referents, then it is possible we have a lot more particulars around than we might have thought, or that things other than particulars can be made direct reference to. The same might be said of definite descriptions. If I talk about "the average French voter," which is no particular French person, am I making something we can meaningfully call *reference*? If, as Chomsky notes, there is a flaw in my argument, and I refer to the flaw later on (in correcting it, for instance), does this mean there are such things as flaws out there as particulars?

Finally, and this could be related to the question of fictional names, the use of referential-sounding expressions can be used for entities only discussed with respect to a particular stretch of discourse (Kamp and Reyle 1993 call this "spontaneous fiction"). Many instances of this can be found in the above discussion. Suppose there is a man at the door. *That man* knocks. I talk to **him**. **He** introduces **himself** as Steve. I ask **Steve** to leave. **The guy** was at the wrong door. What am I referring to in these instances? There is no such person, yet I have used what appears to be ordinary referential language to talk about him. The solution in the framework of Kamp and Reyle (1993) is to suggest that whenever we have (apparent) reference, we are in fact positing discourse-markers and associating predicates with them. That is, the reference of language is not objects in the real world, but rather DISCOURSE ENTITIES. It is another stage of evaluation at which there is anything like a semantic mapping to the world (in this instance, models), where distinct discourse entities, for example, may or may not be mapped onto a single real individual. This is hardly a direct-reference way of looking at things, but it holds out interesting possibilities.

NOTES

1   By "pointing," I intend any means of indication of an object, whether one uses the index finger, an open hand, a sideways nod of the head, one's lips, chin, etc. What constitutes "pointing" is, like other gestures, subject to cultural variation.

2   It seems likely that no language distinguishes the fictional from the real in terms of reference. Gregory Ward notes that he made an inquiry on the Linguist List as to whether any known language formally distinguishes noun phrases making reference to fictional entities and real ones, and none was reported.

STEPHEN C. LEVINSON

For those who treat language as a generative system for objectively describing the world, deixis is a big black fly in the ointment. Deixis introduces subjective, attentional, intentional and, of course, context-dependent properties into natural languages. Further, it is a much more pervasive feature of languages than normally recognized. This complicates a tidy treatment within formal theories of semantics and pragmatics. Deixis is also critical for our ability to learn a language, which philosophers for centuries have linked to the possibility of ostensive definition. Despite this theoretical importance, deixis is one of the most empirically understudied core areas of pragmatics; we are far from understanding its boundaries and have no adequate cross-linguistic typology of deictic expression.

This article does not attempt to review either all the relevant theory (see, e.g., the collections in Davis 1991, section III, or Kasher 1998, vol. III) or all of what is known about deictic systems in the world's languages (see, e.g., Anderson and Keenan 1985, Diessel 1999). Rather, I attempt to pinpoint some of the most tantalizing theoretical and descriptive problems, to sketch the way in which the subject interacts with other aspects of pragmatics, and to illustrate the kind of advances that could be made with further empirical work.

A word on terminology: I will use the terms DEIXIS and INDEXICALITY largely co-extensively – they reflect different traditions (see Bühler 1934 and Peirce in Buchler 1940) and have become associated with linguistic and philosophical approaches respectively. But I will make this distinction: indexicality will be used to label the broader phenomena of contextual dependency and deixis the narrower linguistically relevant aspects of indexicality.

1   Indexicality in Communication and Thought

Students of linguistic systems tend to treat language as a disembodied representational system essentially independent of current circumstances, that is, a

system for describing states of affairs in which we individually may have no involvement. It is these linguistic properties that have been the prime target of formal semantics and many philosophical approaches – and not without good reason, as they appear to be the exclusive province of human communication. The communication systems of other primates have none of this "displacement," as Hockett (1958: 579) called it. For example, vervet monkeys produce four kinds of alarm calls, signaling snake, big cat, big primate, or bird of prey. But when the vervet signals BIG PRIMATE, it goes without saying that it means RIGHT HERE, RIGHT NOW, RUN! Indexicality is an intrinsic property of the signals, an essential part of their adaptive role in an evolutionary perspective on communication – animals squeak and squawk because they need to draw attention to themselves or to some intruder (Hauser 1997).

The question naturally arises, then, whether in studying indexicality in natural languages we are studying archaic, perhaps primitive, aspects of human communication, which can perhaps even give us clues to the evolution of human language. Jackendoff (1999) has argued that some aspects of language may be residues from ancient human communication systems, but he curiously omits deictics from the list. There would be reasons for caution, because indexicality in human communication has some special properties. For example, take the prototypical demonstrative accompanied by the typical pointing gesture – there seems to be no phylogenetic continuity here at all, since apes don't point (Kita in press). Secondly, unlike the vervet calls, demonstrative can referentially identify – as in *that* particular big primate, not *this* one. More generally, one can say that whereas other animals communicate **presupposing** (in a non-technical sense) the "here and now," as in vervet alarm calls, humans communicate by **asserting** the (non-)relevance of the "here and now." Thirdly, even our nearest animal cousins lack the complex, reflexive modeling of their partners' attentional states, which is an essential ingredient in selective indexical reference – this is why apes cannot "read" a pointing gesture (Povinelli et al. in press).

But if the phylogenetic continuities seem to be missing, perhaps the ontogenetic priority of deixis will be clear. Indeed, human infants invariably seem to point before they speak (see E. Clark 1978, Butterworth 1998, Haviland in press), although we have little cross-cultural evidence here. Philosophers have long taken indexicality as the route into reference – as John Stuart Mill argued, how could you learn a proper name except by presentation of the referent? The view was refined by Russell, who made the distinction between what he called logically proper names (*I*, *this*), which require such ostensive learning, and disguised descriptions, like *Aristotle*, which mercifully don't. Linguists have argued similarly that deixis is the source of reference, i.e. deictic reference is ontogenetically primary to other kinds (Lyons 1975). But the actual facts concerning the acquisition of deictic expressions paint a different picture, for the acquisition of many aspects of deixis is quite delayed (Tanz 1980, Wales 1986), and even though demonstratives figure early, they are often not used correctly (see Clark 1978). This is hardly surprising because, from the

infant's point of view, deixis is as confusing as a hall of mirrors: my "I" is your "you," my "this" your "that," my "here" your "there," and so forth. The demonstratives aren't used correctly in English until well after the pronouns *I* and *you*, or indeed after deictic *in front of/in back of*, not until the age of about four (Tanz 1980: 145).

Apart from this oscillation of point of view, there's another reason that deixis in language isn't as simple as a vervet monkey call signaling BIG PRIMATE RIGHT HERE NOW! The deictic system in language is embedded in a context-independent descriptive system, in such a way that the two systems produce a third that is not reducible to either. To use Peirce's terminology, we have an intersection of the indexical plane into the symbolic one – it's a folding back of the primitive existential indexical relation into symbolic reference, so that we end up with something much more complex on both planes. On the one hand, symbolic reference is relativized to time, place, speaker, and so on, so that *John will speak next* is true now, not later, and on the other, indexical reference is mediated by symbolic meaning, so that *this book* can't be used to point to this mug.

The true semantical complexity of this emergent hybrid system is demonstrated by the well-known paradoxes of self-reference essentially introduced by indexical reference. Consider the liar paradoxes of the Cretan variety, as in *This sentence is false*, which is true only if it is false, and false only if it is true: the paradox resides in what Reichenbach called TOKEN-REFLEXIVITY, which he considered to be the essence of indexical expressions. There is still no definitive solution to paradoxes of this sort, which demonstrates the inadequacy of our current metalinguistic apparatus (but see Barwise and Etchemendy 1987 for a recent analysis invoking the Austinian notion of a proposition, which involves an intrinsic indexical component).

Indexical reference also introduces complexities into the relation between semantics and cognition – that is, between, on the one hand, what sentences mean and what we mean when we say them and, on the other hand, the corresponding thoughts they express. The idea that the relation between meaning and thought is transparent and direct has figured in many branches of linguistic inquiry, from Whorfian linguistics to Ordinary Language Philosophy. But as Frege (1918: 24) pointed out almost a century ago, indexicals are a major problem for this presumption. He was finally led to say that demonstratives, in particular the pronoun *I*, express thoughts that are incommunicable! Frege found that demonstratives introduced some special problems for the theoretical stance he wanted to adopt (see Perry 1977 for explication), but the general issue is easily appreciated.

The question is: what exactly corresponds in thought to the content of a deictically anchored sentence? For example, what exactly do I remember when I remember the content of an indexical utterance? Suppose I say, sweating it out in Clinton Hall at UCLA,

(1) It's warm here now.

and suppose the corresponding thought is just plain "It's warm here now." When I recollect that thought walking in Murmansk in February, I will then be thinking something false, something that does not correspond to the rival Murmansk thought, namely "It's bone-chilling cold here now." So in some way the sentence meaning with its deictics must be translated into a deicticless UCLA-specific thought. A candidate would be:

(2)   It be warm (over 30 °C) at 3.00 p.m. on July 6, 2001 in room 327 in Clinton Hall on the UCLA campus.

Then when I inspect this thought in Murmansk in February it will look just as true as it did on July 6, 2001 in Clinton Hall. But unfortunately, this doesn't seem to correspond to the psychological reality at all -- that's just not what I thought! I might not even know the name of the building, let alone the room number, and perhaps I have failed to adjust my watch for jet lag and so think it is July 7. So we cannot cash out indexicals into absolute space/time coordinates and retain the subjective content of the thought corresponding to the utterance (1). Well, what if the corresponding thought is just "It is warm here now" but somehow tagged with the time and place at which I thought it? Then walking in Murmansk I would think "In the first week of July somewhere on the UCLA campus I had the thought 'It is warm here now'." That seems subjectively on the right track, but now we are into deep theoretical water, because now the language of thought has indexicals, and in order to interpret THEM we would need all the apparatus we employed to map contexts into propositions that we need in linguistics but now reproduced in the *lingua mentalis*, with a little homunculus doing all the metalinguistic work. Worse, when we ultimately cash out the indexicals of thought into a non-indexical mental metalanguage of thought to get the proposition expressed, we will have lost the subjective content again (or alternatively, we will have an infinite regression of indexical languages). So we haven't reduced the problem at all.

So what does correspond to the thought underlying an indexical sentence? The source of the conundrum seems once again to be the peculiar hybrid symbolic/indexical nature of language – it seems easy enough (in the long run anyway) to model the objective content of symbolic expressions on the one hand and pure indexical signals like vervet monkey calls on the other, but something peculiar happens when you combine the two.

2   The Challenge of Indexicality

Deixis is the study of deictic or indexical expressions in language, like *you*, *now*, *today*. It can be regarded as a special kind of grammatical property instantiated in the familiar categories of person, tense, place, etc. In what follows, I adhere to this conservative division of the deictic field, because there is much to be said about how linguistic expressions build in properties for contextual

resolution. But it is important to realize that the property of indexicality is not exhausted by the study of inherently indexical expressions. For just about any referring expression can be used deictically:

(3)   *He* is my father (said of man entering the room)

(4)   *Someone* is coming (said ear cocked to a slamming door)

(5)   *The funny noise* is our antiquated dishwashing machine (said pointing chin to kitchen)

(6)   What *a great picture*! (said looking at a picture)

For most such cases, some gesture or pointed gaze is required, and we may be tempted to think that a demonstration is the magic ingredient, as in the following cases where the demonstration replaces a linguistic expression:

(7)   The editor's sign for "delete" is [followed by written demonstration]

(8)   He is a bit [index finger to forehead, indicating "mad"]

But this is not a necessary feature:

(9)   *The chairman* hereby resigns (said by the chairman)

(10)   *He* obviously had plenty of money (said walking through the Taj Mahal). (after Nunberg 1993)

So what is the property of indexicality? With inherently deictic expressions like the demonstrative pronoun *this*, what is striking is that the referent is provided not by the semantic conditions imposed by the expression but by the context; for example, the speaker may be holding up a pen. It is the obvious semantic deficiency of *this* that directs the addressee's attention to the speaker's gesture. In a similar way, the semantic generality of *he* without prior discourse context (as in (3) or (10)) forces a contextual resolution in the circumstances of the speech event. In this respect, there is a close relation between exophora and anaphora. In both cases we have contextual resolution of semantically general expressions – in the physical space–time context of the speech event and in the ongoing discourse respectively (Levinson 2000a: 268ff.). Third-person referring expressions which are semantically deficient, in the sense that their descriptive content does not suffice to identify a referent, invite pragmatic resolution, perhaps by default in the discourse, and failing that in the physical context.

But semantic deficiency can't be the only defining characteristic of indexicality. After all, there is a cline of referring expressions like *he, the man, the*

short man, George, the President, the second President to be the son of a President (see Abbott, this volume), and unambiguously identifying descriptions are the exception rather than the rule in natural language. Semantic deficiency or vacuity is resolved through the kind of mutual windowing of attention in which the speaker says *I just saw what's-his-name*, expecting the addressee to be able to guess who (for the mechanism see Schelling 1960 and H. Clark 1996). Although such a narrowing of possibilities relies on mutual attention to mutual knowledge in the context, to call such phenomena "deictic" or "indexical" would be to render the label too broad to be useful. Rather, the critical feature that picks out a coherent field is precisely the one that C. S. Peirce outlined, namely an existential relationship between the sign and the thing indicated – so that when *he* is said in the Taj Mahal, or *this* is said when holding a pen, the sign is connected to the context as smoke is to fire (although non-causally). How? The key is the direction of the addressee's attention to some feature of the spatio-temporal physical context (as in the case of *this*, said holding the pen), or the presumption of the prior existence of that attention (as in the *he*, said in the Taj Mahal). Indexicality is both an **intentional** and **attentional** phenomenon, concentrated around the spatial–temporal center of verbal inter-action, what Bühler (1934) called the deictic *origo*.

This brings us to gesture, one obvious way of securing the addressee's attention. In philosophical approaches to language, ostension or gestural pres-entation has been thought crucial for acquisition (try teaching the word *ball* to a two-year-old with no ball in sight), but as both Wittgenstein and Quine have observed, pointing is hardly as self-explanatory as Mill imagined – when I point at a river and say *This is the Thames*, I could be pointing to one square kilometer of map-grid, or just the left bank, the sun sparkling on the ripples, or even the cubic meter of water just then flowing past my index finger on its way to the sea (Quine 1961: chapter 4, Wettstein 1984). Pointing works like inadequate descriptions, through the exercise of a Schelling coordination problem – I plan to pick out with a gesture just what I think you'll think I plan to pick out, given where we are and what we are doing. The reflexive phrasing here recalls Grice's (1957) theory of meaning, in which when I point and say *I mean that* I intend to invoke in you a referent-isolating thought by virtue of your recognizing that that is my intention.

In this way gesture – and arguably deixis in general – is crucially inten-tional: you cannot say "False!" to my utterance "I am referring to *that*." Deictic gestures do seem to be special; for example, they are made further from the body than other kinds of gesture (McNeill 1992: 91), and we now know some-thing about their universal bases and cross-cultural variation (Kita in press). But the role of gesture is a much more complicated business than suggested by the philosophers, who imagine, for example, that demonstratives always require gestures (see e.g. Lewis's 1972: 175 coordinate for "indicated objects"). Not only can gestures be reduced to directed gaze or a nod (or in some cultures to a pursing of the lips – see Enfield 2002), they may be rendered unnecessary by the circumstances (consider "What was that?" said of a noise, or "This is

wonderful" said of a room). As Fillmore (1997) points out, demonstratives typically have two uses – *this city* resists a gesture (symbolic usage), just as *this finger* requires one (gestural usage), while there are specific expressions (like presentatives or American *yea* in *yea big*) that always require gestures.

To sum up so far: indexicality involves what Peirce's "dynamical coexistence" of an indexical sign with its object of reference. It is normally associated with linguistic expressions that are semantically insufficient to achieve reference without contextual support. That support is provided by the mutual attention of the interlocutors and their ability to reconstruct the speaker's referential intentions given clues in the environment.

This does not, however, suffice to establish clear boundaries to the phenom-ena. One problem is what Bühler (1934) called *Deixis am Phantasma* ("deixis in the imagination"), in which one imagines oneself somewhere else, and shifts the deictic origo by a series of transpositions. Suppose I try to describe to you where I left a book, and I say, "Imagine this room were my office. The book would be right here [pointing to the edge of my desk]." As Fillmore (1975) observes, much deixis is relativized to text, as in reported speech or in the opening line of a Hemingway short story: "The door of Henry's lunchroom opened and two men came in," where, as Fillmore notes, the inside of Henry's lunchroom has become the deictic origo.

Then there is anaphora, which is so closely linked to deixis that it is not always separable, as in *I've been living in San Francisco for five years and I love it here* (where *here* is both anaphoric and deictic), bridged by the intermediate area of textual deixis (as in *Harry said "I didn't do that" but he said it in a funny way*, where *it* does not refer to the proposition expressed but to Harry's utter-ance itself). An additional boundary problem is posed by the fact that the class of indexical expressions is not so clearly demarcated. For example, in *Let's go to a nearby restaurant*, *nearby* is used deictically, but in *Churchill took De Gaulle to a nearby restaurant* it is not – is this deixis relativized to text, or does *nearby* simply presume some point of measurement? Suppose we yield *nearby* up to deixis, then what about *enemy* in *The enemy are coming*? *Enemy* seems to pre-sume an implicit agonistic counterpart, which may be filled deictically but may not (as in *Hannibal prepared for the onslaught of the enemy*; see Mitchell 1986). There is no clear boundary here. Even more difficult, of course, is the point made above: indexicality exceeds the bounds of ready-made indexical expressions, i.e. deictics with in-built contextual parameters, as shown by the indexical use of third person pronouns and referring expressions.

3   Deictic Expressions in Semantic Theory

Let's return to relative terra firma, namely special-purpose deictic expressions – that is, linguistic expressions that require indexical resolution. The special semantic character of such expressions is an abiding puzzle in the philosophy of language. Expressions like *today* have a constant meaning, but systematically

varying reference. In some ways they resemble proper names, since they often have little descriptive content (and hence resist good paraphrase), but in their constantly changing reference they could hardly be more different (Kaplan 1989a: 562). Above all, they resist eliminative paraphrase into non-indexical objective description – *I am Stephen Levinson* cannot be paraphrased as *Stephen Levinson is Stephen Levinson*. *The speaker of this utterance is Stephen Levinson* gets closer, but fails to eliminate the indexical component now shifted to *this* and introduces token-reflexivity.

So how should we think about the meaning of indexicals? What is clear is that any sentence with indexicals (and given person, tense, and spatial deixis, that means nearly every natural language sentence) cannot directly express a proposition, for a proposition is an abstract entity whose truth value is independent of the times, places, and persons in the speech event. If we think of propositions as mappings from worlds to truth values, then whereas we might be able to characterize the meanings of non-indexical expressions in terms of the part they play in such a mapping, there seems no such prospect for indexical expressions.

In philosophical approaches to semantics a consensus has now arisen for handling indexical expressions as a two-stage affair, a mapping from contexts into propositional contents, which are then a mapping from, say, worlds to truth values In Montague's (1970) early theory the content of deictic expressions was captured by mapping contexts (a set of indices for speakers, addressees, indicated objects, times, and places) into intensions. In Kaplan's (1989a) theory, all expressions have this characteristic mapping (their CHARACTER) from contexts into intensions (their proposition-relevant content). The meaning of *I* is its character, a function or rule that variably assigns an individual concept, namely the speaker, in each context (Kaplan 1978; cf. Carlson, this volume). Non-indexical expressions have constant character, but may (rigid designators) or may not (other referring expressions) have constant content.

Another influential version of the two-stage theory can be found in Situation Semantics (Barwise and Perry 1983). There, utterances are interpreted with respect to three situations (or states of affairs): the UTTERANCE SITUATION (corresponding to Montague's indices), the RESOURCE SITUATION (which handles other contextually determined reference like anaphora), and the DESCRIBED SITUATION (corresponding to the propositional content). Indexicals and other contextually parameterized expressions get their variables fixed in the utterance and/or resource situations, which are then effectively discarded – it is just the value of the variables, e.g. the referent of *I* or *that*, that is transferred to the described situation (e.g. *I gave him that* has the described content of "Stephen Levinson gave him that book"). Meaning is relational, the meaning of an indexical characterized as the relation between utterance/resource situations and described situations. This large improvement over the Montague theory no longer requires a complete pre-specification of relevant aspects of the context as in Montague's indices – other ad hoc factors can be picked up in the resource situation.

The central property of two-stage theories is that indexicals do not contribute directly to the proposition expressed, the content of what is said, or the situation described. Instead, they take us to an individual, a referent, which is then slotted into the proposition expressed or the situation described, or, as Nunberg (1993: 159) puts it: "The meanings of indexicals are composite functions that take us from an element of the context to an element of a contextually restricted domain, and then drop away."

This kind of treatment of indexicality <u>falls far</u> short of descriptive adequacy. First, the indexicals which have been the target of most philosophical approaches (sometimes called "pure indexicals" – expressions like *I*, *now*, or *here*), seem to have their semantico-pragmatic content exhausted by a specification of the relevant index (speaker, time, and place of speaking respectively; see Wettstein 1984). But closely related indexicals like *we*, *today*, *nearby* may also express additional semantic conditions (at least one person in addition to the speaker, the diurnal span which contains the coding time, a place distinct from here but close to here, respectively). So deictics may contain both descriptive properties and contextual variables in the one expression. Perhaps a more difficult problem for the view that deictics just deliver referents to the proposition expressed is the fact that they can in fact express quantified variables. For example, in *Every time a visiting soprano comes, we sing duets* the pronoun *we* denotes a set consisting of the speaker and a variable (Nunberg 1993). In addition, nearly all deictics are heavily dependent on pragmatic resolution – *Come here* may mean come to this sofa or come to this city according to context (see Levinson 2000a: 177ff.).

Secondly, the idea that the relevant contextual features can be fixed in advance (as is required by the Montague-style solution) is problematic. Suppose I say, "This is the largest walnut tree on the planet": I could be pointing to a tree some distance away, or we could just be standing underneath it, or I could be touching a picture in a book, or if you were blind I could be running your hand over the bark, or I could be telling you what we are about to see as we walk over the hill. The mode of demonstration just does not seem to be determined in advance (see Cresswell 1973: 111ff.). Thirdly, there are many aspects of the meaning of demonstratives that exceed any such specification by predetermined index. When Sheila says, "We have better sex lives than men," *we* doesn't just mean "speaker plus some other"; it denotes the set of women, including the speaker. Such usages exploit indexicality in the Peircean sense, that is, the direct connections between the situation of speaking (here, the fact that the speaker is female) and the content of what is communicated. Fourth, there is the problem that Quine called "deferred ostension," now familiar through the work of Nunberg (1977, 1993, this volume). Suppose we are listening to a program on a radio station and I say "CNN has just bought this" – I don't refer to the current jingle but the radio station. Or I point at a Coca-Cola bottle and say "That used to be a different shape" – what I refer to is not the current bottle, but the type of container of the holy liquid, and I assert that tokens used to be of a different shape. In these cases, the indicated thing is not

the thing referred to, and the Montagovian or Creswellian mechanism will get us the wrong proposition. Fifth, these treatments of indexicality presuppose that there is a clear class of indexical expressions with a built-in variable whose value is instantiated in the context. But third-person, non-deictic expressions can have indexical uses, as when I say, pointing to a man in a purple turban, "He is Colonel Gaddafi's nephew."

There are then a formidable set of obstacles to the treatment of indexicals as simply a rule-governed mapping from contextual indices to intensions, or utterance-situations into individuals which can then play a role in described situations. The problems in essence are that the context offers Gibsonian AFFORDANCES, properties of the context which may be creatively exploited for communicative purposes.[1] Deictics have ATTENTIONAL, INTENTIONAL, and SUBJECTIVE features that resist this cashing out of their content in objective descriptions. The attentional and intentional features were mentioned in the previous section, but the subjective features are worth a special mention. Perry (1977), developing a character of Frege's, invites us to imagine an amnesiac, Rudolf Lingens, lost in the Stanford library, who discovers a complete biography of himself. So he knows everything there is to know about Rudolf Lingens, even that he is an amnesiac lost in the Stanford library, but he does not know that he himself is Rudolf Lingens. In this case, it is clear that when he says, "I am hungry," the corresponding Fregean thought is not "Rudolf Lingens is hungry." Were he to come to his senses and utter "Why, I am Rudolf Lingens!," the force of the realization would certainly not be captured by the proposition "Rudolf Lingens is Rudolf Lingens," or even "The speaker of this utterance is Rudolf Lingens" – for what he would have realized is not the identity of the subject of the sentence, but the identity of his subjective self.[2] Linguists have also noted a subjective quality to deixis, for example an overlap between the subjective aspects of modality and the objective aspects of tense – thus the French *Le premier ministre serait malade* codes both present tense and a lack of subjective certainty, as do grammaticalized evidentials in other languages (Lyons 1982: 111).

A final aspect of the semantic character of indexical expressions that should be mentioned is their special PROJECTION PROPERTIES, which follow from the fact that demonstratives and many other deictics have no substantial descriptive content, so that once the contextual parameters have been fixed they are "directly referential" (Kaplan 1989a). A true demonstrative remains transparent in an intensional context – in "Ralph said he broke that" *that* can only be the thing the speaker is now pointing at, not the thing Ralph pointed at – the speaker cannot withhold a gesture on the grounds that Ralph made it. Further, deictics do not generally fall under the scope of negation or modal operators: *That is not a planet* cannot be understood as "I am not indicating x and x is a planet" (Enç 1981). Deictics resist attributive or "semantic" readings; thus whereas *The man who can lift this sword is our king* has both a referential and attributive reading ("whoever can . . ."), *That man who can lift this sword is our king* has only a referential reading. In addition to the paradoxes of self-

reference, there are sentences with indexicals which have the curious property of being at the same time contingently true or false, yet upon being uttered are automatically true or self-verifying, as in *I am here now* or *I am now pointing at that* (said pointing at something).

4 The Role of Pragmatics in the Resolution of Deictic Expressions: a Close Look at Demonstrative Systems

We have seen that indexicality exceeds the bounds of the built-in indexical expressions in any language. Moreover, the field of indexical expressions is not clearly delimited, because insofar as most referring expressions do not fully individuate solely by virtue of their semantic content but rather depend for success on states of mutual knowledge holding between discourse participants, the great majority of successful acts of reference depend on indexical conditions. Still, we may hope to make a distinction between expressions used indexically, and those – let us call them deictic – that necessarily invoke features of the context because of a contextual variable built into their semantic conditions. This distinction will also be plagued by borderline examples, as exemplified above by expressions like *nearby* or even *enemy*. Even if we decide that *local* as in *the local pub* is an expression with an unfilled variable that is preferentially filled by spatial parameters of the context of speaking, we would be loath to think that all quality adjectives are deictic just because they have a suppressed comparator as argument (as in *John is tall*, implying taller than the average reference population, as supplied by the context). Fuzzy borders to a phenomenon do not make categories useless (otherwise color terms would not exist), so in what follows we will proceed by focusing on deictic expressions which clearly involve inherent contextual variables.

The pragmatic character of indexicality is not the only central issue for a pragmatic theory of deictic expressions, for the organization of the semantic field of contrastive deictic expressions is often itself determined by pragmatic factors. As an illustration of this, we concentrate here on the cross-linguistic comparison of demonstrative systems, which have played a central role in philosophical and linguistic thinking about deixis. The analysis of demonstratives is much complicated by their multi-functional role in language – they are often used not only to point things out, but to track referents in discourse and more generally to contrast with other referring expressions. It has become traditional to distinguish amongst at least some of the uses (Levinson 1983, Diessel 1999) shown in figure 5.1.

The relations between these uses are probably more complex than this taxonomy suggests, but it is clearly not sufficient to distinguish simply between exophoric (deictic) and endophoric (non-deictic) at the highest branch as in Levinson (1983: 68) and Diessel (1999: 6), since discourse deixis is intra-text
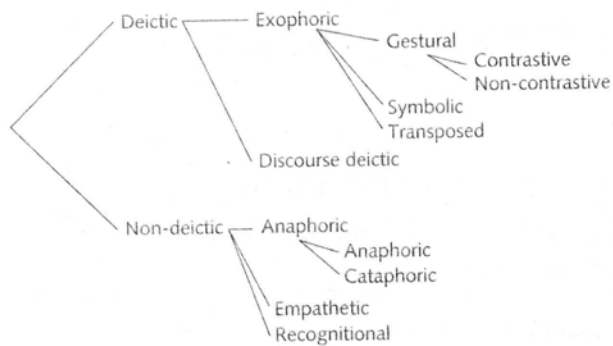
Figure 5.1   Distinct uses of demonstratives

but deictic, and empathetic and recognitional uses are extra-text but non-deictic. The following examples illustrate the distinctions involved:

(11)   "Give me **that** book" (exophoric: book available in the physical context)

(12)   "I hurt **this** finger" (exophoric gestural: requires gesture or presentation of finger)

(13)   "I like **this** city" (exophoric symbolic: does not require gesture)

(14)   "I broke **this** tooth first and then **that** one next" (gestural contrastive)

(15)   "He looked down and saw the gun: **this** was the murder weapon, he realized" (transposed)

(16)   "'You are wrong'. **That's** exactly what she said" (discourse deictic)

(17)   "It sounded like **this**: whoosh" (discourse deictic)

(18)   "The cowboy entered. **This** man was not someone to mess with" (anaphoric)

(19)   "He went and hit **that** bastard" (empathetic)

(20)   "Do you remember **that** holiday we spent in the rain in Devon?" (recognitional)

Exophoric, gestural, non-transposed uses of demonstratives have usually been considered basic. Diessel (1999) points out that exophoric gestural uses are the earliest in acquisition, the least marked in form, and the source of

grammaticalization chains that run through the other uses. In what follows we shall concentrate on the exophoric gestural uses. Less well supported is the supposition that the basic semantic contrasts between sets of exophoric demonstratives are spatial in nature, encoding degrees of distance from speaker or addressee (cf. Anderson and Keenan 1985). There is no a priori reason why this should be the case, yet grammars of languages almost invariably describe demonstrative systems in this spatial way. There are two major kinds of paradigm: speaker-anchored distance systems, and speaker/addressee-anchored systems, as illustrated by Spanish and Quileute (Anderson and Keenan 1985):

(21)   **Spanish**   *Distance from speaker*

−	(proximal)	*este*
+	(medial)	*ese*
++	(distal)	***acquel***

(22)   **Quileute**   *Close to speaker*   *Close to addressee*

+	−	*xo'?o*
−	+	*so'?o*
+	+	*sa'?a*
−	−	*á:ča'?a*

Although a few languages may have only one demonstrative pronoun or adjective, this is supplemented in probably most (Diessel (1999: 36) claims all) cases by a proximal/distal contrast in deictic adverbs ("here" vs. "there"). Three-term systems may be speaker-anchored (like two-term systems), speaker/addressee-anchored, or both. Systems with more than four terms combine other semantic dimensions, like visibility or vertical distance relative to the speaker, or shape of the referent.

   A speaker-anchored distance system with three terms is often organized in terms of a binary opposition between proximal and distal, with the distal category permitting finer discrimination (McGregor argues for such an analysis for Warrwa, where the medial is the most marked form; see van Geenhoven and Warner 1999: 60). Some systems combine both speaker- and addressee-anchored systems, as with the Yélî Dnye demonstrative determiners:[3]

(23) | | Speaker-based | Addressee-based |
|---|---|---|
| Proximal | **ala** | **ye** |
| Medial | **kî** | − |
| Distal | **mu** (far from Speaker, can apply to objects close to Addressee) | |

Kî is the unmarked term here – it can refer freely, but if the speaker or addressee is actually holding something, the speaker- or addressee-centered term pre-empts it. Thus the medial interpretation is due entirely to pragmatic pre-emption from the more semantically specified forms. In this semantic generality, the Yélî Dnye medial contrasts with the marked Warrwa medial.

Yélî Dnye shows that there are actually at least three kinds of multi-term systems, not just the two posited in the literature – speaker-centered distance systems (with no addressee-centered forms) vs. person-based systems (with no medial-from-speaker forms, and where distal is interpreted as distal from both S[peaker] and A[ddressee]).

So far we have taken demonstratives to code spatial discriminations. But this may not always be so (cf. Hanks 1996, Himmelmann 1997). Two systems that have traditionally been treated as addressee-anchored distance systems have on close analysis proved to be less spatial than thought. Here is a typical analysis of Turkish and Japanese demonstratives:

(24)	Turkish	Japanese
"Near Speaker"	*bu*	*ko*
"Near Addressee"	*şu*	*so*
"Near neither Speaker nor Addressee"	*o*	*a*

Close analysis of video-taped task-oriented communication shows that these glosses do not reflect real usage conditions (Özyürek and Kita 2002). For Turkish the correct analysis seems to be that *şu* presumes lack of joint attention and is used to draw the attention of the addressee to a referent in the context, while *bu* and *o* presume that the referents are already in the addressee's attentional focus, in which case *bu* is used for objects closer to the speaker and *o* for those distant from the speaker. A similar story can be told for Japanese: *so* has two functions – one simply to indicate that the referent is close to addressee, the other (as with Turkish *şu*) to draw the addressee's attention to a new referent. This latter usage is pre-empted by *ko* when the referent is very close to speaker, and by *a* when far from both speaker and addressee. A primary oppositions here involves not proximity to speaker vs. addressee, but rather shared vs. non-shared attentional focus.

This finding fits with the pre-theoretical ruminations above: indexicality crucially involves some link between utterance and context so that the context can be used as an affordance to find the intended reference. As noted, deictic expressions and gestures both do this by drawing the addressee's attention to some feature of the spatio-temporal environment (or of adjacent utterance). Also highlighted is the crucial role gesture plays in deixis, for gesture serves to direct the addressee's attention. The prototypical occurrence of demonstratives with gestures seems crucial to how children learn demonstratives, which are always amongst the first fifty words learned and often the first closed-class set acquired; the acquisition of the pointing gesture precedes that of the words (Clark 1978, Tanz 1980).

Finally, it is often suggested that definite articles are simply demonstratives unmarked for distance (Lyons 1977: 653–4, Anderson and Keenan 1985: 280), but this does not fit the fact, noted above, that many demonstrative systems themselves have unmarked members (like *that* in English), nor the fact that a number of languages (like German) have only one demonstrative that contrasts

with a definite article. There certainly is close kinship between definite determiners and demonstratives, as shown by the frequent grammaticalization of the former from the latter. Both contrast with indefinites (see Diessel 1999), and both share a presumption of uniqueness within a contextually given set of entities (Hawkins 1991; Abbott, this volume). It is the focusing of attention on the physical context that is the special character of demonstratives in their basic use.

5 The Fields of Deixis

I turn now to a brief survey of deictic expressions in language. Linguists normally treat deixis as falling into a number of distinct semantic fields: person, place, time, etc. Since Bühler (1934), the deictic field has been organized around an **origo** or "ground zero" consisting of the speaker at the time and place of speaking. Actually, many systems utilize two distinct centers – speaker and addressee. Further, as Bühler noted, many deictic expressions can be transposed or relativized to some other origo, most often the person of the protagonist at the relevant time and place in a narrative (see Fillmore 1997).

We can make a number of distinctions between different ways in which deictic expressions may be used. First, many deictic expressions may be used non-deictically – anaphorically, as in *We went to Verdi's Requiem last weekend and really enjoyed that*, or non-anaphorically, as in *Last weekend we just did this and that*. Second, when used deictically, we need to distinguish between those used at the normal origo and those transposed to some other origo. It might be thought that the latter are not strictly speaking deictic (since they have been displaced from the time and place of speaking), but consider *He came right up to her and hit her like this here on the arm*, in which the speaker pantomimes the protagonists, so licensing the use of *come*, *this*, and *here*. Third, as noted, deictic expressions may be used gesturally or non-gesturally (*this arm* versus *this room*), while some like tense inflections may not occur with gestures at all. "Gesture" here must be understood in the widest sense, since pointing in some cultures (like the Cunha) is primarily with lips and eyes and not hands and since even vocal intonation can function in a "gestural" way (*Now hold your fire; wait; shoot NOW*, or *I'm over HERE*). Similarly, many languages have presentatives (like French *voila!*) requiring the presentation of something simultaneous with the expression, or greetings requiring the presentation of the right hand, or terms like *thus* requiring a demonstration of a mode of action.

The deictic categories of person, place, and time are widely instantiated in grammatical distinctions made by languages around the world (see Fillmore 1975; Weissenborn and Klein 1982; Anderson and Keenan 1985; Levinson 1983, chapter 2; Diessel 1999). Bühler's origo, the speaker and the place and time of her utterance, along with the role of recipient or addressee, recurs at the core of deictic distinctions in grammar after grammar. These are the crucial reference points upon which complex deictic concepts are constructed, whether honorifics,

complex tenses, or systems of discourse deixis. They constitute strong universals of language at a conceptual level, although their manifestation is anything but uniform: not all languages have pronouns, tense, contrasting demonstratives, or any other type of deictic expression that one might enumerate.

Unfortunately, cross-linguistic data on deictic categories are not ideal. One problem is that the **meaning** of deictic expressions is usually treated as self-evident in grammatical descriptions and rarely properly investigated, and a second problem is that major typological surveys are scarce (but see Diessel 1999, Cysouw 2001). But despite the universality of deictic categories like person, place, and time, their expression in grammatical categories is anything but universal. For example, despite claims to the contrary, not all languages have first and second person pronouns (cf. "The first and second person pronouns are universal": Hockett 1961: 21), not all languages have spatially contrastive demonstrative pronouns or determiners (contra Diessel 1999, who suggests universality for such a contrast in demonstrative adverbs), not all languages have tense, not all languages have verbs of coming and going, bringing and taking, etc. Rather, deictic categories have a universality independent of their grammatical expression – they will all be reflected somewhere in grammar or lexis.

5.1   Person deixis

The grammatical category of person directly reflects the different roles that individuals play in the speech event: speaker, addressee, and other. When these roles shift in the course of conversational turn-taking the origo shifts with them (hence Jespersen's 1922 term SHIFTERS for deictic expressions): A's *I* becomes B's *you*, A's *here* becomes B's *there* and so forth.

The traditional person paradigm can be captured by the two semantic features of speaker inclusion (S) and addressee inclusion (A): first person (+S), second person (+A, –S), and third person (–S, –A), hence a residual, non-deictic category. Most languages directly encode the +S and +A roles in pronouns and/or verb agreement, and the majority explicitly mark third person (–S, –A). But there are clear exceptions to the alleged universality of first and second person marking; in Southeast Asian languages like Thai there are titles (on the pattern of "servant" for first person, "master" for second person) used in place of pronouns and there is no verb agreement (Cooke 1968). Many languages have no third person pronouns, often indirectly marking third person by zero agreement. Thus Yélî Dnye has the following pronoun paradigm (with different paradigms in possessive and oblique cases):

(25)   Yélî Dnye nominative pronouns

	Singular	Dual	Plural
1	*nê*	*nyo*	*nmo*
2	*nyi*	*dp:o*	*nmyo*
3	φ	φ	φ

The paradigmatic analysis of person marking, whether in pronouns or agreement, is a more complex area than one might at first suppose. Although the traditional notions first, second and third persons hold up remarkably well, there are many kinds of homophony, or different patterns of syncretism, across person paradigms (Cysouw 2001). Much of this complexity is due to the distinctive notions of plurality appropriate to this special paradigm: first person plural clearly does not entail more than one person in +S role, amounting to a chorus. "We" notions are especially troubling, since many languages distinguish such groups as: +S+A vs. +S+A+O (where O is Other, i.e. one or more third persons), vs. +S–A, vs. +S–A+O. In some pronominal systems "plural" can be neatly analyzed as augmenting a minimal deictic specification with "plus one or more additional individuals" (AUG). Thus the distinction between *I* and *we* might be analyzed as (+S, –AUG), (+S, +AUG). Additional motivation for such an analysis is the fact that a number of languages treat "I + you" – i.e. speech-act participants – as a singular pronominal package, which is then augmented to form a "I + you + other" pronoun. The following is the paradigm from Rembarrnga (Dixon 1980: 352):

(26)   **Rembarrnga dative pronouns (after Dixon 1980)**

	Minimal	Unit augmented	Augmented
+S	ŋənə	yarrpparaʔ	yarrə
+S+A	yəkkə	ŋakorrparaʔ	ŋakorrə
+A	kə	nakorrparaʔ	nakorrə
–S–A masc	nawə	parrpparaʔ	parrə
–S–A fem	ŋatə		

Tamil, Fijian, and other languages distinguish INCLUSIVE from EXCLUSIVE *we*, i.e. (+S, +A) from (+S, –A, +AUG). A few languages (like Pirahã) do not mark plurality in the person paradigms at all (Cysouw 2001: 78–9).

One much studied phenomenon in person deixis is in the effect of reported speech on speakers' self-reference – where we say *John said he would come* many languages permit only in effect "John said 'I will come'." In Yélî Dnye thoughts and desires must also retain the correct subjective person: *John wants to come* must be rendered "John wants 'I come'." Then there is the phenomenon of honorifics, which typically make reference to speaking and recipient roles, dealt with separately below under the rubric of social deixis (section 5.5). Yet another important area is the special role that speaker and addressee roles play in typologically significant grammatical hierarchies; many languages have no dedicated reflexives in first and second person, and many treat first and second person as the topmost categories on an animacy hierarchy, governing case-marking, passivization, and other syntactic processes (see Comrie 1989).

In addition, although in the Bühlerian and the philosophical traditions the speaking role is given centrality, the importance of the addressee role is reflected in a number of special grammatical phenomena, e.g. vocative case and special forms for titles, kin-terms and proper names used in address.

Apart from its grammatical importance, person has a special significance because of its omnipresence – it is a grammatical category marked or implicit in every utterance, which inevitably indicates first, second or third person in nominal or verbal paradigms, either explicitly or by contrastive omission.

5.2 Time deixis

In Bühler's origo, the temporal "ground zero" is the moment at which the utterance is issued ("coding time" of Fillmore 1997). Hence *now* means some span of time including the moment of utterance, *today* means that diurnal span in which the speaking event takes place, and *is* predicates a property that holds at the time of speaking. Similarly we count backwards from coding time in calendrical units in such expressions as *yesterday* or *three years ago*, or forwards in *tomorrow* or *next Thursday*. In written or recorded uses of language, we can distinguish coding time from receiving time, and in particular languages there are often conventions about whether one writes "I am writing this today so you will receive it tomorrow" or something more like "I have written this yesterday so that you receive it today."

The nature of calendrical units varies across cultures. Yélî Dnye recognizes the day as a diurnal unit, has words for "yesterday" and "the day before," and special monomorphemic words for tomorrow, the day after tomorrow and so forth for ten days into the future, and thereafter a generative system for specifying days beyond that. It needs such a system because there is no concept of week, or any larger clockwork system of calendrical units that can be tied to coding time as in English *next March*. But most languages exhibit a complex interaction between systems of time measurement, e.g. calendrical units, and deictic anchorage through demonstratives or special modifiers like *next* or *ago*. In English, units of time measurement may either be fixed by reference to the calendar or not: thus *I'll do it this week* is ambiguous between guaranteeing achievement within seven days from utterance time, or within the calendar unit beginning on Sunday (or Monday) including utterance time. *This year* means the calendar year including the time of utterance (or in some circumstances the 365-day unit beginning at the time of utterance) but *this November* tends to mean the next monthly unit so named (or alternatively, the November of this year, even if past), while *this morning* refers to the first half of the diurnal unit including coding time, even if that is in the afternoon (see Fillmore 1975).

However, the most pervasive aspect of temporal deixis is tense. The grammatical categories called tenses usually encode a mixture of deictic time distinctions and aspectual distinctions, which are often hard to distinguish. Analysts tend to set up a series of pure temporal distinctions that correspond

roughly to the temporal aspects of natural language tenses, and then catalogue the discrepancies (cf. Comrie 1985: 18ff.). For example, one might gloss the English present tense as specifying that the state or event holds or is occurring during a temporal span including the coding time, the past tense as specifying that the relevant span held before coding time, the future as specifying that the relevant span succeeds coding time, the pluperfect (as in *He had gone*) as specifying that the event happened at a time before an event described in the past tense, and so on. Obviously, such a system fails to capture much English usage (*The soccer match is tomorrow* (see Green, this volume), *John will be sleeping now*, *I wanted to ask you if you could possibly lend me your car*, etc.), but it is clear that there is a deictic temporal element in most tenses. Tenses are traditionally categorized as ABSOLUTE (deictic) versus RELATIVE (anterior or posterior to a textually specified time), so that the simple English past (*He went*) is absolute and the pluperfect (*He had gone*) is relative (anterior to some other, deictically specified point).

Absolute tenses may mark just, for example, past vs. non-past, or up to nine distinct spans of time counted out from coding time (Comrie 1985, chapter 4). Yélî Dnye has six such tenses, which – as in other Papuan and some Bantu languages – are interpreted precisely in terms of diurnal units. So counting back from the present, there is (in the continuous aspect) a tense specific to events that happened earlier today, another tense for yesterday, and yet another for any time before yesterday. In the other direction, there is a tense for later today, and a separate tense for tomorrow or later. Interestingly, the tense particles for tomorrow incorporate those for yesterday (and the word for "the day before yesterday" incorporates the word for "the day after tomorrow"), indicating a partial symmetry around coding time. Yélî Dnye, like a number of Amerindian languages (see Mithun 1999: 153–4), also has tensed imperatives, distinguishing "Do it now" from "Do it sometime later."

The interpretation of tenses often involves implicatures, so that e.g. *Believe it or not, Steve used to teach syntax* implicates that he no longer does so, but this is clearly defeasible as one can add *and in fact he still has to do so* (see Levinson 2000a: 95 for a relevant analytic framework and Comrie 1985 for the role of implicature in the grammaticalization of tense). Many languages in fact have no absolute deictic tenses (e.g. Classical Arabic; see Comrie 1985: 63), although they may pick up deictic interpretations by implicature. Yet other languages, e.g. Malay or Chinese, have no tenses at all. A specially interesting case in point is Yucatec, which not only lacks tenses but also lacks relative time adverbials of the "before" and "after" kind (cf. Bohnemeyer 1998). How on earth do speakers indicate absolute and relative time? By implicature of course. Bohnemeyer sketches how this can be done: for example, by the use of phasal verbs, so that *Pedro stopped beating his donkey and began walking home* implicates that he first stopped donkey-beating and then after that proceeded homewards.

However, for languages that have tense, this grammatical category is normally obligatory, and ensures that nearly all sentences (with the exception

of tenseless sentences like *Two times two is four*) are deictically anchored with interpretations relativized to context. Although we tend to think of tenses as a grammatical category instantiated in predicates, some languages like Yup'ik tense their nouns as well, so one can say in effect "my FUTURE-sled" pointing at a piece of wood (Mithun 1999: 154–6). Note that even in English many nominals are interpreted through Gricean mechanisms as tensed; "John's piano teacher was a karate black-belt in his youth" suggests that the person referred to is currently John's piano teacher (Enç 1981). All of these factors conspire to hook utterances firmly to coding time.

It is clear that many deictic expressions in the temporal domain are borrowed from the spatial domain. In English, temporal prepositions and connectives like *in* (*the afternoon*), *on* (*Monday*), *at* (*5.00 p.m.*), *before* and *after* are all derived from spatial descriptions. The demonstratives in English follow the same pattern (cf. *this week*) and in many languages (like Wik Mungan, as described in Anderson and Keenan 1985: 298) "here" and "there" are the sources for "now" and "then." Many languages work with a "moving time" metaphor, so that we talk about *the coming week* and *the past year* – which is natural since motion involves both space and time. In general, the ways in which the spatial domain is mapped onto the temporal domain are quite intriguing, for as Comrie (1985: 15) notes, the temporal domain has discontinuities that the spatial one lacks (as in the discontinuity between past and future, unlike the continuity of places other than "here"), while space has discontinuities (like near speaker vs. near addressee) which the temporal one lacks (at least in the spoken medium, when "now" is effectively both coding and receiving time).

5.3   Spatial deixis

We have already examined two of the central kinds of place-deictic expressions, namely demonstrative pronouns and adjectives. But as we noted, there are one-term demonstrative (ad/pro)nominal systems unmarked for distance (German *dies* or *das* being a case in point, see Himmelmann 1997). Thus *here* and *there* may be the most direct and most universal examples of spatial deixis (Diessel 1999: 38). As a first approximation, English *here* denotes a region including the speaker, *there* a distal region more remote from the speaker. Languages with a speaker-anchored distance series of demonstrative pronouns will also have a speaker-centered series of demonstrative adverbs. It is clear that there is no necessary connection between the number of pronominal or adnominal demonstratives and demonstrative adverbs – German for example has one demonstrative pronoun (or rather no spatial distinction between *dies* and *das*) but two contrastive demonstrative adverbs. Malagasy has seven demonstrative adverbs, but only six demonstrative pronouns, apparently encoding increasing distance from speaker (Anderson and Keenan 1985: 292–4, although many commentators have suspected other features besides sheer distance). Speaker-centered degrees of distance are usually (more) fully represented in

the adverbs than the pronominals, and it may be that no language has a person-based system in the demonstrative adverbs if it lacks one in the pronominal or adnominal demonstratives.

Very large paradigms of demonstratives usually involve many ancillary features, not all of them deictic. Yup'ik has three sets of demonstratives (31 in all) conventionally labeled "extended" (for large horizontal objects or areas or moving referents), "restricted" (for small, visible, or stationary objects), and "obscured" (for objects not in sight); cf. Anderson and Keenan (1985: 295), after Reed et al. (1977). Here the restricted condition is an additional non-deictic condition, but the other two sets involve a visibility feature that is deictic in nature (visible by the speaker from the place of speaking). Visibility is a feature reported for many North American Indian languages, and not only in demonstratives – in Kwakwa'la every noun phrase is marked for this deictic feature by a pair of flanking clitics (Anderson and Keenan 1985, citing Boas). But caution is in order with a gloss like "visibility"; Henderson (1995: 46) glosses the Yélî Dnye demonstratives *kî* and *wu* as "visible" and "invisible" respectively, but *wu* is more accurately "indirectly ascertained, not directly perceivable or not clearly identifiable to addressee," while *kî* is the unmarked deictic, pragmatically opposed to *wu* in one dimension and to the proximal/distal deictics in another.

Apart from visibility, deictics often contain information in an absolute frame of reference, that is, an allocentric frame of reference hooked to geographical features or abstract cardinal directions. Thus the large Yup'ik series of demonstratives has "upstream"/"downstream"/"across river" oppositions, West Greenlandic has "north"/"south" (Fortescue 1984), and languages used by peoples in mountainous areas of Australia, New Guinea, or the Himalayas often contain "uphill"/"downhill" oppositions (see Diessel 1999: 44–5 for references). Such languages are likely to use absolute coordinates unhooked from the deictic center (as in "north of the tree" (see Levinson 1996 for exposition)). In a cross-linguistic survey of demonstratives in 85 languages, Diessel (1999) attests, in addition to these deictic factors, such non-deictic properties of the referent as animacy, humanness, gender, number, and the boundedness of Eskimo languages mentioned above.

In many kinds of deictic expressions the deictic conditions are indeed backgrounded, and other semantic properties foregrounded. Thus if I say "He didn't come home," you are unlikely (absent contrastive emphasis on *come*) to read what I said as "He went home, but not toward the deictic center." Verbs of "coming" and "going" are not universal. In the first place, many languages do not have verbs encoding motion to or from the deictic center – they make do instead with "hither"/"thither" particles. Secondly, explicit verbs of "coming" and "going" vary in what they encode (Wilkins and Hill 1995, Wilkins et al. 1995). If someone comes toward me but stops short before he arrives at the tree over there, I can say "He came to the tree" in English, but not in Longgu or Italian, where we must say "He went to the tree." In fact we can distinguish at least four distinct kinds of "come" verbs, according to whether they are

marked for telicity or require the goal to be the place of speaking, as exemplified below (Wilkins et al. 1995):

(27)   **Varieties of COME verbs**

	+telic	−telic (i.e. unmarked)
Goal is place of speaking	Longgu	Italian
Goal need not be place of speaking	Ewe	Tamil

Thus, it turns out there is no universal lexicalized notion of "come," although alignment with the place of speaking is a candidate for a universal feature. The notions underlying "go" may be somewhat more uniform because on close examination they generally do *not* encode anything about alignment of vectors with the deictic center (contra to, for example, Miller and Johnson-Laird 1976). Rather, "come" and "go" verbs tend to be in privative opposition, with "come" marked as having such an alignment, and "go" unmarked. Scalar implicature can then do the rest: saying "go" where "come" might have been used but wasn't implicates that the speaker is not in a position to use the stronger, more informative "come" because its conditions have not been met, and thus that the motion in question is not toward the deictic center.[4] Variants in "go" semantics should then be the mirror image of variants in "come" semantics, illustrating the point stressed in Levinson (2000a) that many Saussurean oppositions may be as much in the pragmatics as in the semantics.

Not all languages lexicalize the "toward the deictic center" feature in their verbs. Consider Yélî Dnye, which has a "hither" feature that can be encoded in variant forms of the verbal inflectional particles. Now there are irregular verbs that obligatorily take this feature, including a motion verb *pwiyé*. So it is tempting to gloss *pwiyé* "come," but in fact it is perfectly usable to encode motion away from the deictic center (one can say "He *pwiyé*-d off in that direction"), because it is just an irregular verb with meaning somewhat unrelated to its obligatory inflectional properties. So to say "Come here!" one can either use *pwiyé* or the unmarked "go" verb *lê*, but now marked with the "hither" particle. Note that Yélî Dnye has no "thither" particle – because by privative opposition it is not necessary: any motion verb unmarked for "hither" will be presumed to have a "thither" (or at least not-"hither") interpretation. Once again implicature provides the opposition.

5.4   Discourse deixis

In both spoken and written discourse, there is frequently occasion to refer to earlier or forthcoming segments of the discourse: *As mentioned before*, *In the next chapter*, or *I bet you haven't heard this joke*. Since a discourse unfolds in time, it is natural to use temporal deictic terms (*before*, *next*) to indicate the relation of the referred-to segment to the temporal locus of the moment of speaking or

the currently read sentence. But spatial terms are also sometimes employed, as with *in this article* or *two paragraphs below*. Clearly, references to parts of a discourse that can only be interpreted by knowing where the current coding point or current reading/recording point is are quintessentially deictic in character.

A distinction is often made between textual deixis and general anaphora along the following lines. Whereas textual deixis refers to portions of the text itself (as in *See the discussion above* or *The pewit sounds like this: pee-r-weet*), anaphoric expressions refer outside the discourse to other entities by connecting to a prior referring expression (anaphora) or a later one (cataphora, as in *In front of him, Pilate saw a beaten man*). Insofar as the distinction between anaphoric and cataphoric expressions is conventionalized, such expressions have a clear conventional deictic component, since reference is relative to the point in the discourse. Thus Yélî Dnye has an anaphoric pronoun *yi*, which cannot be used exophorically and contrasts with the demonstratives that can be used cataphorically, looking backwards in the text from the point of reading like the English legalese *aforementioned*.[5] These expressions, with their directional specification from the current point in the text, demonstrate the underlyingly deictic nature of anaphora.

Many expressions used anaphorically, like third person pronouns in English, are general-purpose referring expressions – there is nothing intrinsically anaphoric about them, and they can be used deictically as noted above, or non-deictically but exophorically, when the situation or discourse context makes it clear (as in *He's died*, said of a colleague known to be in critical condition). The determination that a referring expression is anaphoric is itself a matter of pragmatic resolution, since it has to do with relative semantic generality. For this reason, *the ship* can be understood anaphorically in *The giant Shell tanker hit a rock, and the ship went down*, while resisting such an interpretation in *The ship hit a rock, and the giant Shell tanker went down* (see Levinson 2000a for a detailed Gricean analysis, and Huang 2000a, this volume for surveys of pragmatic approaches to anaphora).

An important area of discourse deixis concerns discourse markers, like *anyway*, *but*, *however*, or *in conclusion* (see Schiffrin 1987; Blakemore, this volume). These relate a current contribution to the prior utterance or text, and typically resist truth-conditional characterization. For this reason, Grice introduced the notion of conventional implicature, noting that *but* has the truth-conditional content of *and*, with an additional contrastive meaning which is non-truth conditional but conventional.

5.5   Social deixis

Social deixis involves the marking of social relationships in linguistic expressions, with direct or oblique reference to the social status or role of participants in the speech event. Special expressions exist in many languages, including the honorifics well known in the languages of Southeast Asia, such

as Thai, Japanese, Korean, and Javanese. We can distinguish a number of axes on which such relations are defined (Levinson 1983, Brown and Levinson 1987):

(28)   **Parameters of social deixis**

Axis	Honorific types	Other encodings
(1) Speaker to referent	Referent honorifics	Titles
(2) Speaker to addressee	Addressee honorifics	Address forms
(3) Speaker to non-addressed participant	Bystander honorifics	Taboo vocabularies
(4) Speaker to setting	Formality levels	Register

The distinction between (1) and (2) is fundamental in that in (1) "honor" (or a related attitude) can only be expressed by referring to the entity to be honored, while in (2) the same attitude may be expressed while talking about unrelated matters. In this scheme, respectful pronouns like *vous* or *Sie* used to singular addressees are referent honorifics that happen to refer to the addressee, while the Tamil particle *nka* or Japanese verbal affix *–mas* are addressee honorifics that can be adjoined by the relevant rules to any proposition. The elaborate honorifics systems of Southeast Asia are built up from a mixture of (1) and (2) – for example, there are likely to be humiliative forms replacing the first person pronoun (on the principle that lowering the self raises the other) together with honorific forms for referring to the addressee or third parties (both referent honorifics), and in addition suppletive forms for such verbs as "eat" or "go," giving respect to the addressee regardless of who is the subject of the verb (see Brown and Levinson 1987, Errington 1988, Shibatani 1999).

The third axis is encoded in BYSTANDER HONORIFICS, signaling respect to non-addressed but present party. In Pohnpei, in addition to referent and addressee honorifics, there are special suppletive verbs and nouns to be used in the presence of a chief (Keating 1998). Many Australian languages had taboo vocabularies used in the presence of real or potential in-laws, or those who fell in a marriagable section for ego but were too close to marry (Dixon 1980: 58–65, Haviland 1979). Yélî Dnye has a similar, if more limited, taboo vocabulary for in-laws, especially parents and siblings of the spouse. The fourth axis involves respect conveyed to the setting or event. Most Germans use a system of address with *Du* vs. *Sie* and First Name vs. *Herr/Frau* + Last Name which is unwavering across formal or informal contexts; they find surprising the ease with which English speakers can switch from First Name to Title + Last Name according to the formality of the situation (Brown and Gilman 1960, Lambert and Tucker 1976). Many European languages have distinct registers used on formal occasions, where *eat* becomes *dine*, *home* becomes *residence*, etc., while Tamil has diglossic variants, with distinct morphology for formal and literary uses.

Systems of address of any kind – pronouns, titles, kin-terms – are guided by the social-deictic contrasts made by alternate forms. The contents of honorifics (see Shibatani 1999) should be taken to be conventional implicatures overlaid on the referential content (if any), for the deictic content is not cancelable and does not fall under the scope of logical operators (see Levinson 1979a).

6   Conclusions

This chapter has touched on a number of topics that establish deixis as a central subject in the theory of language. Indexicality probably played a crucial part in the evolution of language, prior to the full-scale recursive, symbolic system characteristic of modern human language. The intersection of indexicality and the symbolic system engenders a hybrid with complexities beyond the two contributing systems. These complexities are evident in the paradoxes of token-reflexivity and in the puzzles of the psychological content of indexical utterances. Deictic categories like person are universal (although variably expressed), demonstrating their importance to the fundamental design of language. Their special role in language learning and differential elaboration in the languages of the world makes a typology of the major deictic categories an important item on the agenda for future research.

NOTES

1 In opposition to classical perceptual theory, J. J. Gibson stressed the active nature of the perceiving animal and the way perception is geared to the features of the environment ("affordances") which encourage or inhibit certain actions. See Pick and Pick (1999).

2 For the further puzzles this raises for the subjective "thoughts" corresponding to sentences, see Stalnaker (1999: chapter 7).

3 Yélî Dnye is an isolate of the Papuan linguistic area spoken on Rossel Island (Henderson 1995, Levinson 2000b).

4 There is evidence suggesting a similar privative relation between *this* and *that*, with the former marked as [+proximal] and the latter unmarked for proximity, picking up its distal meaning by the Quantity maxim.

5 See Kehler and Ward (this volume) for a discussion of another anaphor – *do so* – that cannot be used exophorically.