienting behaviors—that is, communicative behaviors that identify a particular direction [vector] that the interlocutor is to attend to— were regularly classified by consultants into three distinct categories: *thileme* "is pointing"; *iltyeme-iltyeme* "a hand sign"; *aremele ileme* "tell by gazing."

The term *thileme* is a transitive verb that refers to intentional uses of various body parts to indicate to an interlocutor that he or she is supposed to attend to, recognize, or identify some region of space that is in the direction which the body part is oriented toward. As such, acts that are classified as being *thileme* are deictically anchored at the speaker[5] or at another discourse center as represented by the speaker. With the verb *thileme*, a noun phrase marked with accusative case (i.e., the object of the transitive verb) will refer to the thing or place that is being pointed at, whereas a noun phrase (NP) marked with the allative case -*werne*, or the spatial suffix -*theke* "-wards," indi-

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[5] The use of *speaker* here is problematic because speech may not always be involved. Thus *pointer*, *gesturer*, and *communicator* are all also appropriate.

cates the general direction toward which the point is aimed, without necessarily entailing that the referent of the NP that is so marked is the referent of the point. In this way the difference between "pointing at camp" and "pointing camp-wards (at the dog)" is established. A common phrase used by consultants was *thilemele ileme* "to indicate by pointing (or, more literally, 'pointingly tell')". Anything that is considered an act of *thileme* is here treated as a "true" point from the Arrernte perspective, and the bulk of the rest of this chapter can be considered to be about *thileme,* rather than "pointing."

The Arrernte term *iltyeme-iltyeme* "hand signs; the act of using hand signs to communicate" actually covers a set of several hundred hand signs (see Strehlow, 1978; Wilkins, 1997a), most of which do not have an orienting function. When referring to actual uses of the auxiliary hand-sign language, consultants talk of *iltye-le ile-me* (hand-INST tell-present) "telling something with the hands" (i.e., using sign language) or *iltye-le angke-rre-me* (hand-INST speak-RECIP-pres) "speaking to each other with the hands." The term for conventionalized hand signs is a reduplicated form that is also based on the word *iltye* "hand; finger," *iltye-me-iltye-me.* A small subset of conventional (quotable) hand signs are deictic and communicate vector in an analog fashion. Most notably, the "going off toward a place" hand sign is especially common. This hand sign, illustrated in Fig. 8.1, may be called the *horned*

Form:
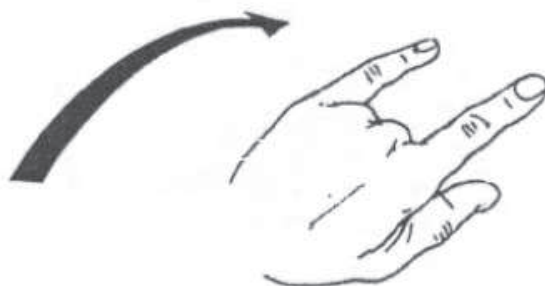
Examples:

a) "The Dreaming travels through to Ilewerre there, according to Aboriginal law."

b) "We're going off to that old camping spot."

c) "They two left and walked off to where there's lots of witchetty grubs there in the west."

FIG. 8.1.   The horned hand sign: form and examples.

sign and is made with the little finger and index finger out, and middle and ring finger contracted. This sign is used to indicate the "global orientation of a place that is being moved to," independent of the orientation of the subpaths used to get there, with these subpaths being signaled by the "flat hand point" as described later. The *horned* sign is moved toward the target and then rapidly retracted, and is never held for any length of time at its apex. The fact that one cannot hold this sign in place relates iconically to the fact that the sign encodes motion rather than static location—it shows us where the goal of motion is oriented, not the location of the place. Although oriented and clearly deictic, such signs are never considered points. Even when used on their own as cospeech gestures, which is extremely common, consultants refused to use the verb *thileme* "is pointing" to describe the act. This was a revelation to me because I had previously observed that the use of the horned hand patterned in almost all ways like the other behaviors I had taken to be pointing behaviors and so I had assumed it was one of the ways people *thileme.*

Finally, in the context of examining meaningful orienting behavior, consultants used the phrase *aremele ileme* (seeingly tell) "tell by gazing" to refer to significant shifts of the head position and/or eye movement that they considered meaningful in the context of use. A typical phrase that was used to describe this kind of behavior was *alknge-le aremele il-irtnaneme* (eye-with gazing tell-always) "always sort of telling it by gazing with your eyes," where the thing being "told" was the location of a thing or place. This corresponds essentially to what has been called *deictic gaze* in the literature. Interestingly, in the few cases where people in the video excerpts I showed looked as if they were surveying their surroundings in order to more accurately calibrate their bearings, my consultant viewers did not consider this meaningful "gaze" behavior: Although they were "looking" they weren't "telling by looking." It is common for gaze with accompanying head turn to be moved toward places and things that cannot actually be seen by the speaker, but that are "seen in the head" (M.H.) "because of having the actual memories of the place" (V.D.).[6] Such deictic gazes may or may not co-occur with other

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[6]In speaking about how people can "look" accurately at places that they cannot see, one consultant said *Re itelaremele ahirre areme pmere renhe.* (she/he knowingly imagining see place the) "She/he through knowing (the country) can have a vision of the place (in their mind)." Levinson (1997), in discussing absolutely oriented behavior in language and gesture among the Guugu Yimithirr, noted that, to explain the type of absolutely oriented behavior that the Guugu Yimithirr demonstrate, "a mental map of one's world with accurate absolute angles must be accessible" (p. 105), and this mental map will have the location of the place of speaking within it. I believe that quotes from my Arrernte consultants, like the one just mentioned and those represented by their English versions in the body of the article, suggest there is also a folk view of mental maps involving people's memory of places, their ability to willingly call those places up and accurately envision where the places are oriented relative to the deictic center.

body points. In fact, independent deployment of "gaze" and manual gesture is very common. Consultants were most in agreement that such "deictic gaze" was necessary for the interpretation of what was going on, and was regarded as intentional, when the shifting gaze occurred without any further body point and when it referred to something that could not possibly have been seen from the speaker's current location. Previously, in a brief report on one Arrernte man's pointing behavior, I noted (in Hendriks & McQueen, 1996) that:

> Gaze and pointing function independently of one another, although they could align. Most of the "oriented" gesturing was done *without* accompanying gaze. A consistent use of gaze without accompanying deictic point was used to identify the direction of the region that formed the deictic center for his narrative (which was distinct from his interpersonal deictic center). Gaze and pointing did align when significant new places were being introduced for the first time in narrative. (p. 123)

Before leaving the topic of deictic gaze, I should point out that this is the category of behaviors that was least certainly identified and classified by consultants.

In summary, orienting behaviors were classified into three broad classes of meaningful interactive behavior: *thileme* "pointing"; *iltyeme-iltyeme* "hand signs"; and *aremele ileme* "meaningful gaze (deictic gaze)." Some behaviors that might have been taken by a non-Arrernte analyst as "meaningful orienting behavior" were not regarded by Arrernte consultants as being "meaningful" (e.g., there were gaze behaviors that did not "tell" anything). Furthermore, a manual gesture that I, as an outside analyst, would have regarded as a deictic "pointing" gesture and so would have expected to be describable by the verb *thileme* "pointing" was instead classed by Arrernte consultants as a hand sign. Finally, manual pointing and deictic gaze are able to function as disengaged and independently meaningful systems, and this is in distinct contrast to the English and Dutch speakers we have observed (see also Levinson, in press). Having thus embedded "pointing" within the context of other recognized meaningful orienting behaviors, we can now turn to an examination of the subclassification of "true pointing," or to be more accurate, *thileme*.

True Pointing From the Arrernte Perspective

From the Arrernte perspective, there are three different body parts that can conventionally be used to *thileme* "point": the hand, mouth, and eyes. Speakers' own metacommentaries on how, why, and when these different body points are deployed, coupled with observations of actual use in day-to-day interaction, reveal that Arrernte pointing is a structured semiotic field. The relevant parameters in this field involve the visible availability of the

referent, the formality of the context, and whether one is attempting to create or maintain an air of secrecy.

When you "tell by pointing with the eye"—*alknge-le thilemele ileme* (lit. eye-with pointingly tell)—you first catch your interlocutor's eye and then shift your eye noticeably within the socket toward a particular referent. There is typically no accompanying head movement. This is considered a "secret" point, and is used with close familiars in an informal interactive context, and reflects a conspiratorial mood. It is used when one does not want other potential onlookers to see what is being referred to, and is often accompanied by hushed speech or restricted (hidden) signing. The eye point is always directed toward a visibly available object in local space, but this object may only serve to refer indirectly to the actual intended conceptual referent. Thus, when two Arrernte women were speaking conspiratorially about a colleague who works in the same office, they made reference to the colleague through an eye-point to her empty chair.

Earlier, I noted that Arrernte people also use lip pointing. In fact, their term for this form of pointing is *arrakerte-le thilemele ileme* (mouth-with pointingly tell) "telling by pointing with the mouth." The mouth point is made by orienting one's head face-on toward a referent while protruding both lips (sometimes just the bottom lip). When several like objects are in close proximity to one another, the eyes shift toward the intended referent. In cases where the referent is not visible or not readily accessible, the degree of head tilt helps indicate distance. An exaggerated squinting of the eyes may accompany the mouth point when large relative distance is being indicated, and when an object is particularly close and available. Thus, the mouth point may saliently involve the lips, but also involves the coordinated action of the head (in both rotation and tilt) and eyes (both the eyeballs and eyelids). This point is only used with close familiars, although one also sees it used in extreme cases when both hands are occupied. It can be used for both secret and openly public pointing, and it can refer either to visibly available local objects or objects that are not visible and are beyond the local space. In this latter case, pointing is absolutely oriented, and the mouth point gives the bearings of the intended referent.

Such mouth pointing is so widespread among Central Australian groups that manuals for language learners often include tips or warnings about this phenomenon. For instance, in the section on demonstratives in *Wangka Wiṟu: A Handbook for the Pitjantjatjara Language Learner* (Eckert & Hudson, 1988), the authors provided a special note that stated, "[a] common way of pointing to something in Pitjantjatjara culture is to extend the bottom lip and raise the chin at the same time" (p. 87). As in Arrernte, this form of pointing also tends to have a conventionalized term or phrase that is used to refer to it. Thus, the Kukatja Dictionary (Valiquette, 1993) records both the verb form *tjaa yurrila* (lit. move the mouth) "show direction

with one's lips" and the nominal form *tjaa yurri* "indicating by mouth move-
ment" (p. 283). A note appended to this last entry states with respect to
Kukatja mouth pointing that, "[w]hen asked about a direction or the time
of the day in words or in sign language, people will frequently answer by
raising the head and turning it in the compass direction being indicated or
towards the sun and its height in the sky." Mouth pointing is encountered
so frequently that non-Aboriginal people who have come to work with Ab-
original people in Central Australia readily pick up the convention and of-
ten tend to overuse it or use it inappropriately.

Finally, we come to manual points. The phrase for this form of pointing
in Arrernte is *iltye-le thilemele ileme* (lit. hand/finger pointingly tells) "tell by
pointing with the hand/finger." Like many Australian languages, Arrernte
does not distinguish lexically between "hand" and "finger," and the same
term *iltye* refers to both. There are three distinct forms of manual pointing
that are recognized by the Arrernte, and each of these is dealt with in the
following subsection. However, there are several attributes that are associ-
ated with manual pointing generally. First, manual points are considered
fully public gestures. This does not mean there are not more discrete and/
or indirect uses of manual pointing, but such uses appear to have more to
do with the speaker's relation to the referent or are a metacomment on the
content rather than reflecting the degree of public accessibility to what is
being said. Second, although manual pointing can be used in informal
everyday interaction, it is also regularly used in the most formal of situa-
tions, for example, in ceremony and public oration. In certain highly re-
stricted and formal contexts, as when undertaking minimal interaction with
"respected" kin-relations that are to be "avoided," the only form of pointing
that is permitted is manual pointing. Among other things, unlike "eye
pointing" and "mouth pointing," manual pointing does not require the in-
terlocutors to be facing one another for effective execution and, given the
regular prohibition on any form of direct face-to-face contact with certain
"respected" kin relations, this makes it the only plausible method of point-
ing when interaction is required. Finally, like "mouth-pointing," manual
pointing is used for indicating both visibly available referents as well as non-
visible referents. In the case of nonvisible referents, once again pointing is
absolutely oriented, and the angle at which the arm is held will show rela-
tive distance (in a range of between 30° and 140° from rest at the side of the
body). Figure 8.2 provides a rough indication of how arm angling in man-
ual pointing corresponds to the use of the three Arrernte demonstrative
terms—*nhenhe* "this; here," *yanhe* "that (mid); there (mid)," *nhakwe* "that
over there; there yonder"—when referring to nonvisible referents (typically
places and landmarks).

To conclude this subsection, we can see that acts labeled as conventional
instances of *thileme*—that is, true instances of pointing from the Arrernte

■ **nhakwe** (approx 90° - 140°)

■ **yanhe** (approx 60° - 110°)
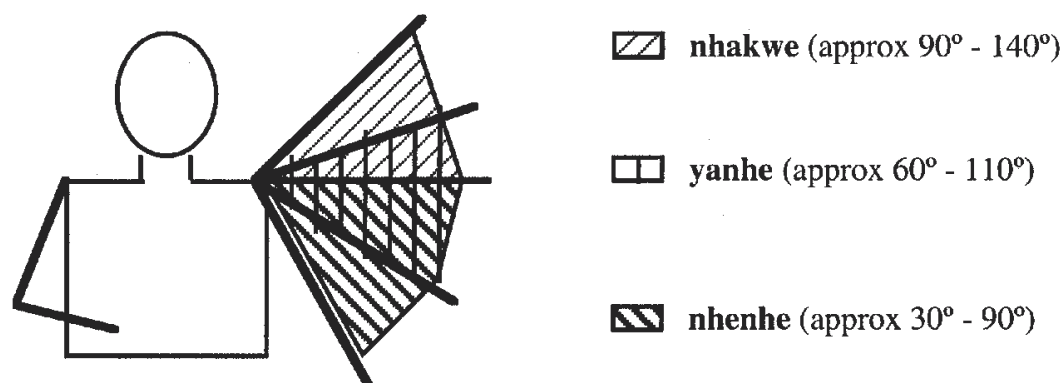
■ **nhenhe** (approx 30° - 90°)

FIG. 8.2.   Relation of degree of upward/downward arm angling to use of demonstratives. *Note.* This is relevant only to relative indications of objects/ places that are not visible, and inhabiting a horizontal space whose areal scale is in the order of hundreds to thousands of square kilometers.

perspective—are enacted by three different parts of the body. Choice of body part for pointing is culturally determined and semiotically governed. Table 8.2 summarizes the distinctions among the three general forms of pointing in terms of *referent visibility*, *formality of context* (i.e. relation to inter-locutor), and *degree of secrecy* intended.

The Three Recognized Types of Manual Pointing

As noted earlier, there are three distinct forms of manual pointing that are identified and named by Arrernte speakers. Each of these is next de-scribed in turn, and it is at this point we first encounter the index-finger form in pointing.

The "One-Finger Point": Home of the Index Finger.   Acts of pointing that most English speakers would identify as the common-and-garden index-finger points are described by Arrernte consultants with the phrase *iltye anyente-le thilemele ileme* (hand/finger one with pointingly tell) "telling by pointing with one hand/finger." Although the most common hand shape of this point is pretty much the same as the index-finger point used by Eng-lish speakers, it has some common allomorphic variants that are probably

TABLE 8.2
Differences in Arrernte Use of Pointing With Hand, Mouth, or Eye

|	Referent Visibility	Formality of Context	Degree of Secrecy
Manual point	+/− Visible	+/− Formal	− Secret
Mouth point	+/− Visible	− Formal	+/− Secret
Eye point	+ Visible	− Formal	+ Secret

not as familiar to English speakers. The "one-finger point" can be made with palm down or palm to the side (*di taglio* in Kendon and Versante's terms). In the palm down condition, there are roughly four shape variants (see Fig. 8.3): one with the index finger extended and all other fingers tightly retracted and thumb resting on the retracted middle finger (i.e., the canonical pointing form described by authors such as Butterworth in this volume), one with the index finger extended and the other fingers only loosely retracted and essentially pointing down, one where the fingers are basically not retracted at all but the index finger is raised up from what is essentially a flat palm down hand, and finally, one where it is the middle finger, not the index finger, that is pointed toward a target.

It is these last two variants of the pointing form that we have not encountered in comparative English and Dutch data. First, in the English and Dutch data I have been able to observe, speakers always make index-finger points with fairly substantial contraction of the other fingers, although it may be tighter or looser, but always within the range provided by (a) and (b) in Fig. 8.3. Indeed, with my own English-colored spectacles, in doing transcriptions of video data, I had trouble identifying anything with a looser (and flatter) hand configuration as a one-finger point and regularly coded it as another form of manual pointing. The Arrernte consultants I worked with had no trouble identifying such points (with or without further supporting context). Second, pointing with the middle finger occurred with a number of Arrernte speakers, but I have not picked it up in any of the English or Dutch data. I have, however, noted English speakers using a middle-finger variant "in the wild" under two conditions, one where they are pointing at something they are also touching (like a paper, or a map, or an overhead sheet) and one where they are holding something and their index finger is otherwise occupied.[7] Arrernte speakers, in contrast, can use the middle finger variant much the same way as the index-finger variant. For instance, it is used with full arm extension to point to places and objects in the distance. Of course, the relative paucity of the middle-finger variant for English speakers may not be independent of the fact that it is formally associated with a rude and derogatory "middle finger" emblematic sign. Certainly, when English-speaking audiences see examples of the Arrernte middle-finger variant, they can't help but make the association with the emblematic form that is so much a part of their own culture.

It is worth stressing that these variant forms of the "one-finger point" are all regarded as being "the same" by Arrernte speakers. They do, of course, see the differences once they are pointed out, and then it is possible to elicit

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[7]Kendon and Versante (chap. 6, this volume) note that they have observed middle-finger and little-finger pointing in their Neapolitan data, but state that such points were not common, and they give them no further consideration in their chapter. They do, however, recognize that these two forms of pointing must be taken into account in future investigations.

Variant forms:

a)

b)

c)

d)
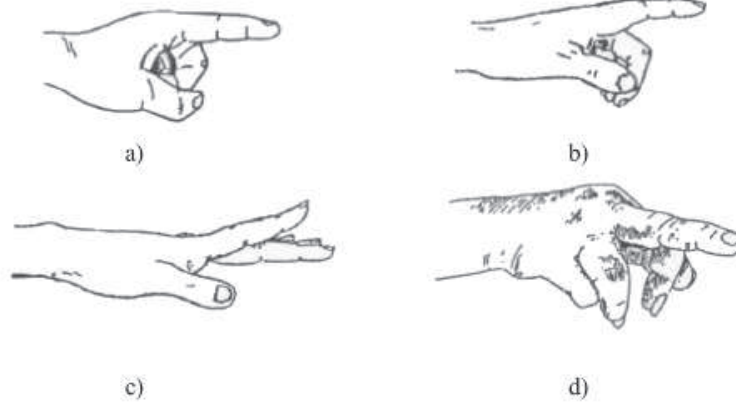
Examples:

a) "That place there has a lot of native honey."   b) "That (mid-distant) is the main site of Ilewerre."

c) "One more egg is still hidden."   d) "We found another grind stone just a little bit up on the other side of the creek."

FIG. 8.3.   The one-finger point: variant forms and examples.

a more specific description of the form. For instance, under elicitation, some speakers describe the index-finger variants by the phrase *iltye anyente-le thilemele ileme iltye arratye-le* (hand/finger one with pointingly tell hand/finger true) "make a one-finger point using the index finger," but this is not a fixed phrase and only serves to highlight that this category of point is not thought to uniquely cover just the use of the index finger. In other words, the canonical index-finger point is merely one of a number of etic variants of a more general emic category. It is an "allo-gesture" (i.e., one of several allomorphic variants) of a basic "gesture-eme." The factors that determine which variant is selected are discussed momentarily, but first we examine the function and meaning attributed to the "one-finger point" as an emic gesture.

All variants of the "one-finger point" encode the same functional and semantic content. It is used to identify a single object or place by showing its location in space or its bearing from the deictic center. As a related function, it is used to indicate the direction toward which a featured object is statically facing. In its function of picking out a single referent, it shares the object individuation function that Kendon and Versante (chap. 6, this volume) observe for the index palm down pointing of Neapolitan speakers. However, remember, this function is not restricted to a single variant form in Arrernte, and palm orientation is not relevant at this level. Moreover, we need to be clear about what is meant by the object individuation function. The Arrernte one-finger point fairly strictly applies to picking out just a single referent; if more than one referent is to be identified then another pointing form is used. English speakers have, for instance, been observed using an index-finger point when saying things like "give me those two cups"—the point may either be a single direct gesture to the area of the cups or may move in an alternating fashion between cups. This is the sort of function the one-finger point does not perform, and speakers reject its co-occurrence with the Arrernte equivalent of "give me those two cups" and require the use of a wide hand point (to be discussed in a later section).[8] Another function that is *not* accomplished by the one-finger point in Arrernte, but is accomplished by the index-finger point used by English speakers, is the indication of paths of motion to be traveled or turns to be negotiated in moving.[9] In giving directions, for instance, Arrernte speakers quite systematically use the horned hand hand sign (discussed in "Three Categories of

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[8]An alternate phrasing like "give me the two cups sitting *there*" does allow the one-finger point, but the referent of the point in such a case is the single location, not the two cups.

[9]One sometimes sees an Arrernte one-finger point apparently tracing a motion path, but all the cases I have observed fall into two categories: (a) pointing at an individual referent that happens to be in motion, and (b) tracing the extension of linearly extended single referent (like a creek bed) that is statically located in space.

Orienting Behavior" and illustrated in Fig. 8.1) to give the overall goal of motion, whereas the flat hand (discussed in a later section) is used to give path segments and turns and compass point bearings, and the one-finger point is used to localize individual sites and landmarks. In giving directions, English speakers regularly employ the index-finger point to encode meanings and perform functions that are restricted to the horned hand hand sign and the flat hand point for Arrernte speakers. In short, although the Arrernte one-finger point and the English index-finger point have overlapping uses, they are semantically and functionally quite distinct.

So does this mean that the variant forms of the Arrernte one-finger point are just randomly generated alternant morphologies? No. Although the intuitions of Arrernte speakers break down at this point, and they are unable to identify functional or semantic differences among the variants, close observation of usage does suggest some pattern as to when particular variants are deployed. For instance, the degree of finger closure or openness among the three index-finger variants of the one-finger point appears to correlate with certain discourse factors. Emphatic mentions, or first mentions of entities that continue to be important, are regularly accompanied by the canonical (tightly bunched) index-finger point (which is often held in place). In follow-up anaphoric mentions, or the mentioning of nonimportant participants, a looser hand is used (and the action is executed more quickly). In the case of the two more closed variants, the utterance is often constructed so as to require an accompanying point. In contrast, the most open variant of the index-finger point, the one that is hardest to identify for an outsider, tends not to be used in the context of obligatory pointing, but is used instead to quickly point out something that has already been identified and mentioned explicitly in speech. Not surprisingly, this point tends to be performed rapidly and tends not to be held. Put crudely, the more semantically important the gesture is to the ongoing discourse; the more it takes the shape of canonical index-finger pointing, the less semantically important it is, the looser and more open it is, and the quicker is its performance. In this sense, then, the occurrence of alternant forms is environmentally determined, and the variants are in complementary, rather than contrastive, distribution.

Although less well understood, due to fewer attestations, the middle-finger variant of the one-finger point also seems to have a fairly predictable distribution. It appears to arise when individuating among potential alternates, all of which are also relevant to the discourse. Two such contexts have been observed. First, the middle-finger variant follows the use of an index-finger variant to pick out a different single referent. In the few cases available, the referents lay in the same areal quadrant. Second, this variant has been observed when picking out a middle referent of a series of referents that have previously been established. Especially this latter use may be

associated iconically with the selection of the middle finger and may explain why this variant is only observed in palm down uses (i.e., all attestations are with localization of objects on the horizontal, and the middle finger leaves alternates on either side). However, more examples are required to see whether this pattern holds. As I have said, such apparent differences in the morphological shapes of these related variants are not at the level of consciousness, and the differences may in fact reflect natural responses to discourse context and/or other environmental conditions that determine the shape. That is to say, the variants of the one-finger point appear not to be determined by convention in the sense of Lewis (1969) or Clark (1996) and so are not each individual signs conveying different meanings from one another.[10]

In summary, the Arrernte recognize a gesture that they call a one-finger point. This gesture has a clear function and semantics. Although there are a number of variant forms of this gesture, Arrernte speakers do not seem to be overtly conscious of this fact. The variant forms of the gesture are not randomly distributed but seem to arise predictably in different discourse contexts—that is to say, they appear to be in complementary rather than contrastive distribution. One of these variant forms happens to be a canonical index-finger point, and although there is evidence to suggest this is a privileged variant of sorts, its actual distribution, use, and meaning differ significantly from those of its English counterpart. In particular, the one-finger point cannot be used in a number of contexts where the English index-finger point is regularly used. Although there are semantic similarities, the Arrernte one-finger point clearly conveys, for instance, a different notion of individuation.

The Wide Hand Point.   The second of the three recognized Arrernte manual points is referred to by the standard phrase *iltye anteke-le thilemele ileme* (hand wide-with pointingly tell) "telling by pointing with the wide (spread) hand." For convenience, I refer to this as the wide hand point. It is made with digits extended and spread out (see Fig. 8.4). In contrast to the one-finger point, the wide hand point regularly carries with it the notion of non-singularity or nonindividuation. It can be used to identify regions or expanses of country (i.e., areas which contain multiple individual places), and is also used to refer to the multiple objects in an area. In this last use it can even be performed when standing next to an object, like a bush laden with fruit, and indicating the fruit on the tree. The orientation of the palm

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[10]In other words, to borrow terms from Clark (1996), each variant form realizes the same *coordination device* and solves the same *recurrent coordination problem* in the community. They may be slightly different behaviors but they realize just one meaning and function that is "common ground in the community," and although the differences are regular they do not, through convention, convey any distinct content.

Form:
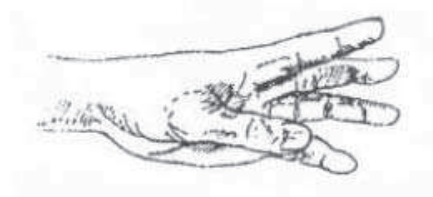
Examples:

a) "... the snakes spread out all over (this area) here." [note: both hands used]

b) "They used to live all over the area on that side."

c) The (group of) saltpans on the mid-distant side there is Anmatyerre (country).

FIG. 8.4.   The wide hand point: form and examples.

tells the relative orientation of the surface upon which things are extended or spread. For example, when the palm is down and horizontal, it may indicate salt pans spread out over flat ground. If the palm were facing out and vertical, it could indicate, for instance, paintings spread out over a cliff face. When identifying large regions, or indicating the degree of *spreadness* of a mass object (like water), this point often co-occurs with a sweeping, rotating motion. Moreover, this is the only manual point that can be performed two-handed as well as one-handed. When performed with both hands, one is emphasizing either the extent of a region, the degree of spread, or the large number of objects referred to.

In Arrernte grammar, there is no obligatory marking in noun phrases to indicate singular or plural (i.e., number is not marked in NPs). So, for instance, a phrase like *arne nhenhe* (tree this) can mean either "this tree" or "these trees." However, the singular/nonsingular distinction is frequently made gesturally: When the one-finger point accompanies the phrase, the interpretation is "this tree," whereas when the wide hand point accompanies the phrase the interpretation is "these trees."[11] I have been pulled up in

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[11]As Haviland (chap. 7, this volume) observes, "[t]he complex morphology of pointing gestures means that they are typically not 'simple referring devices' but rather complex semantic portmanteaux . . . linking in a single morphological guise many of the same semantic domains—quantity, shape (or 'gender'), and proximity—that characterize spoken demonstratives."

the past by Arrernte consultants frustrated with the fact that I used an index-finger point when I intended reference to multiple objects. It is in this sense that the wide finger point and the one finger point are in contrastive distribution. They can occur with the same phrase or utterance and totally change the basic (propositional) interpretation of the communicative act.

The "Flat Hand Point."   The final manual point is referred to by the phrase *iltye ilperrele thilemele ileme* (hand-flat pointingly tell) "telling by pointing with the flat hand." In the flat hand point, all the fingers are extended and drawn together (abducted). The form of the point is usually with the palm to the side (i.e., it conforms closely in its morphology to the Neapolitan point described by Kendon and Versante as "open hand di taglio"). However, especially when it is used to point to something behind the speaker and is launched over the shoulder, it can take on an orientation where the palm either faces up or down. Further, this gesture regularly identifies the line along which extended objects (like mountain ranges) lie, and can sometimes be used to partially model the referent, in the sense that the angle of the palm may convey information such as the nature and absolute direction of side slope (cf. Levinson, in press). Finally, it needs to be mentioned that there is a two-fingered variant of the flat hand point in which only the index finger and middle finger are extended (with the thumb aligning with them) and the ring and little finger are drawn in. Although radically different in formal appearance, once again Arrernte speakers do not regard it as anything but an instantiation of the flat hand point (see Fig. 8.5).

To be more explicit about the meaning and function of the flat hand point, it is used to project lines and paths. For instance, it is used to identify the linear orientation of extended objects such as a creek, road, or range of hills that lie in a particular direction. It is also typically used to indicate the orientation of subpaths traveled or to be traveled in getting toward an overall goal and so is commonly found in direction giving. This is the form of point that is used to identify the cardinal directions, and here again we find a contrast with the typical behavior of English speakers. Of 20 Australian English speakers, interviewed individually, whom I asked to show me where north is, 14 used an index-finger point to indicate direction. Of 16 Arrernte speakers who were asked the same thing, all 16 used the flat hand point. So once again, we get a clear sense that an English speaker's deployment of an index-finger point diverges significantly from that of an Arrernte speaker's.

As well as projecting lines and paths, the flat hand point can sweep out laterally to indicate a sector or quadrant. This use contrasts with the use of the wide hand point to indicate regions in that the wide hand point is used to pick out identifiable or known regions, whereas the lateral sweep of the

Variant forms:
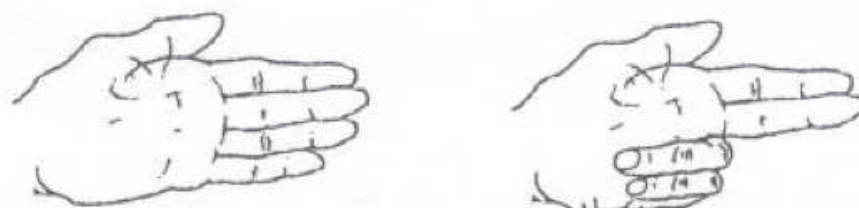
Examples:

a) "That range lies like this."
   [from east to west]

b) "South."

c) 'Prepare to curve around to the
   north'

d) 'Make a sharp turn here to the
   northeast'

FIG. 8.5.   The flat hand point: variant forms and examples.

flat hand creates a region of interest. For instance, it can be used to delimit an area in which a search for bush food should take place.

With respect to the two-fingered variant of the flat hand point, once again we come to a point where Arrernte speakers are unable to call on conscious reflection to elucidate their understanding of the form. However, as in the case of variant forms of the one-finger point, the deployment of the two-fingered variant of the flat hand point appears to be governed by contextual factors. Although I do not have many examples, the examples I have suggest the following generalizations. First, the two-fingered variant is made much more rapidly than the full-hand variant. Second, this component of speed seems to be related to the content of the co-occurring speech. Third, the two-fingered variant is more likely when (a) an individual is being told to move rapidly along the indicated subpath, or (b) the driver of a vehicle is being warned by a navigator that upcoming turn to the direction indicated is particularly close and/or tight (i.e., one will have to act quickly to take the turn appropriately).

Manual Points, Gesture Space, and System: Where's the Thumb Point?

Having briefly described the three recognized manual points individually, we return for a moment to issues concerning manual points as a system. In particular, I wish to touch on some aspects of how manual points are deployed within the gesture space of Arrernte speakers. This issue is related, in part, to a feature of the English (and Dutch and Neapolitan) pointing system that is absent from the Arrernte system, namely, the use of thumb pointing. That is, Arrernte speakers do not use thumb points as part of their system, whereas English speakers use a thumb point in opposition to an index-finger point in a manner at least partially determined by different body-based divisions of space, as described next.

In a paper subtitled "Cultural Differences in the Use of Body-Schema for Spatial Thinking and Gesture," Levinson (in press) presented data that argue strongly for the view that speakers of languages (like Arrernte) that rely heavily on the absolute frame of reference for spatial localization (even on a small scale) use spatial gestures in a way that varies systematically from those of speakers of languages (like English) that rely heavily on a (body-based) relative frame of reference. Based on the analysis of videotaped data of Tzeltal speakers and Guugu Yimithirr speakers, supplemented by my observations of video data of Arrernte speakers, Levinson identified a number of features that seem to characterize "gesture morphology" in communities using an absolute (cardinal or geo-based) system. A few of these features include: (a) Absolute gestures tend be large and expansive; (b) gesturing tends to be more evenly distributed across the dominant and nondominant

hands; and (c) the "gesture space consists of a two-metre sphere with the front 180 degrees more heavily used but the full 360 degrees being available," in contrast to McNeill's characterization of the American English speaker's gesture space as a "shallow disk in front of the speaker." In a more systematic comparison of 180 Arrernte and Dutch spatially oriented gestures (de Ruiter & Wilkins, 1998; Wilkins & de Ruiter, 2001), we have further confirmed and expanded on Levinson's findings: Arrernte speakers use a significantly larger gesture space than the Dutch, one that more frequently uses full arm extension, and frequent (and deep) breaking of the back plane. Moreover, although Dutch speakers regularly used one hand dominantly for talking about the space around them, and consistently made contralaterally oriented gestures, the Arrernte speakers in the sample deployed gesture in a systematic manner such that they used the left hand to gesture to places located in the region on the left side of their body, and the right hand to point to places on the right side (i.e., all gestures were ipsilateral, and there were no contralateral points).

One of the common differences we've found is the manner in which Dutch and Arrernte speakers refer to locations that are behind them. The Dutch speakers would either rotate their bodies, as if sighting their location (although it was rarely a place that was visible from their perspective), and then launch an index-finger point, or more commonly they would use a thumb point without rotation or sighting. As Kendon and Versante (chap. 6, this volume) write with respect to thumb pointing among the Neapolitans:

> When the thumb is used in pointing, all the fingers are flexed to the palm of the hand and the thumb is fully extended. With this hand shape it is easy to direct the thumb upward, backward over the shoulder, or to the left or to the right. Perhaps for this reason it is often used to point to things that are either behind or to the side of the speaker. However, hand shapes such as the index finger or open hand are also observed in use by people pointing in these directions. Hence whether the thumb is used or not appears also to depend on other factors besides the convenience it might offer as a means for referring to something behind or to the side.

For current purposes, all we need to recognize is that thumb pointing is a common Anglo and European gesture behavior, strongly associated with the back plane, and it may bring with it further connotations that put it in contrast with index-finger pointing.[12]

This contrasts with Arrernte pointing behavior. When referring to the back plane, the most common means of gesturing was to launch one of the

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[12]Saitz and Cervenka (1972) observed that thumb pointing is common in both Colombia and the United States, but noted that the uses differ in their connotations. They wrote: "Thumb protruding from fist indicates the direction. Whereas in the U.S. this gestures is strong and often rude, in Colombia it is a more acceptable way of indicating direction" (p. 34).

three Arrernte manual points over the shoulder, pressing it deep into the
back plane in a manner that looks "awkward" or "unnatural" to English
speakers (see Fig. 8.6). Such gestures would often also rise above head level,
in keeping with a more extensive gesture space. On a few occasions, refer-
ences to the back plane were made using points in which the arm was at full
stretch and swung out laterally to the side of the body and again "strained"
deeply into the region behind the body axis. Also attested to were cases in
which the pointing looked like it was targeting a front part of the body (e.g.,
it looked like the speaker was pointing to their chest or the shoulder), but
what was intended was a reference to a location with the indicated bearing
at a position behind the speaker. As Levinson (in press) noted, on the basis
of similar occurrences in his own work, "[t]his observation perhaps has
some bearing on the 'disembodied' kind of spatial reckoning involved: the
self becomes as it were wholly transparent." In all of these different cases of
Arrernte pointing to the back plane, I have attested to the same three dis-
tinct manual point types that have just been described (and only these).

On the basis of the preceding observations, it should be obvious that
the index-finger point of an English or Dutch (or Neapolitan) speaker is
made under different understandings of gesture space and system when
compared to that of an Arrernte (or Tzeltal or Guugu Yimithirr) speaker.
Children growing up in the Netherlands, for instance, and learning to
speak Dutch have to learn to constrain their gestures to a smaller space
than Arrernte children, and they have to learn the contrast between the
index-finger point and the thumb point—a contrast that belongs to a set
with different oppositional dimensions than that which the Arrernte child
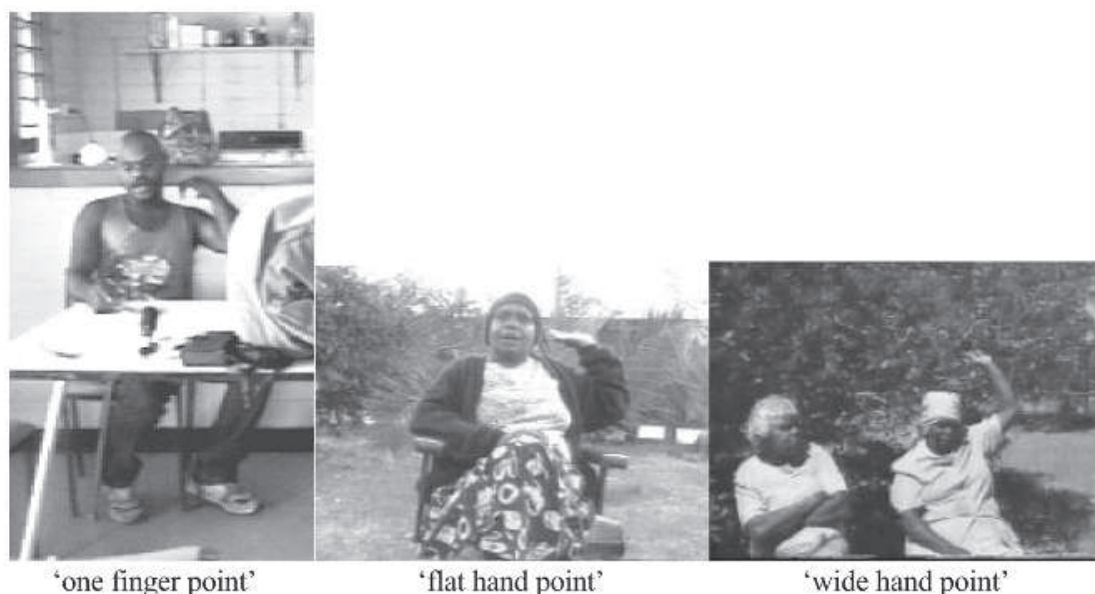

'one finger point'   'flat hand point'   'wide hand point'

FIG. 8.6.   Examples of unsighted pointing (over the shoulder) to the back-
ward plane.

must master. In the end, Arrernte children will have acquired a system that allows them to freely launch an index-finger point over their shoulder without body rotation and in an unsighted and seemingly awkward fashion, whereas this will not be part of the Dutch children's repertoire because they have simply acquired a different system, which cannot be said to have the same index-finger point. The comparative work of Levinson suggests that these differences are not independent of differences that also manifest themselves in differences in language use and that rest on deeper distinctions in the specific cognitive strategies that are culturally selected for employing coordinate systems in spatial reckoning (e.g., absolute vs. relative).

OBSERVATIONS ON ARRERNTE TRANSMISSION AND ACQUISITION OF POINTING

In preceding sections, some presumed consequences of system differences for the acquisition of pointing have been mentioned in passing, but what do we know about the actual transmission and acquisition of Arrernte pointing? In this section, I touch on this question briefly by presenting three forms of available evidence: (a) native speakers' own comments on teaching practice, (b) observed instances where children's pointing behavior has been corrected, and (c) actual observations of change in pointing behavior in the acquisition process. These three lines of evidence converge and lead to the conclusion that pointing behaviors, including pointing forms, are subject to social transmission.

Arrernte speakers readily talk about how they learned to point and the right way to go about teaching pointing. Such discussions are usually in the context of learning about country and learning about directions. That is to say, there seems to be a strong association between teaching about socio-geographical surroundings (i.e., place names, Dreaming stories, paths of travel), way-finding, and practices associated with the traditional hunter-gatherer lifestyle, on the one hand, and teaching pointing as one of the appropriate means for communicating and discussing such knowledge, on the other hand. I next present a free English translation of one such discussion at length. It comes from a videotaped session with two Arrernte women whom I interviewed about directions and route-finding knowledge in February 1995. The main speaker in the discussion given next is V.D., one of the most knowledgeable, skilled, and important of Arrernte teachers and language experts, and a strong voice for the preservation and continuation of Arrernte cultural and linguistic practices. She is supported in this discussion by her colleague S.T. Sections that especially address teaching of pointing are in bold type.

V.D.:   *It used to be that really young kids knew about that before* [i.e., directions and how to point], *but not anymore. They're slower now, 'cause they're not taught properly—not like the old people taught us. The old people, they'd test young kids. "Where's East?" you'd ask a young kid, especially kids from the bush—not town kids—and they'd point to the directions, y'know.* **They mightn't know which direction the exact place is but they normally can point, and point the proper way, holding the hand the right way.** *That's how it was before. "Which way is west?" they might ask, and the kid would point straight away. They used to learn a lot from the old people in the early days. Yeah, y'know,* **if they asked a little kid, the kid'll point direct to where they've been asked. "Where's North?" "There" the kid would say** [demonstrates pointing to the north with the flat hand point]. *And if he points wrong, they say "No, not there, it's there!"* [again demonstrating the correct bearing with the flat hand point]. *And if he didn't use his hand right, you know, to point, they'd say "Don't point like that!"* [demonstrates a "wide hand point"] *"Point like this!* [demonstrates a "flat hand point"] *Do it this way so you can be understood properly." And they used to really force that onto you to make sure that you learned it.* But nowadays it's not like that. . . .

   And they used to always do that [i.e., test the kids], *even if you were traveling too. You know, if you were traveling from one place to another, they'd tell you which direction you had come from and which direction you're going to.* **And they'd ask, "So, where are we going to today?" And the young kids would just have to point, and maybe they'd know the direction but they wouldn't show it the right way** [demonstrates an index-finger point, which is wrong in conjunction with motion]. *So, the old people would say, "Do it like this, with this sign"* [demonstrates the "horned hand" sign for global direction of motion]. *Older kids would also have to say the right thing as well* (as pointing properly). *They had to know those words "East," "South," "West," "upstream."—"Towards that way is called what?"* [making a flat hand point to the east], *and they'd have to answer "East." The same with "North," "South," things like that.*

S.T.   *We were taught a lot of good things by the old people, a lot of strict rules we had to obey at the time.*

This passage is a further demonstration of how conscious Arrernte speakers are of pointing as a significant communicative act. Moreover, as well as indicating that there was overt teaching, testing, correction, and demonstration of pointing behavior, at least in relation to direction and travel, it also suggests a natural staging to the transmission process: Arrernte children would be expected to learn how to point properly before they were expected to know the appropriate terms, or ways of speaking, that would accompany pointing.

Also embedded in this passage are two examples that V.D. made up on the spot to demonstrate the types of corrections older people would make in relation to children's pointing forms. First, she shows the correction from a wide hand point to a flat hand point in the context of teaching how best to indicate which way the cardinal point directions lie. Second, she

shows the correction from a one-finger point (index-finger variant) to the use of the horned hand sign in the context of teaching how best to show the endpoint goal of motion. In this first instance, she explicitly notes that the reason for choosing the right form of pointing is "*so you can be understood properly.*" One cannot underestimate how important accurate guide signing is in harsh desert conditions, especially in more traditional times when people had to travel great distances on foot. Because pointing, as an analogue mode, is more accurate than language, it is not surprising that adults would want children to learn to point according to the recognized conventions "so they could be understood properly."

Quite fortuitously, I have two videotaped instances of children being corrected in their pointing behavior, one child by his mother and the other child by her 9-year-old sister. Both children are 4 years of age and were taking part in a pilot project designed to elicit pointing behavior and demonstrative terms from both adults and children. The design is a variant on the "walnut game." This involves a ball and three (opaque) cups, and the ball is rapidly moved back and forth from under different cups in full view of the person playing the game. Once the investigator has finished shuffling the ball and the cups around, the respondent has to point and say which cup he or she thinks the ball is hidden under (Pederson & Wilkins, 1996, p. 14). In this game, Arrernte adults always produced a one-finger point, typically the index-finger variant, because only one cup is being selected out of the three. In both cases of correction, the child was failing to use a one-finger point, and the child was forcefully shown how to make a good index-finger variant. In the first instance, the young boy had used a wide hand point (which is used for multiple, not singular objects), and although the intended target was clear, the mother grabbed his hand and with her own hand wrapped all fingers except his index finger tightly closed such that his index finger was pointing in the manner of a canonical index-finger point. The older sister performed the identical operation on her younger sister, but in this case it was to prevent the younger sister from actually reaching down to pick up the chosen cup. Thus, in both cases, caregivers are physically shaping children's points when they perceive that their indicating behaviors are inappropriate for the context. That they shape the children's hands into a tight index-finger point suggests that this form is indeed the canonical form of one-finger pointing for the Arrernte. However, it also shows that children might not select it as the natural option in a given context, and when that happens, caregivers quickly recognize the fact and are willing to intervene to physically "teach" the appropriate form for the context.[13]

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[13]I believe that these facts further support Haviland's contention (chap. 8, this volume) that pointing gestures can be far more conventionalized and emblematic in character than the literature on gesture has heretofore allowed. He observes that "in terms of their segmentability,

As a brief digression, I would like to insert quite a different sort of example that further demonstrates the perceived need to monitor and train accurate orientation behavior. One Arrernte consultant told me of an old blind man who would train younger men in traditional knowledge about country. When testing the young men to determine whether they had accurately remembered what they needed to learn, he would sit next to the individual to be examined with his hand lightly on the young man's forearm and in that way feel whether the gestures the young man made were oriented in the appropriate direction.[14] Indeed, absolutely oriented gestures are so much a part of traditional narrative performance that it is often very difficult to reconstruct the actual content and force of a text from an audio recording alone. As Levinson (in press) wrote, "in Absolute gesture systems truth-conditional information is happily conveyed in the gesture channel, and may then be picked up by an interlocutor in speech." A further consequence of this "is the care and consistency with which gestures are made and monitored—they must add up to a consistent picture, and apparent inconsistencies will lead to interactional repair sequences just as verbal inconsistencies may do."

Although the factors just described speak to the issue of conscious teaching and transmission, they do not really say anything about the actual acquisition of pointing. Here I lay out some cursory details of a study that I intend to report on in greater detail later. In early 1995, I undertook a short trip out bush with an extended family of 14 people wishing to return to the heart of their traditional country. During the trip, I was able to make sys-

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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." I would, however, caution against his suggestion that this means "pointing is simply part of language." It may be that pointing is differently systematized in different cultures—in some it may be integrated as part of language, and in others it may be separated into an independently structured semiotic system that is used in parallel with language, and in still others pointing may have fewer emblematic qualities than Haviland suggests. In other words, pointing in different cultures may vary along a number of different continua, including a continuum of conventionalization and a continuum of systematicity.

[14]In reference to the orienting abilities of blind people in Kukatja communities, Peile (1997) wrote that, when directed,

> a blind person will unerringly go north, south, east or west as he is told to do so (these compass directions are also given to a blind person to find a chair to sit down in a room, etc.). The blind person is not directed to go to the right or left, backwards or forwards, as the case may be. (pp. 46–47)

This is yet another demonstration of the prevalence of absolute over relative spatial orienting behavior in Desert Aboriginal communities. It also shows that ability to keep track of one's absolute orientation can be independent of vision and visual cues.

tematic observations of the spatial deictic gesture behavior of the members of this family (between ages 20 months and 59 years). On the trip there were five children under the age of 5. The exact ages were: 1;8, 2;2, 3, 4;6, and 4;9 (years;months). A surprising finding was that the three youngest children all used a pointing form that has not been observed with adults, and they used this form for all instances of pointing. The pointing form was like a cross between the adult wide hand point and the middle-finger variant of the one finger point: a loosely spread hand with the middle finger raised and directed (see Fig. 8.7). Of more than 40 observations of pointing for these children, with at least 10 instances for each of the three children, there was never a deviation from this pointing form. Even when children were mimicking the pointing behavior of an adult, which happened in two observed cases, they used this form of the pointing hand rather than the form the adult had chosen. Obviously, what was striking was the complete absence of any index-finger point even in typical contexts where one would have expected it. The two 4-year-old children, in contrast, had acquired more than one pointing form and both showed usage of a canonical index-finger point alongside a wide hand point.

Although the literature on the development of pointing does not report any occurrences of middle-finger pointing, when George Butterworth saw these Arrernte examples he noted that he had observed some of the English children in his laboratory also making middle-finger points, although he did not say how systematic this was. In discussing my chapter, Butterworth (chap. 2, this volume), writes that "such middle-finger pointing is occasionally observed in Western infants too," and he acknowledges that there seems to be "a permissible (but narrow) envelope of variation in the form of the gesture that, during development, converges on the canonical indexical form." What I find significant about the Arrernte case, though, is that it was all three of the

(pointing to bird in hollow of tree)   (pointing to father on hill top)

FIG. 8.7.   Two examples of the unique pointing form used by a cohort of three young Arrernte children (the form involves the middle finger extended from a spread hand).

youngest children together, and that, given the timeline for the development of pointing suggested by Butterworth, one would have expected the emergence of the privileged form by age 3. I was able to do follow-up observations of two of these three children about 7 months later (when they were 2;9 and 3;7), and both showed no evidence of their earlier "unique" pointing form, but instead manifested a canonical one-finger point as well as at least one of the other conventional adult pointing forms.

So why, in a culture that supports the public use of the "index finger" for pointing, would these three young children not have this form (a supposedly universal basic form of human nonverbal communication) until so late in their communicative development? First, I suggest that the fact that all three used the same unique form is not independent of the fact that they formed a cohort of close playmates—a peer group. This is a social factor.[15] Second, it seems significant that once there is another conventional manual pointing form in the child's system (wide hand point or flat hand point), then the index-finger variant of the one-finger point becomes available. This suggests a systemic influence on these three young children's choice of point. In particular, I propose that the "unique" form of pointing this cohort of three children converged on may be an intermediate mixed ("compromise") form between the one-finger point and the wide hand point—the two most common points for picking out visually available objects. The form may in fact represent the first recognition of the adult system, and later, once the children gain further understanding of the system, the form then "unpacks" into the more conventional forms. In a sense, this is like Petitto's (1987, 1997) argumentation concerning the transition in the acquisition of ASL from pointing as a gesture to pointing as a pronominal sign in the language system; it is only when pointing becomes a sign in the structured system that there is "confusion" as to how to correctly target the form. If the Arrernte data were analogous, then I would not be surprised if, at some stage prior to my first observations of these children, one or more of them did manifest index-finger pointing behavior of the type described by Butterworth for children earlier on in infancy. However, the combination of social factors (the power of the peer cohort) and the first recognition of the existence of a structured system of adult Arrernte nonverbal behavior could eradicate the index-finger point in favor of the compromise point, only to see it reemerge again once the system starts developing oppositions.[16]

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[15]So I am in no way suggesting that all Arrernte children go through a stage of using this unique form, and in fact I have observed other young Arrernte infants who seem to start out with something like an index-finger point.

[16]As Melissa Bowerman pointed out to me, this scenario of appearance followed by disappearance and then subsequent reappearance conforms to the U-shaped behavioral growth curve that is found in many other areas of cognitive development (see, e.g., Strauss, 1982).

I admit that much of this is speculative. However, the facts driving the speculation should themselves be sufficient to bring into question claims concerning the privileged nature of index-finger pointing and the lack of social transmission in pointing. The position that adults only "provide models of the frames within which pointing may be used, not models of the action itself" (Lock et al., 1990, p. 55) is not consistent with the Arrernte data presented in this section.

DISCUSSION

The stated aim of this chapter was to challenge and clarify the following common views: (a) that pointing with the index finger is a universal human behavior, and (b) that pointing with the index finger is not socially transmitted but is a basic (natural) form of reference. I undertook this crusade against the notion that the index finger is universally privileged in pointing primarily as a means to help clarify the extent to which pointing is shaped by cultural and semiotic factors. More particularly, I have used the opportunity to describe what is known about the Arrernte use and understanding of pointing in daily interactive communication. I believe this Arrernte window on pointing is fairly unique because Arrernte speakers can guide us through much of the complex structure of their system of pointing due to the fact that they are highly conscious about much of their nonverbal communicative behavior, and, as a consequence, they have a structured and conventionalized way of talking about these behaviors.

It has not been my intention to pursue a radically relativist position. There do appear to be some important universals. All cultures do, for instance, appear to make systematic use of some part of the body for deictic reference to places and inanimate objects. As shown in "What Is Meant by the Proposition That 'Pointing With the Index Finger Is a Human Universal'?" however, there appear to be cultures in which the canonical form of pointing is a lip point and there is no, or little, evidence of systematic pointing with the index finger (nor is there evidence that index-finger pointing is being suppressed or tabooed).

Of course, before making claims about the universality (or non-universality) of index-finger pointing, or any form of pointing for that matter, the notion of what one takes pointing to be must be clarified. Do we merely mean the etic behavior or the emic structure? As an analogy, consider the question "Do all languages have a 'b'?" It is a different question depending on whether we mean [b] as a phonetic unit or /b/ as a phoneme. Of course, more languages are likely to have [b] than /b/, but the answer to both questions would be interesting and revealing, although for different reasons. One tells us about physical gestures regularly realized in the flow of

speech, and the other is suggestive of how those gestures are structured at a more abstract level to form meaningfully contrastive oppositions in a system. It does appear that the index-finger point is such a natural etic behavior that it has an extremely widespread occurrence across cultures, but I have been interested in it as an emic phenomenon.

So like Haviland (chap. 7, this volume) and Kendon and Versante (chap. 6, this volume), I have chosen to further clarify the notion of what pointing is and can be by exploring nonverbal deictic behaviors in another culture (i.e., a non-Anglo culture). All three studies converge on the conclusion that pointing is socioculturally complex, the forms are shaped by social convention, and there tends to be a system of pointing signs in oppositional contrast. However, I believe that the results of the Arrernte study suggest that we should be somewhat cautious in how we interpret the findings from both Haviland's Tzotzil study and Kendon and Versante's Neapolitan study. What the Arrernte study suggests (see especially "The Three Recognized Types of Manual Pointing") is that we need to be careful to distinguish between the etic variant forms of a pointing sign, and the emic units that are in contrastive opposition. I could be guided to this distinction in Arrernte because there was a clear point at which Arrernte speakers were no longer conscious of observed differences and could no longer employ conventional labels. Although the form and distribution of etic variants of a given emic pointing type were systematically governed by factors of discourse context, one would not want to say that they conventionally conveyed any other informational content beyond that which can be attributed to the emic pointing type. If I had relied solely on the same observational methodology as Kendon and Versante or Haviland, I would have been tempted to treat the middle-finger pointing variant of the one-finger point as a sign different from the canonical index-finger pointing variant, and similarly would have treated the two-fingered variant of the wide hand point as being a sign contentfully different from the standard fully spread hand variant. In other words, I would have missed the structure in the system and have paired every form difference with a content difference without realizing that some formal variants are in truly contrastive distribution, whereas others are in complementary distribution, and in this latter case one should not confuse the environmental features that condition etic occurrence with semantic features of content conveyed. This is not to say, for instance, that the Tzotzil or Neapolitan systems are anything but what the authors very insightfully describe them as; it is simply to say that it is not clear whether the methodology they have have employed successfully distinguishes etics from emics (i.e., contextual determination of meaning from conventional semantic encoding). Moreover, I do not claim that it is only in cultures where we have access to native metadescriptions and clear intuitions where we can discover and explore the distinction between etics and emics in gesture, only

that the Arrernte case helps us see that gesture studies must identify methods, techniques, and discovery procedures which clearly recognize this distinction. Only in this way will we fully appreciate the complexity of the phenomena we are studying and come to understand the way in which pointing gestures actually communicate information.

As demonstrated in "The Arrernte View of Pointing," the Arrernte system of orienting behaviors is hierarchically structured and the canonical index-finger point is merely an etic variant at the fourth level in the system. This hierarchy is given in Fig. 8.8. Note that in this figure I have not shown all possible branchings, only those branchings that I discussed specifically in this chapter.
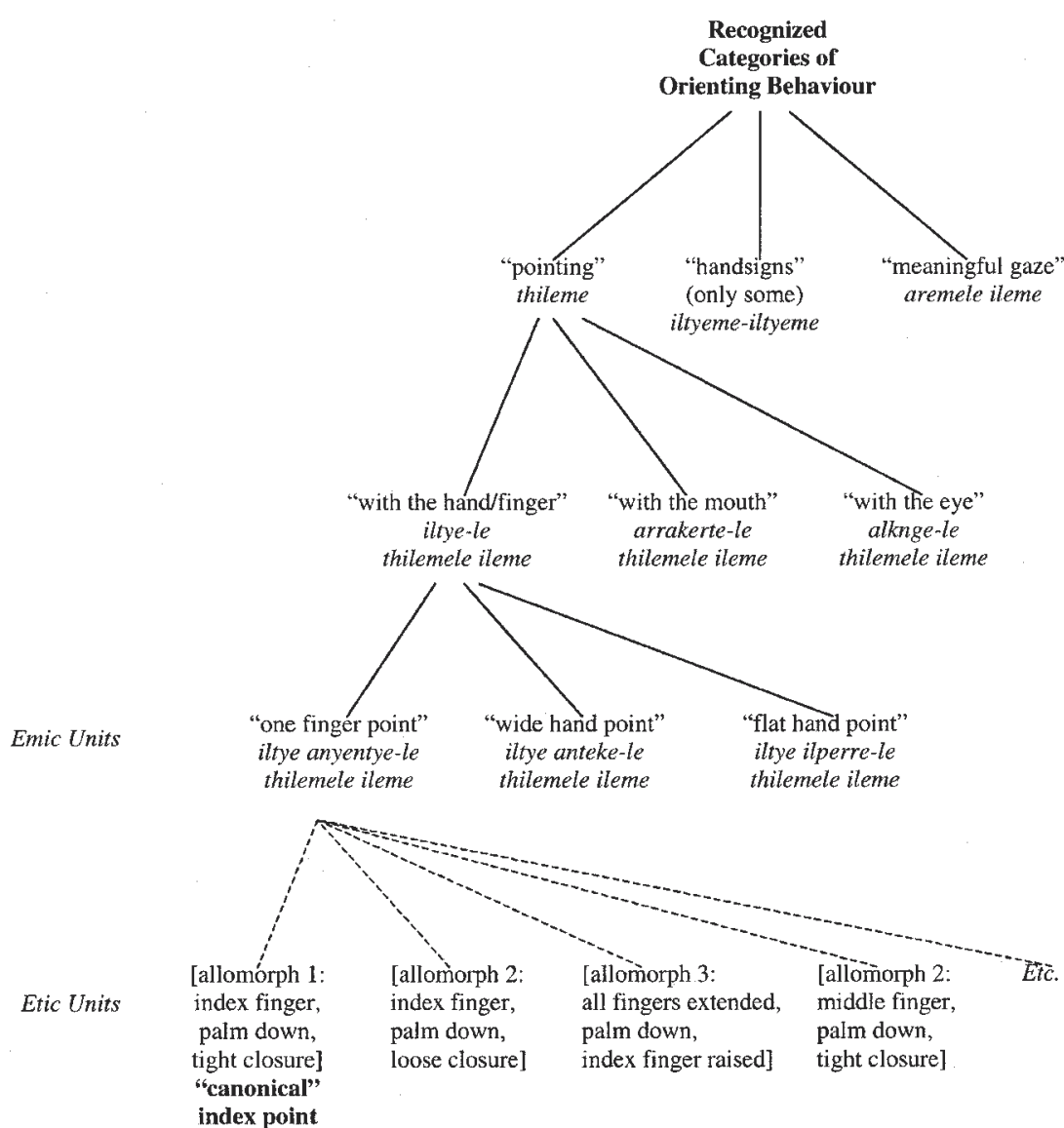
FIG. 8.8.   The hierarchical structure of Arrernte orienting behaviors, showing the embeddedness of the canonical index-finger point as an etic form variant of the one-finger point.

As far as index-finger pointing is concerned, the discussion of the Arrernte system warrants the following conclusions.

1. *Index-finger points in different cultures are embedded in differently structured sign systems with different functional–pragmatic considerations.* That is to say, to understand precisely what an index-finger point means, and when and how it should be used, we must understand the broader system of deictic gestures and their function. The broader Arrernte system was represented in Fig. 8.8. It is clear that the English system does not have the same structured system. For instance, there is no recognized mouth pointing that English speakers deploy in informal situations with familiars (see "True Pointing From the Arrernte Perspective"), and there is no recognized "thumb point" that Arrernte speakers deploy to refer to the back plane (with perhaps a hint of informality or rudeness).

2. *Index-finger points are cross-culturally divergent in their combinatorial properties, with both linguistic and other nonlinguistic signs.* As noted in "The One-Finger Point," the English sentence "give me those two cups" can be accompanied by an index-finger point, but its propositional equivalent in Arrernte cannot. This is because of stricter understanding of "individuation." In relation to its combination with other nonlinguistic conventions, I observed at the end of "True Pointing From the Arrernte Perspective" that all forms of manual pointing can systematically occur with a nonlinguistic convention in which angle of the arm shows relative distance in horizontal space, as long as the objects and places referred to are nonvisible. A similar convention is not present for English speakers, so the index-finger point does not have this combinatorial possibility (cf. Haviland, 1996b).

3. *Index-finger points possess a different semantic and functional range cross-culturally.* In the case of Arrernte, a one-finger point is used neither to refer to paths of motion, nor to point out compass point directions. Both of these functions are, however, common for the English index-finger point, and are conveyed in Arrernte through other manual gestures. Thus, we see a different form-to-function mapping and a different function-to-form mapping. Further, as noted in 2, the Arrernte one-finger point was shown to be used under a different (and stricter) understanding of individuation than the corresponding English pointing form.

4. *Index-finger points have different physical forms cross-culturally.* That is to say, the forefinger point does not have the same shape or range of alternate forms in different cultures. We have seen that Arrernte speakers, for instance, use a very open-handed index-finger pointing variant that is not attested to among English speakers. Moreover, we have seen that the middle finger variant is classed together with all of the index-finger variants as being manifestations of the one sign—the one-finger point (see "The One-Finger Point").

5. *Index-finger points have a deployment in gesture space that varies cross-culturally.* In "Manual Points, Gesture Space, and System," I observed that all Arrernte manual points, including index-finger variants, were deployed in a gesture space that is significantly larger than that used by Dutch speakers. Moreover, when making references to entities in the back plane, Arrernte speakers regularly launched one of the manual points over their shoulder in a fashion unattested to in the English and Dutch data examined. In similar circumstances, English and Dutch speakers use a thumb point or turn to sight their point. The Arrernte do not, themselves, recognize a "thumb point."

6. *Index-finger points invoke, and are only interpretable against, the unique culture-specific (communal) common grounds of each community.* Throughout the chapter, the absolute orienting behavior of Arrernte speakers has been mentioned in contrast to the relative (body-based) orienting behavior of English and Dutch speakers. Because of this difference in the primary coordinate system used for spatial reckoning and the communication of spatial information, an Arrernte speaker will regularly expect manual points to be absolutely oriented, and so interpret them as conveying correct information about actual bearings. English speakers do not make the same presumption, and this can lead to cross-cultural misunderstanding in which an Arrernte speaker presumes that an English speaker is saying something in gesture that the English speaker did not in fact intend (see "Manual Points, Gesture Space, and System").

In short, on all semiotic parameters, the Arrernte one-finger point diverges from the English index-finger point. As such, it can hardly be surprising that all the evidence mustered together in "Observations on Arrernte Transmission and Acquisition of Pointing" strongly suggests that Arrernte children do, in a very real sense, learn how to point through social transmission, and this includes learning the appropriate way to make and use the index-finger variants of the one-finger point. Three forms of evidence were brought to bear on this issue: a native speaker's own commentary on how pointing was (and should be) taught, observations concerning how adults correct the pointing behavior of children, and the unique case of a cohort of three young Arrernte children whose only form of pointing was not attested to in adult pointing and involved the extension of the middle finger rather than the index finger. An examination of this third line of evidence strongly indicated the role of both social factors and systemic factors in determining the shape of the pointing form. According to Povinelli, Bering, and Giambrone (chap. 3, this volume), the morphological constraints model proposed by Povinelli and Davis (1994) to account for the universality of the pointing gesture in humans can account for the Arrernte data. I leave readers to judge for themselves whether they think that is the case.

To conclude, pointing (i.e., the use of some part of the body to make deictic gestural reference) appears to be universal. However, the use of the index finger for pointing does not appear to be universal. Where it does occur, it is subject to cross-cultural variation along a number of semiotic parameters. Although it is easy to find the etic behavior of a canonical index-finger point in many different cultures all across the world, without detailed research it is impossible to be sure about either the exact content of such a behavior or the patterns of complementary and contrastive distribution this behavior has in relation to other etic behaviors. In fact, simply observing the behavior cannot tell us whether the behavior was purely ad hoc, like an English speaker's occasional use of the foot, knee, or elbow to point, or whether it was a conventional sign in a structured system of signs. Further, although it may be true that the cross-cultural range of associated forms and types of content conveyed may fall within a motivated and predictable range of possibilities, the exact determination of the sign form, the sign content, and the sign system will all be subject to cultural shaping and social transmission. Butterworth (chap. 2, this volume) gives some convincing arguments as to what makes the index finger a natural candidate for pointing, but it is important to realize that these do not make it so privileged that it is to be considered an absolute universal. The meta-understandings of other cultural groups concerning pointing can provide a useful alternative perspective on this topic and lead us to reconsider such long-held, pretheoretical presumptions. Finally, I believe that a better understanding of what the Arrernte mean by the term *thileme* helps us to better refine what we want to mean in using the term *pointing*.

ACKNOWLEDGMENTS

REFERENCES

Bates, E., Oconnell, B., & Shore, C. (1987). Language and communication in infancy. In J. D. Osofsky (Ed.), *Handbook of infant competence* (2nd ed., pp. 149–203). New York: Wiley.

Butterworth, G. E. (1995). Factors in visual attention eliciting manual pointing in human infancy. In H. L. Roitblat & J.-A. Meyer (Eds.), *Comparative approaches to cognitive science* (pp. 329–338). Cambridge, MA: MIT Press.

Clark, H. (1996). *Using language.* Cambridge: Cambridge University Press.

Eckert, P., & Hudson, J. (1988). *Wangka Wiru: A handbook for the Pitjantjatjara language learner.* Adelaide: University of South Australia [ARI & SLI].

Feldman, H. (1986). *A grammar of Awtuw.* Pacific Linguistics (Series B, No. 94). Canberra: Australian National University.

Franco, F., & Butterworth, G. E. (1996). Pointing and social awareness: Declaring and requesting in the second year of life. *Journal of Child Language, 23*, 307–336.

Haviland, J. B. (1993). Anchoring, iconicity, and orientation in Guugu Yimithirr pointing gestures. *Journal of Linguistic Anthropology, 3*(1), 3–45.

Haviland, J. B. (1996a). Projections, transpositions, and relativity. In J. J. Gumperz & S. C. Levinson (Eds.), *Rethinking linguistic relativity* (pp. 269–323). Cambridge: Cambridge University Press.

Haviland, J. B. (1996b, April). *Pointing, gesture spaces, and mental maps* [Electronically published multimedia discussion paper]. Language-Culture List. Available: http:/www.cs.uchicago.edu/l-c/archives/subs/haviland-john/

Hendriks, H., & McQueen, J. (Eds.). (1996). *Max Planck Institute for Psycholinguistics annual report 1995.* Nijmegen: MPI.

Hewes, G. W. (1981). Pointing and language. In T. Myers, J. Laver, & J. Anderson (Eds.), *The cognitive representation of speech* (pp. 263–269). Amsterdam: North-Holland.

Hewes, G. W. (1996). A history of the study of language origins and the gestural primacy hypothesis. In A. Lock & C. R. Peters (Eds.), *Handbook of human symbolic evolution* (pp. 571–595). Oxford: Clarendon.

Kendon, A. (1988). *Sign languages of Aboriginal Australia: Cultural, semiotic and communicative perspectives.* Cambridge: Cambridge University Press.

Kendon, A. (1992). Some recent work from Italy on quotable gestures ("emblems"). *Journal of Linguistic Anthropology, 2*(1), 72–93.

Kendon, A. (1994). Do gestures communicate? A review. *Research on Language and Social Interaction, 27*(3), 175–200.

Levinson, S. C. (1997). Language and cognition: The cognitive consequences of spatial description in Guugu Yimithirr. *Journal of Linguistic Anthropology, 7*(1), 98–131.

Levinson, S. C. (in press). *The body in space: Cultural differences in the use of body-schema for spatial thinking and gesture.* Paper circulated for the Fyssen Colloquium: Culture and the Uses of the Body, December 1995.

Lewis, D. K. (1969). *Convention: A philosophical study.* Cambridge, MA: Harvard University Press.

Lock, A., Young, A., Service, V., & Chandler, P. (1990). Some observations on the origins of the pointing gesture. In V. Volterra & C. J. Erting (Eds.), *From gesture to language in hearing and deaf children* (pp. 42–55). Berlin: Springer-Verlag.

Morris, D. (1978). *Manwatching: A field guide to human behavior.* St. Albans, England: Triad Panther.

Müller, C. (1996). Zur Unhöflichkeit von Zeigegesten. *Osnabrücker Beiträge zur Sprachtheorie, 52,* 196–222.

Pederson, E., Danziger, E., Wilkins, D. P., Levinson, S., Senft, G., & Kita, S. (1998). Semantic typology and spatial conceptualization. *Language, 74,* 557–589.

Pederson, E., & Wilkins, D. P. (1996). A cross-linguistic questionnaire on "demonstratives." In CARG (Ed.), *"Manual" for the 1996 field season* (pp. 1–14). Nijmegen: Cognitive Anthropology Research Group, Max Planck Institute for Psycholinguistics.

Peile, A. R. (1997). *Body and soul: An Aboriginal view.* Carlisle, West Australia: Hesperian.

Petitto, L. A. (1987). On the autonomy of language and gesture: Evidence form the acquisition of personal pronouns in American Sign Language. *Cognition, 27,* 1–52.

Petitto, L. A. (1997, June). *Ontogenesis of early pointing and language: Evidence from languages where gestures are linguistic.* Paper presented at the Max Planck Institute Workshop on Pointing Gestures, Oud-Turnhout.

Povinelli, D. J., & Davis, D. R. (1994). Differences between chimpanzees (*Pan troglodytes*) and humans (*Homo sapiens*) in the resting state of the index finger: Implications for pointing. *Journal of Comparative Psychology, 108,* 134–139.

Rolfe, L. (1996). Theoretical stages in the prehistory of grammar. In A. Lock & C. R. Peters (Eds.), *Handbook of human symbolic evolution* (pp. 776–792). Oxford: Clarendon.

Ruiter, J. P. A. de, & Wilkins, D. P. (1998). The synchronization of gesture and speech in Dutch and Arrernte. In S. Santi, I. Guaïtella, C. Cavé, & G. Konopczynski (Eds.), *Oralité et gestualité: Communication multimodale, interaction* (pp. 603–607). Paris: L'Harmattan.

Saitz, R. L., & Cervenka, E. J. (1972). *Handbook of gestures: Colombia and the United States* (M. Pekarsky, Illus.). The Hague: Mouton.

Sherzer, J. (1973). Verbal and non-verbal deixis: The pointed lip gesture among the San Blas Cuna. *Language in Society, 2*(1), 117–131.

Sherzer, J. (1983). *Kuna ways of speaking: An ethnographic perspective.* Austin: University of Texas Press.

Sherzer, J. (1993). Pointed lips, thumbs up, and cheek puffs: Some emblematic gestures in social interactional and ethnographic context. SALSA I, 197–212.

Strauss, S. (Ed.). (1982). *U-Shaped behavioral growth.* New York: Academic Press.

Strehlow, C. (1978). The sign language of the Aranda. In D. J. Umiker-Sebeok & T. A. Sebeok (Eds.), *Aboriginal sign languages of the Americas and Australia* (Vol. 2, pp. 349–370). New York: Plenum. (Translation by C. Chewings of Chapter 12 of Strehlow, originally published 1915)

Valiquette, H. (1993). *A basic Kukatja to English dictionary.* Balgo, West Australia: Luurnpa Catholic School.

Wilkins, D. P. (1991). The semantics, pragmatics and diachronic development of "associated motion" in Mparntwe Arrernte. *Buffalo Papers in Linguistics, 1,* 207–257.

Wilkins, D. P. (1993). Linguistic evidence in support of a holistic approach to traditional ecological knowledge. In N. Williams & G. Baines (Eds.), *Traditional ecological knowledge: Wisdom for sustainable development* (pp. 71–93). Canberra: CRES.

Wilkins, D. P. (1995). More than just wishful thinking: The survival of Arrernte worldview is historical fact, not romantic fiction. *Oceania Newsletter, 15,* 8–12.

Wilkins, D. P. (1997a). Handsigns and hyperpolysemy: Exploring the cultural foundations of semantic association. *Pacific Linguistics, C-136,* 413–444.

Wilkins, D. P. (1997b). Alternative representations of space: Arrernte narratives in sand. *Proceedings of the CLS Opening Academic Year '97/'98,* pp. 133–164.

Wilkins, D. P. (1997c). The verbalization of motion events in Arrernte (Central Australia). In E. Clark (Ed.), *The proceedings of the twenty-eighth annual child language research forum* (pp. 295–308). Stanford, CA: CSLI.

Wilkins, D. (to appear). Learning to point the Arrernte way. *Proceedings of 2002 Child Language Research Forum.*

Wilkins, D. P., & de Ruiter, J. P. A. (2001). *A cross-cultural investigation of the relations between speech, gesture and brain lateralisation: Is everybody right?* Invited keynote speech at 2001 Australian Linguistic Society Conference.

Wilkins, D. P., & Hill, D. (1995). When GO means COME: Questioning the basicness of basic motion verbs. *Cognitive Linguistics, 6,* 209–259.

Wundt, W. (1973). *The language of gestures.* The Hague: Mouton. (Original work published 1921)