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How Time Affects the Shape of Language

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How Time Affects the Shape of Language

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In speaking here of the shape of language, I have in mind both the shape of linguistic forms (sounds, letters, words, sentences, and the like) and the shape of the thoughts those forms represent, as well as of the relations between the forms and thoughts. Every language provides ways of organizing sounds, but it is at least equally important to realize that every language also provides ways of organizing ideas and relating the sounds to the ideas. All these things together make up what I will be calling language shape.

In linguistics today there are two quite different ways of accounting for the shape of language. According to one view that is extremely popular at the present time, language is a self-contained module in the human mind, and it has the shape which it has because the human nervous system has evolved in such a way as to give it that shape. This view provides no strong motivation for explaining *why* the capacity for language should have evolved in this particular way. It concentrates on linguistic universals, as one must, if one believes that all the most important and interesting things about language are already built into the human organism. Whatever differences may be found between languages are, according to this way of thinking, relatively superficial variations on a theme that is common to all languages.

Another view, and of course it is my own, is that language is *not* a self-contained module, but is shaped in fundamental ways by numerous factors external to it, some of which are operative for humans everywhere, but some of which are localized in specific cultures and even specific individuals. Among these factors are, for example, various functions of the human mind (such as consciousness, memory, and imagination); the various ways in which people interact with each other; and the various historical forces that cause languages to change. It is interesting to observe that time plays a role in all of the factors just mentioned, and how it does so is what I want to explore here. In their general outline the influences of time apply equally to all languages, but these universal effects are realized by different languages in ways unique to each of them. A common foundation allows for infinite variety in its specific manifestations.

It is worth mentioning, perhaps, that although time is a dimension of the physical universe, it is experienced by humans in ways that need not always coincide with its physical nature. Physically identical hours, for example, may drag or they

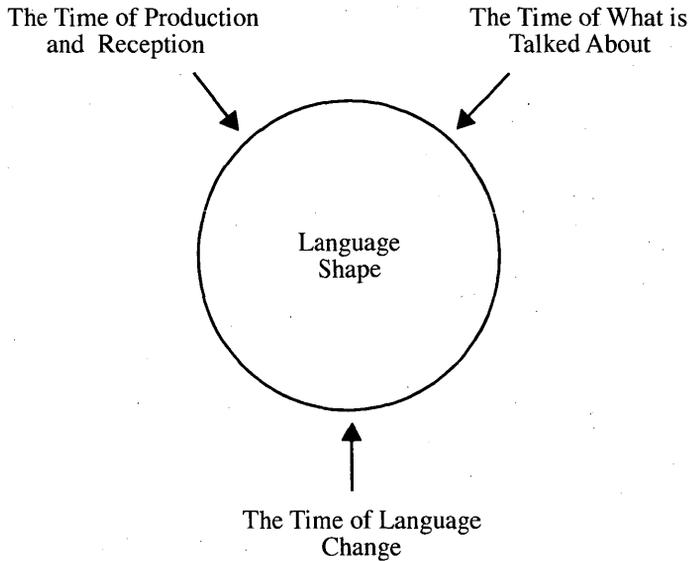


Figure 1 Temporal Influences on the Shape of Language

may fly by, depending on the context in which they are experienced. Physical time and experiential time thus need to be distinguished, and I will assume that it is experiential time which is more directly relevant when we consider the influence of time on language.

There seem to be three basic ways in which time affects the shape of language. First, language is affected by time on a moment-to-moment scale as people talk. Second, people have the ability to think and talk about experiences that are either derived from the immediate environment or are temporally displaced. Thus, in addition to the time during which language is being produced, we can take account of the time of what is being talked about. Finally, the particular ways in which particular languages organize sounds and meanings and relate them to each other are subject to change through time. My plan is to discuss each of these influences in turn: first, the ongoing flow of language as it is produced and understood in time; second, the temporal immediacy and/or displacement of the thoughts that language represents; and finally the role of time in language change. Figure 1 provides a way of visualizing this overall organization.

1. Language is Produced and Understood in Time

The relation of time to language production and reception is much more straightforward in spoken language than in written language. The trouble with written language is that both its production and its reception severely distort the more natural temporal characteristics of speech. I will return to that topic below. The obvious fact that speaking involves the production and reception of sound

makes it fundamentally dependent on time, since time is one of the primary dimensions of sound. But if time is basic to sound, it is also a major dimension of thought as well, in the sense that the ideas expressed by language constantly change through time as language is being produced. In both speech and silent thought the ideas that are present in active consciousness are continually being replaced by other ideas. I have discussed this ongoing, temporal flow of language and thought more fully in Chafe (1994).

As explored in that work and elsewhere, speech can be observed to be produced in a series of brief spurts, typically lasting from one to two seconds, whose boundaries are identifiable through various criteria that include pausing, terminal pitch contours, and significant overall changes in pitch, timing, loudness, and/or voice quality. I have been calling these segments of speech *intonation units*, but the name is not important. What *is* important is their ubiquitous presence in all genres of speaking, and apparently in all languages. Some idea of their nature is provided in example (1), where each intonation unit is written in a separate line. The chief criterion for segmenting the units in this example is intonation; only a minority of them are separated by pauses, which are shown by sequences of two or three dots, indicating short or long pauses respectively. In this excerpt speaker A asked speaker B, a woman in her eighties who grew up on an Indian reservation, about the school she attended when she was a little girl, in contrast to the school her sister attended, which B had just been talking about.

- (1) a A What was yóur schòol like.
 b I mean .. did did you have uh—
 c B In Réd Hòuse?
 d A In Réd Hòuse yéah.
 e B Well thát was a nice schóol,
 f it only wént to èighth gráde,
 g A .. Mm.
 h Í see,
 i B A = nd that was just a smá = ll schòo = l,
 j and wé hád a ... a = lády tèacher,
 k uh = Flòra Héron.
 l ... Flòra Héron.
 m ... Índian ... làdy.
 n A Mm.
 o B .. And shé was our tèacher thère,
 p but shé w-
 q shé seemed to be prètty nice,
 r A Mhm,
 s B .. Shè was stérn,
 t .. but she was nice,
 u A Mhm,

- v ... did she teach all the grades?
 w B ... Uh = yeah they had to teach .. all the grades,
 x like .. uh .. from = the beginners,
 y to the .. eighth grade.
 z A Mm.

It is intuitively satisfying, and it turns out to have productive consequences, if intonation units are hypothesized to be phonetic representations of information that is at first in the focal, active consciousness of the speaker and then, through the utterance of the intonation unit, becomes active in some form in the consciousness of the listener. Not all intonation units express substantive ideas, but those that do (disregarding such "regulatory" units as *mm* and *mhm*) show a modal length in English conversation of four words, a fact which suggests that there is an important cognitive constraint on how much information can be fully active in the mind at one time. (It is important to realize that this figure of four words per intonation unit is valid only for English. Other languages may show differences here, especially because languages differ in how much information they include within a word.)

It appears to be impossible, or at least very difficult, for people to activate or bring into focal consciousness more than one new idea at a time—more than one idea that is not already active or at least semiactive. This one-new-idea-per-intonation-unit constraint is to a considerable extent responsible for the syntactic and semantic limitations observable in the phrasing of speech, and thus for the shape that intonation units take. The new idea of having a lady teacher was verbalized in the presentative clause in (1)j, for example, but it was necessary to add her name in the separate intonation unit that followed, and then in (1)m the fact that she was an Indian.

Many intonation units have the syntactic form of a clause, as is true of about half the units in this example. The function of a clause is to verbalize an idea of an event or state. Most of the clauses in the example express states, as in (1)e, but (1)w consists of a clause that expresses an event, in this case a generic one. Usually each intonation unit verbalizes a different event or state idea from the unit that preceded it, a fact which suggests that ideas of events and states tend to be highly transient in active consciousness. Most event and state ideas incorporate one or more referents—ideas of people, objects, or abstractions—which function as participants in them. Some intonation units, such as (1)k, express a referent alone, but many referents are verbalized as elements in events or states, as the idea of B's school is verbalized with the word *that* in (1)e. Unlike event or state ideas, referents often persist in active consciousness, remaining active through a sequence of intonation units, as the idea of B's school persists from (1)a through (1)i. Sometimes referents are reactivated after an interval during which they lapsed into a semiactive state, as happened with the idea of the *eighth grade* that was first activated in (1)f, then allowed to lapse, and then reactivated in (1)y.

There are larger ideas, reasonably called *topics* (or *discourse topics*), that are

determined by larger aggregates of information in the *semiactive* state. A topic is a collection of information too comprehensive to be in fully active consciousness at one time. Speech is based to a large extent on the scanning of these semiactive topics by fully active foci of consciousness. When this scanning is verbalized the result is an episodic or paragraph-like unit of speech.

The beginnings and endings of topics are identifiable through both the syntax and prosody of spoken language. In (1) speaker A introduces a new topic by means of the topic-eliciting question in (1)a:

(1) a A What was your school like.

and speaker B then proceeds to scan it with separate foci of consciousness, activating and verbalizing a sequence of ideas, mostly spontaneously, but occasionally guided by questions from A, as in (1)v:

(1) v A ... did she teach all the grades?

Intermediate in duration between intonation units and these more comprehensive topics are *sentences*, whose shape is particularly subject to effects of on-line language production. For example, the intonation unit sequence (1)w-y constitutes a sentence on both syntactic and prosodic grounds. Syntactically it consists of a main clause followed by two prepositional phrases. Prosodically it ends with the falling pitch contour that is typical of sentence conclusions:

(1) w B ... Uh = yeah they had to teach .. all the grades,
 x like .. uh .. from = the beginners,
 y to the .. eighth grade.

Sentences evidently function to bring together chunks of information that are too large to be accommodated within a single focus of consciousness, being intermediate in comprehensiveness between a single focus and a topic. It is interesting to find that, whereas both intonation units and topics remain relatively stable in content across repeated tellings of the same experience by the same individual, sentences do not. The information brought together in a sentence seems not to represent any cognitively stable unit of perception, storage, or memory. Rather, sentence boundaries appear at points where the speaker makes a rapid judgment that a coherent center of interest has been verbalized. There are varied grounds for making such a judgment, grounds that are subject to variation in repeated verbalizations of the same material. Sentences appear to result from on-line, fleeting judgments of coherence. But whereas foci of consciousness and topics appear to be constrained by universal cognitive mechanisms, sentences do not.

One last point is worth raising with regard to the ongoing production and reception of speech. Since language is so fundamentally a temporal phenomenon

in the sense that the sounds and thoughts of which it is composed are constantly changing through time, it is interesting to think about the nature of written *texts*, which attempt to capture these constantly changing sounds and thoughts in a fixed, visual medium. Example (1) is an abbreviated example of a text. Texts are unquestionably useful to those of us who attempt to analyze language. They allow us to bring together within a single, temporally stable object a host of transitory phenomena, thus facilitating our analyses. In other words, a text is useful as a kind of time machine. But to understand the true nature of language we need always to keep in mind that neither time machines nor texts are real, and that in reality language is a temporal *process*, not a static *thing*.

To wrap up what I have said so far, on the formal side spoken language exhibits intonation units, sentences, and larger, paragraph-like units, all of which are temporal phenomena. But these aspects of the flow of *form* depend on the temporal flow of *thought*-intonation units depending on constantly changing foci of consciousness, the paragraph-like units on the larger coherences in semiactive consciousness that I have been calling topics, and sentences being fleetingly constructed on the basis of changing centers of interest.

It is interesting in this light to compare the role of time in shaping the nature of *written* as opposed to spoken language. In certain ways it is unfortunate that our understanding of language has been so strongly influenced over the ages by writing rather than speaking, something that has happened in part because writing has enjoyed a higher status and authority, in part because it has always been easier to devote systematic study to an object that remains fixed in time. Evanescent spoken language has only become available to comprehensive study in the present century with the development of tape recorders and other electronic devices.

It is obvious, as soon as one thinks about it, that the relation between time and the ongoing production and reception of language is severely distorted in writing. It is mechanically impossible to write at the pace that is basic to speaking. Furthermore, whereas *listening* is necessarily synchronized with speaking, *reading* is free to occur at whatever tempo a reader finds comfortable. The fact that reading can take place at a somewhat faster tempo than listening suggests how far one can push the human ability to assimilate information through time; apparently a little farther, but not a great deal farther, than the limits associated with speaking and listening.

This whole question of the nature of the constraints on the flow of thought and language that are imposed in different ways by speaking and writing needs further exploration. To what extent is the tempo of speaking determined by temporal limits on sound production and reception, to what extent does it depend on the necessity to choose appropriate ways of verbalizing one's thoughts, and to what extent is it limited by the ability of the mind to activate and assimilate ideas through time? How are these constraints distorted by writing and reading, and to what extent are they carried over from speaking into this other medium? With respect to written language it is obvious above all that temporal constraints apply to *reading*,

but since rereading rapidly what one has written slowly can significantly affect the shape of written language during the process of revision, these same constraints can influence the shape of written language too. As a research strategy my own prejudice has been to try to understand as much as possible about the relation of time to speaking and listening first, and then to apply this knowledge to an understanding of writing and reading—in other words, to approach the study of writing from a perspective that has been gained from the study of speaking (Chafe 1986).

2. Language Expresses Ideas that are Located in Time

Human consciousness very often focuses, not on the immediately present environment, but on experiences that are remembered from the past, hypothesized for the future, or simply fantasized. Certainly we all know, or can easily make ourselves aware, that our consciousness is sometimes directed toward what is happening here and now, but that there are also many other occasions when what we are consciously experiencing is either remembered or imagined. On this basis we can say that both consciousness and language are sometimes in the *immediate mode*, sometimes in the *displaced mode*.

My own observations of ordinary conversational speech—and I believe they will be confirmed by anyone who looks at natural linguistic materials with this distinction in mind—have indicated that conversation usually takes place in the displaced mode; in other words, that people talk most often about experiences which are remembered or imagined. I have suggested several reasons why this should be the case (Chafe 1994:200). For one thing, displaced experiences are less likely to be held in common with an interlocutor, and they are thus more likely to be interesting and informative. They are also more likely to provide topics that surpass in interest the more mundane environment in which conversations may be situated. They also, of course, provide a much larger repertoire from which conversationalists can choose. Speakers, too, will have had more time to reflect on and organize displaced experiences. None of this is to deny, of course, that people sometimes talk about what immediately surrounds them, but for the reasons just given such talk tends to be less common in everyday conversation.

It is important to realize—and this is a more subtle but no less valid point—that immediate and displaced experiences are qualitatively different. They are not experiences of the same kind. For one thing, immediate experience is felt to be continuous, in the sense that we experience our conscious lives as if they were proceeding continuously through time, whereas displaced experiences are island-like. We remember or imagine isolated episodes, detached from their preceding and following contexts. A second way in which immediate and displaced experiences differ is that immediate experiences are richly detailed. We feel we have access to everything that is “out there,” even though we can actually focus on no more than one small part of it at a time. Displaced experiences, in contrast, are

impoverished; ordinarily we remember only attenuated images and our evaluations of them. Professor Furuhashi has brought to my attention a third way in which immediate experience differs from displaced. It is through immediate experience, by definition, that direct interaction with the environment takes place. As a consequence, immediate experience has a quality of unpredictability that is absent from what has already been experienced, as well as from what may be anticipated. *Now* is where things happen, things over which we often lack control. *Now* is the immediate locus of unpredictable pleasure and danger both, of emotion-laden experiences which are realized only indirectly in the *then* of memory and imagination,

Still further reflection—and this is the subtlest point of all—can lead to the realization that when we are talking in the displaced mode there are actually two distinguishable consciousnesses, one of them *proximal* and the other *distal*. The proximal consciousness is that of a speaker at the time and place of speaking; the distal consciousness is that which is remembered or imagined. But the proximal consciousness itself has two distinguishable aspects. For one thing it is the consciousness which is responsible for the production of the language, and on that basis we can call it the *representing* consciousness. In addition, however, what is expressed by the language is the *content* of this proximal consciousness, and for that reason we can call it the *represented* consciousness as well, as sketched in Figure 2 (for a more complete diagram see Chafe 1994:199). In the displaced mode the represented content is derived through the remembering or imagining of a different, distal consciousness. It is important to realize that what is represented by the language is not the distal consciousness itself, in all its continuity, detail, and unpredictability, but the speaker's attenuated remembering of it. The distal consciousness may at an earlier time have had the qualities associated with immediacy, but remembering yields an experience that is island-like, with severely attenuated detail.

The value of distinguishing in this way between the representing and represented aspects of a proximal consciousness is something we might not appreciate, were it not for certain ways in which consciousness has been manipulated by certain writers. Writing is usually *desituated*, which is to say that the producer and receiver of the language are spatially and temporally separated and lack any opportunity for the kind of direct interaction in which the producer of the language at one moment can become the receiver of the language at the next moment and vice versa, as happens in conversation. This desituatedness of writing

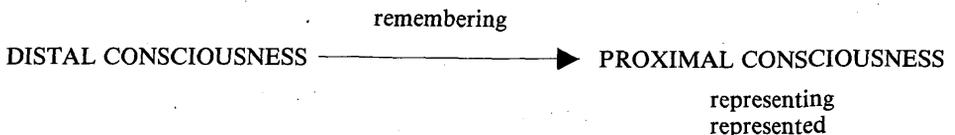


Figure 2 Consciousness in the Displaced Mode

provides an environment that enables writers to do certain things with language that conversationalists ordinarily do not do. By distorting language from the shape it ordinarily has in conversation, writers can illuminate aspects of language and consciousness that might not otherwise come to our attention. We can focus here on the fact that writers of fiction sometimes shed light on a fundamental difference between adverbs of space and time like *here*, *there*, *now*, and *then* on the one hand and, on the other hand, expressions of tense. The difference between spatiotemporal adverbs and tense is one that is usually hidden in spoken language; it is only in certain kinds of writing that it clearly emerges.

Examples are not hard to find; I will cite a few from a particularly well-known American novel, *Moby Dick* (Melville 1851/1972). Portions of this novel are written in a style that can reasonably be labeled *displaced immediacy*. This term may seem from what I have said so far to be an oxymoron, and with nothing but conversational language to guide us that might be a fair conclusion. How can an experience be displaced and immediate at the same time? Writers, however, can take advantage of the desituatedness of writing to separate the represented from the representing consciousness, as suggested in Figure 3. The resulting language conveys an experience that is displaced from the environment of the representing consciousness, but the represented consciousness does not, as in Figure 2, have the qualities ordinarily associated with remembering. Instead, it is fictionally endowed with qualities of immediacy, as if it were in the immediate mode. There is a pretense that the producer of the language has the ability to remember distal experiences as if they were immediate. A skilled writer can manipulate this pretense as an aesthetically effective device.

One of the qualities of immediacy, as remarked above, is a continuity of experience that contrasts with the island-like quality of remembering. Melville sometimes expresses this continuity by means of a smooth transition between chapters, omitting any temporal gap. For example, after his protagonist Ishmael has spent the night in the same bed with the South Sea Islander Queequeg and has watched him dress, Chapter 4 ends with the sentence:

- (2) The rest of his toilet was soon achieved, and he proudly marched out of the room, wrapped up in his great pilot monkey jacket, and sporting his harpoon like a marshal's baton (p. 122).

Chapter 5 follows without a gap, as Ishmael goes to breakfast. It begins:

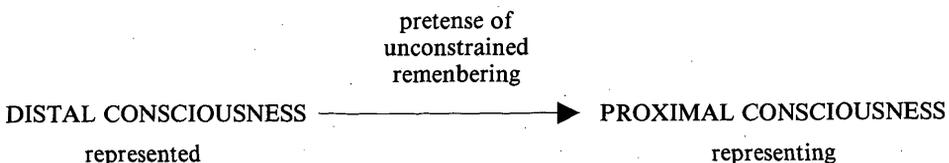


Figure 3 Displaced Immediacy

- (3) I quickly followed suit, and descending into the bar-room accosted the grinning landlord very pleasantly (p. 123).

Ishmael's consciousness here, although the past tense shows it to be displaced, is presented with the continuous quality of an immediate experience.

Furthermore, *Moby Dick* often shows a richness of detail that is similarly characteristic of immediate rather than displaced experience. We find it, for example, as Ishmael first surveys his sleeping quarters:

- (4) Folding back the counterpane, I stooped over the bed. Though none of the most elegant, it yet stood the scrutiny tolerably well. I then glanced round the room; and besides the bedstead and center table, could see no other furniture belonging to the place, but a rude shelf, the four walls, and a papered fireboard representing a man striking a whale. Of things not properly belonging to the room, there was a hammock lashed up, and thrown upon the floor in one corner; also a large seaman's bag, containing the harpooneers' wardrobe, no doubt in lieu of a land trunk. Likewise, there was a parcel of outlandish bone fish hooks on the shelf over the fire-place, and a tall harpoon standing at the head of the bed (p. 112).

These are details of a kind that would ordinarily be available to a consciousness in the immediate mode, but not to a consciousness that was in the process of remembering in the usual way.

From the point of view of ordinary conversational language there is an incongruity between the immediacy conveyed by the continuity in (2-3), as well as the detail in (4), and the use of the past tense throughout these passages. The function of the past tense can usefully be characterized in terms of the relation between a proximal and a distal consciousness. Past tense "means" that the time of the distal consciousness preceded that of the representing consciousness, just as future tense "means" that the time of the distal consciousness is anticipated to follow that of the representing consciousness.

The incongruity just noted between continuity and detail on the one hand and the past tense on the other hand is probably too subtle to come easily to the attention of a casual observer. Readers of fiction are accustomed to it, and would be unlikely to notice anything odd about the use of past tense combined with the immediate transition between (2) and (3) or with the immediate detail in (4), even though, from an everyday language point of view, these combinations are indeed unusual. But a more obvious incongruity, simply because it appears in obvious elements of linguistic form, is the use of the past tense with the temporal adverb *now*, as when Ishmael surveys the people gathered for breakfast:

- (5) The bar-room was now full of the boarders who had been dropping in the night

previous, and whom I had not as yet had a good look at (p. 123).

or when breakfast is announced:

- (6) “Grub, ho!” now cried the landlord, flinging open a door, and in we went to breakfast (p. 124).

Similar is the use of *here* to locate a distal experience in space. Ishmael is surprised by the shyness of his breakfast companions:

- (7) Yes, here were a set of sea-dogs, many of whom without the slightest bashfulness had boarded great whales on the high seas—entire strangers to them—and duelled them dead without winking; and yet, here they sat at a social breakfast table—all of the same calling, all of kindred tastes—looking round as sheepishly at each other as though they had never been out of sight of some sheepfold among the Green Mountains (p. 124).

Examples like (5), (6), and (7) illustrate well the fundamental difference between the deixis of tense and the deixis of spatiotemporal adverbs. Briefly put, the deictic center for tense is the *representing* consciousness, whereas the deictic center for spatiotemporal adverbs is the *represented* one (see figure 3). Tense relates the time of an experience to the time of the consciousness producing the language. As noted above, the past and future tenses signal that the time of the experience was prior to or is anticipated to follow the time of the representing consciousness, while the present tense signals that the time of the experience coincides with the time of the representing consciousness. Quite differently, spatiotemporal adverbs locate an experience in space or time with reference to the *represented* consciousness—the consciousness whose content is being expressed by the language. The words *here* and *now* signal coincidence with the space and time of the represented consciousness, whereas *there* and *then* convey a space and time that is different from that of the represented consciousness. Because in ordinary speaking the represented and representing consciousnesses are usually congruent, there is a natural tendency to regard *now*, for example, as symbiotic with the present tense. But when the represented and representing consciousnesses are separated, as in (5) and (6), it is entirely natural for *now* and the past tense to occur together. This differing behavior of tense and adverbs can be satisfactorily understood only if one recognizes that consciousness may be either immediate or displaced, only if one takes account of the distinctive qualities of these two modes, and only if one recognizes in addition the distinction between a representing and a represented consciousness.

Tense is often visualized by linguists in terms of a line like that shown in Figure 4, adapted from Comrie (1985:2). Comrie says, “This representation enables us to represent diagrammatically a range of ordinary-language statements about time.

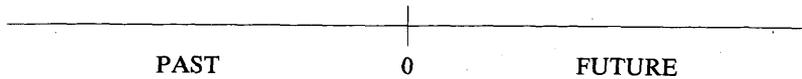


Figure 4 A Traditional Way of Representing Time

For instance, to say that an event occurred in the past is to locate it diagrammatically to the left of 0; ... More importantly, it will be claimed that this diagrammatic representation of time is adequate for an account of tense in human language."

I suggest that this kind of representation is only part of the story, and that it is more realistic to suppose that tense is fundamentally based on a recognition of the differing qualities of conscious experience. As outlined above and more fully developed in Chafe (1994; see also Chafe 1973), what is happening just now is experienced in a different way from what is remembered from the past or predicted for the future. It is more likely to be the special *quality* of remembered experience that causes one to signal it with a past tense marker, the quality of predicted experience that causes it to be signaled with the future tense. If there are finer tense distinctions than these they may be based, for example, on a qualitative difference between what is remembered from earlier the same day as opposed to what is remembered from the day before, or from ten years earlier. As in many other instances of mental phenomena, linguists have been too willing to fall back on abstract spatial diagrams like Figure 4 as a substitute for probing the nature of human experience, while psychologists have been all too willing to ignore the relevance of linguistic categories for a better understanding of the human mind.

In summary, I have been concerned in this section with showing that tense and temporal adverbs, the two chief linguistic indicators of time, are differently determined, and that the difference is highlighted in certain styles of writing where the representing consciousness, producing the language, is distinct from the represented consciousness, whose content the language expresses. In the style I have called displaced immediacy these two consciousnesses are separated, and the different deictic centers of, for example, *now* and the past tense, become apparent. I closed the section with a suggestion that tense distinctions are really expressions of the distinct qualities of conscious experience, and not of positions on an abstract time line.

3. Language Changes through Time

Finally, time also affects the shape of language by providing a long-term environment for language change. Historical linguistics is, of course, a well-established discipline and one might wonder how much more there is to say about it, aside from the working out of details. It seems to me, however, that much of contemporary linguistics overlooks the importance of viewing synchronic

phenomena as temporary stages in an ongoing, inexorable process of change through time. It has been argued repeatedly that speakers cannot know the history of their language, and that its history is therefore irrelevant to an understanding of a language at a particular point in time. It is paradoxical that this same approach has credited speakers with a tacit knowledge of “rules” that essentially mirror the historical processes through which a language came to have the shape it has. The ontological status of such rules needs serious questioning of a kind that is rarely given it.

It is more realistic, I think, to recognize that speakers need to cope with the *results* of their language’s history, even while they may be unaware of what that history was. They do that in part through sheer memorization of a very large amount of knowledge of very particular details, at the same time that they recognize and extend by analogy the patterns their language’s history has created. We really need to know much more about how speakers actually deal with the long-term effects of time on their language.

Nowhere does this question become more pressing than when one explores the effects of phonological change on the morphological structure of a polysynthetic language. I can illustrate the relevance of such material with two words from the Caddo language, once spoken over a large area of what are now the states of Texas, Louisiana, and Arkansas, but now remembered only by a small number of people in western Oklahoma. These words are a small selection from what might be considered the paradigm of the verb that means ‘hear’:

- (8)a ciwčibáwnah ‘I heard’
 b bašbáwnah ‘he/she/it heard’

A quick glance at these words might lead one to identify -báwnah as a stem meaning ‘heard’, leaving *ciw-* as a first person prefix and *baš-* as a third person prefix, but that analysis would have to be revised as soon as one knew a little more about the language. First person, it turns out, is usually represented by a prefix *ci-*, while third person shows no corresponding prefix at all. Linguists would be inclined to say that third person is represented by zero. Looking back at the two words in (8) in this light, we might then wonder what is responsible for the segment -wči- after the *ci-* in (8)a, and for the very different-looking segment *baš-* at the beginning of (8)b.

Internal reconstruction leads one to the realization that these words were once pronounced as follows, with hyphens added for clarity of analysis:

- (9)a *ci-bak-yibáw-nah ‘I heard’
 b *bak-yibáw-nah ‘he/she/it heard’

Within these reconstructed words the verb root *yibáw-* meant ‘see’, or more generally ‘perceive’ (vision being the default modality of perception), whereas the

bak- that preceded it was an incorporated noun root meaning 'sound'. Thus, 'hear' was literally 'perceive sound'. (The *-nah* at the ends of these two words was and is an aspect suffix.) Among the many sound changes that affected Caddo over the course of time were the following (probably in this order), with the effects of these changes on the two words in (9) shown to the right:

- | | |
|---|--|
| (10) the replacement of <i>ky</i> by <i>č</i> : | * <i>cibačibáwnah</i>
* <i>bačibáwnah</i> |
| the dropping of vowels in second syllables: | * <i>cibčibáwnah</i>
* <i>bačbáwnah</i> |
| various weakenings of syllable codas: | <i>ciwčibáwnah</i>
<i>bašbáwnah</i> |

(The weakenings of syllable codas included the replacement of *b* by *w*, and the replacement of *č* by *š*.) These changes yielded the present forms of these words as first shown in (8).

Now, there is no reason to think that current speakers of the Caddo language "know" the processes listed in (10), whether these processes are regarded as changes that occurred during the history of this language, or whether they are regarded as "rules" that are somehow retained unconsciously in the minds of speakers, along with something like (9) in the guise of "underlying forms". It is certainly more realistic to think that Caddo speakers simply know the words *ciwčibáwnah* and *bašbáwnah*, having heard them repeatedly all their lives—that learning these words in these forms was a part of learning the language. We know that people have very large memories, and there is no reason to doubt that learning a very large number of words is something people can do. It is equally plausible that people learn patterns too, often very localized patterns, so that in some sense they know, for example, that the verb meaning 'hear' takes the shape *-wčibáw-* after a prefix consisting of a consonant and a vowel, and the shape *bašbáw-* when there is no prefix. But that is not at all the same kind of knowledge as knowledge of the processes listed in (10), whether that knowledge is viewed as something diachronic or something synchronic.

The question of how people deal with the complex results of large numbers of phonological changes in languages like Caddo needs further exploration, but such exploration has been sidetracked for the last few decades by a facile assumption that people operate with "rules" whose ontological status is rarely questioned. We need to separate the internal reconstruction of historical changes, a fascinating project for linguists, from the question of what people do with the results of those changes. In recent times those two quite different matters have been hopelessly confused with each other.

I would like to turn, finally, to a very different aspect of language change. In

recent years considerable and valuable attention has been paid to grammaticization: to processes by which structures that first arose in a language with semantic or pragmatic motivations come, through time, to be frozen into fixed forms and functions whose earlier motivations are at least partially obscured. Research on grammaticization has proceeded at a commendable pace, but I would like to stress here that more attention still needs to be paid to the related process of *lexicalization*, whereby certain collocations of words or other elements come to be frozen in standardized forms with standardized meanings. Lexicalization is an equally pervasive determiner of the shape of language through time.

We can see an example of the effect of lexicalization in the sequence *Réd Hòuse* in (1)c and (1)d above, a place name which, like the familiar example *bláckbird*, shows an initial strong accent that contrasts with a nonlexicalized sequence with a final strong accent, in this case *rèd hóuse*. But it needs to be recognized also that the localized and unpredictable meanings associated with a sequence like *Réd Hòuse* are only part of a much larger picture that includes established collocations like *èat bréakfast*, where the literal, compositional meaning is still present, but where, nevertheless, the sequence as a whole expresses a unitary meaning that is highly familiar and institutionalized.

The importance of recognizing collocations of this latter type came home to me as I was exploring the hypothesis that intonation units express no more than one item of new information. If one thought that *eat* and *breakfast*, for example, expressed independent ideas, and similarly in many other cases, the one-new-idea hypothesis would very quickly be discarded. Counterexamples would be everywhere. It is interesting in this light to look back at (1)f:

(1)f it only wént to èighth gráde,

Probably it is not only the eighth grade, but all the numbered grades that have achieved this lexicalized, institutionalized character. Children, after all, spend an entire academic year in each of the grades. My point is that (1)f introduces with two words a unitary new idea. It is not composed of independent ideas signaled separately by the words *eighth* and *grade*. To construct an exhaustive list of such collocations for English or any other language would be a mammoth task, even without the added complication that such a list would vary significantly across subcultures and even individuals (for a beginning see Benson, Benson, and Ilson 1986). Nevertheless, the unitary nature of such collocations is real enough, and it affects the shape of language in the sense that, for example, speaker B did not need to assign *eighth* and *grade* to separate intonation units.

Conclusion

I have discussed ways in which language is shaped by (1) the flow of both focal and peripheral consciousness through time as language is being produced and

understood, (2) the temporal immediacy or displacement of one's consciousness of what is being talked about, and (3) the changes that take place as languages pass through time. I believe it is important to remain always aware that language is a temporal phenomenon, not a static object; that written language, in spite of or because of its desituatedness, can shed light on the nature of such temporally based phenomena as tense and temporal adverbs; and that we still need an improved understanding of how the users of a language cope with the modifications produced by language change.

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