

TIME AND TENSE IN ENGLISH

thesis

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INTRODUCTION

In this study I attempt a chronological survey of studies in Time and Tense in the English language, my ultimate aim being to show what we do not know about this topic, rather than how much we do know.

Time and Tense is one of those elusive subjects which lies in the undetermined ground between linguistics, logic and philosophy, and involves some of each. In this linguistically oriented study of the phenomenon, I start by giving a broad account of how it has been treated, ignored and pondered upon over the centuries; I try to give a brief survey of some of the basic notions in connection with this topic, in order to clarify exactly what it is that I am concerned with.

I look at some traditional philosophical and metaphysical views on the subject, and I deal with problems such as the passage, directionality and egocentricity of time, the paradox of the present moment, and whether tense is a linguistic universal. Chapter 1 is an attempt to give a broad view of the more general issues involved in the topic "Time and Tense".

In Chapter 2 I present a brief survey of time in logic, for the two are obviously very closely interconnected. As I am not centrally concerned with logic, and am a layman in such matters, I simply touch upon what seem to be relevant areas of the subject - relevant to a general understanding of tense and time, that is - and I do not present any individual system in detail.

Initially I have taken pains to stress just how vague and apparently inconsistent our notions of time and tense are. My ultimate purpose is to make a linguistic study of the topic, but in my humble opinion one cannot fully understand a part without some knowledge,

albeit superficial, of the whole. The first two chapters are written with this principle in mind.

For the remainder of the dissertation I focus on the grammatical part of the whole : tense. In Chapter 3 I give a brief chronological survey of the grammatical treatment of tense, from the time of Plato up to the start of the Transformationalist period (1960). Because of the enormous scope of my subject, in a study which does not claim to be exhaustive by any means, I am forced to deal very briefly with some writers and their ideas, although I do focus on a few, e.g. Twaddell (1960), Ota (1963), Palmer (1965) and others. I also provide a brief summary of what are generally regarded as the main "tenses" (present, past and future) and aspects (progressive and perfect).

I then devote my attention to more recent developments in the topic of time and tense in the transformationalist period. I examine the ideas of Chomsky (1957), Diver (1964), Crystal (1966), Ross (1967), Jacobs and Rosenbaum (1968), Huddleston (1968), Gallagher (1970), McCawley (1971) and others, in an attempt to demonstrate the growth of importance of semantics to grammar, and the development of an abstract approach to grammar. I attempt to trace a continuity of development towards the idea that tense is probably an abstract higher predicate of the sentence in which it appears in surface structure, closely related to adverbials of time, and always in a command position. In order to do this, I try to show that both tense and time adverbials are higher predicates.

In Chapter 5 I focus on tense, using arguments based on Conjunction Reduction, VP Constituency, Sequences of Tenses, Pronominalization and Quantification, to show that tense is in a command position in the sentence.

In the next chapter I try to show that the same is the case with time adverbials, using various syntactic tests, among them clefting, conjunction, complementation, relativization and negation. I do present some counterevidence to the hypothesis, but reach the overall conclusion that tense temporal adverbs are very probably higher predicates.

I then try to show that there are many suggestive parallels and similarity between tense and temporal adverbs, with the ultimate aim of pointing to the possibility of deriving one from the other. The last sections of Chapter 6 are based on the ideas of Hausmann (1972) concerning the actual derivation of tense from time adverbials.

Reference must be made to Robin Lakoff's (1970) thought-provoking article, in which she points out problems which remain, no matter what the theoretical derivation of tense (p.838-850). These involve matters such as the interrelation of actual time of occurrence of events with the degree of personal involvement of the speaker, hearer, or other participants in these events. Leech (1969) has also made an extensive and brilliant analysis on these lines, which a lack of space has prevented me from including in this study.

I have not dealt with extralinguistic factors, which influence tense in such sentences as the following:

- (1) The thing moving in the grass will no doubt be a bird. Let's wait and see.
- (2) The animal you ran over was a chipmunk, but it is dead.
- (3) Shakespeare has written many sonnets.
- (4) *Shakespeare has eaten eggs and bacon for breakfast.
- (5) If he eats any more of that, he will die / dies.

I have also not been able to make more than a passing reference to any language other than English (hence the title of this study).

No claim is made that tense should be derived from temporal adverbs universally, and the suggestions as regards English are merely hypothetical and tentative.

What I have tried to do is to present a broad survey of much of the existing literature on time and tense. I have attempted to coordinate several separate but similar theories on the topic, but I cannot, and do not, attempt to reach any definite conclusions on the basis of the evidence presented.

CHAPTER ONE

TIME AND TENSE - A SURVEY OF SOME BASIC NOTIONS

1.0 What is Time?

The multitude of writings on the subject of time, tense and aspect is ample evidence of the complexity of, and the interest in, the topic.] Obviously this thesis cannot cover the entire field of temporal studies, physical, logical, philosophical, metaphysical and linguistic, but before focussing on the linguistic aspects per se, this chapter provides a brief sketch of the major issues involved.

1.1 Some Definitions

As more and more is written on the topic of time, St. Augustine's lament becomes increasingly apt:

What is time? If nobody asks me, I know, but if I want to explain it to someone, then I do not know.

(Confessions bk. 9, ch. XIV, xvii)

Over the centuries there have been many and varied definitions of time. Parmenides and Zeno (Italianate Greeks of the 5th and 6th centuries B.C.) saw time as an illusion; according to Plato it was:

the moving image of eternity

(Timaeus 38)

The Greek Heraclitus said the flow of time is the essence of reality; in Aristotle's opinion it is:

the measure of change with respect to earlier and later

(Physics IV, II, 220 a 25)

and in St. Augustine's it is:

the extension of the mind

(Confessions bk. XI, ch. XXVI, xxxiii).

According to Epicureus time is:

the concomitant of concomitants

(Adversus Mathematicos X, 219)

and others have claimed it is the order of events, a form of becoming, the possibility of change, what clocks say, or the fourth dimension, unreal and imaginary.

None of these definitions seems to be entirely satisfactory. Perhaps there is truth in each of them. As Lucas (1973) says, time is the most basic and pervasive of all Aristotle's Categories, it is the concomitant of consciousness, the process of actualization, and the dimension of change, and it finds expression in logic, philosophy, religious beliefs, world views, physics and, of course, language.

It is a necessary concomitant of activity and of each man's idea of self, without which there would be no agents and no activity. Despite our experiential awareness of time, and our use of it in language, we cannot verbalize it, not because we are not sufficiently aware of our use of language, but because time is unlike anything else, it is part of our conceptual structure, unique to each of us, and yet universal; circular; not strictly ostensible; and non-contrastible.

We know time intimately, yet we are puzzled and fascinated by it, and troubled by its paradoxes. According to a well-known hymn "time like an ever-rolling stream bears all its sons away" - Where from? Where to? If the present is with us, where are the future and the past? Does even the present exist? How large is it, or has it no size? How can we say that time passes fast or slowly? How are we to measure its passage or rate?

Time is too immediate and pervasive to get into focus, too intangible and insubstantial to grasp or comprehend; it is one of those problems that seems unsolvable by philosophical analysis, yet

because it is implicitly involved in many of the basic concepts by which we think and talk, the roots of our conceptual system, it is important that we should try to understand it.

Different approaches focus on different aspects of time, none covers all, and both the difficulty and the importance of time arise from the various perspectives on it, (e.g. those of physics, or logic, or language) hence our need to be aware of these differences in viewpoint.

1.2 Some Traditional Philosophical and Metaphysical Views

1.2.0 General

The thinkers whose ideas I shall attempt to summarize here are Plato, Aristotle, Plotinus, and St. Augustine.

1.2.1 Plato

Plato's metaphysical commitments prevented him from taking time seriously, because according to his Doctrine of Ideas, the sensible world, temporal and changing, is not fully real. Thus he never discusses time in earnest, but only in a mythological fashion - a heady mixture of myth and metaphysics, nicely vague, and resulting in his definition of time as:

the moving image of eternity

(Timaeus 38)

This approach obviously leaves much room for improvement.

1.2.2 Aristotle

Aristotle took up the challenge in Physics (bk. 4, 218a-224a) where he asks in what sense, if any, time can be said to exist. He criticizes Plato's:

Time is the motion of the heavenly sphere

and Pythagoras's:

time is the sphere itself

and focusses on the problem of time's existence, being concerned with the empirical, strictly scientific viewpoint.

Aristotle establishes that time is one of the categories, but points out that if one part has been and is not, and if another will be and is not

surely that which consists of things that do not exist
can have no share in reality

(Physics bk. 4, 224a)

In trying to define time and now, he finds himself defining something in terms of itself in a circular fashion. Having concluded that time cannot exist without change (when our state of mind is constant we perceive no time lapse) he sees time as dependent on change or movement - not movement itself, but proportional to it, hence his definition:

time is number and movement in respect of the before
and after.

(Physics bk. 4, 224a)

that is, measurement of motion in temporal order.

Aristotle admits his inability to remedy the circularity of his definition and is forced to conclude that time is not a substantial entity, having no reality apart from the changes substances undergo, i.e. it has being only as an attribute of an attribute of another substance.

By a neat piece of dialectic Aristotle shows present to be a point, but here he runs into one of the big problems in modern thinking: the difference between "real" and "phenomenological" time; point present is indivisible, yet time is infinite and infinitely divisible; the present has no duration, and yet he feels it has; he hovers continually between a physical and a psychological viewpoint.

1.2.3 Epicureus and the Stoics

The Epicureans (Epicureus and his followers) and the Stoics made no real contributions to the solution of this problem after Aristotle. Epicureus (Diogenes Laertes X, 72-73) sees time as a character of events, which we experience directly as having no duration. Lucretius makes only a brief reference to time as an abstraction of the mind (1.460-464) and Zeno and his early successors agree with Aristotle in seeing time as the measure of motion, past and future as limitless.

The later Stoics show no interest in the topic. Plotinus (Enneads III, 7, 11) says time is inherent in the mind. He discusses time and eternity metaphysically, covering the traditional material on time, in trying to disprove Aristotle's views, and in Enneads III section 9 he points out the ambiguities and confusions in these views, and rejects a subjective view of time, denying that it has to be measured in order to exist. Time, he says, is:

the image of eternity, not existing in anything else
but itself

(Enneads III, 7, 11)

Ultimately, however, I feel that Plotinus is just as vague as Aristotle.

1.2.4 St. Augustine

Regarding time, St. Augustine says:

Time ... is an extension of the mind

(Confessions XI, ch. XXVI, xxxiii)

He distinguishes between time and eternity, but was obliged by his theological views, to see time as important, unlike Plato. He felt the tensions between time and eternity, and the contradictions between logic and experience, as is evident from the following:

In you, my mind, I measure my stretches of time ... I measure that present impression which passing events make in you, and which remains when they have passed, not the events which, in passing away, have made it. This is what I measure when I measure stretches of time, therefore either of these is time, or I do not measure time.

(Confessions bk. IX, ch. xxvii)

The problem of the measurement of time, and also that of the existence of past, present and future, troubled Augustine sorely. His theory has, I feel, a great freshness of viewpoint and originality, in comparison with Plato's apparently handsome myth, or with Aristotle's physics and psychology, and Plotinus's rather rapturous metaphysics. He is clear, full, critical, and makes what seems to me to be the first genuine attempt to account for time in seven centuries of meditation.

1.2.5 Overview

It is all too evident, today, how dangerous interpretations of early theories can be, because they tend to be embroidered over the years, and unthinkingly accepted. It is all very well to say, as St. Augustine did in his Confessions, that the present is a knife-edge without thickness, or that time is a protraction of the mind, that time measurement is measurement of conscious memory, that time is essentially subjective and psychological, with past as memory, present as sensory experience, future as expectation. Such utterances are impressive, but they do not help us to understand time properly.

1.3 Time versus Tense

Before I consider any specific problems, it is essential that I make a sharp distinction between time and tense. There are two types of temporal relations : relations of earlier and later, and relations

of past, present and future. The former are absolute, permanent and objective; they are facts of time; the latter are relative and entirely subjective - a matter of tense.

Events occur in time in an unchangeable order of before and after; what moves is the observer, the ego, who relates these events to himself in an order of past, present and future. So time exists, regardless of man, but tense is a matter of experience, awareness and language.

1.4 The Passage of Time

1.4.0 General

Sentient beings are under the impression that time passes; it all seems to be a matter of things becoming more past; what we mean by the flow of time is that whatever is, was, or will be happening, is all the time becoming more past. This is the view of Prior (1968, ch. 1).

This view of time as transient and dynamic is reflected metaphorically in our language, e.g. "the gnawing tooth of time" or "time flies".

Even as we try to understand it, time is passing. But is it time or tense that is passing? If A precedes B in time, it will eternally do so, regardless of who contemplates the fact. So, it is time that passes, and not tense.

Our time is spent in activity, and our lives, attitudes and thoughts are coloured by our awareness of the passage of time from future to past. Lucas (1973 ch. 1) describes life as a passage from hope to achievement, potentiality to actuality, uncertainty to knowledge, non-truth functionality to truth functionality, possibility to necessity : a continuous spectrum of probability ranging between truth and falsity.

The only evidence that this awareness of time is not illusory is that some change seems to have occurred, and even when none seems to occur, we constantly think, which is in itself a type of change, implying passage of time.

1.4.1 Direction of the Passage of Time

How do we know that the so-called "passage" of time is directional, from future, through present, to past? It is an essential condition of inter-subjective experience and communication that everyone's private time should have the same direction, and we can identify this direction by virtue of the fact that, as agents, we can predict the future, make decisions about it, have aims with reference to it, and we cannot remember it or see traces of it. The opposite holds for the past : we can sometimes reverse previous changes, not their effects, and our memory of the past, the knowledge we acquire, enables us to act as responsible agents, operating on the principle of cause and effect.

Time undeniably passes in one direction - from the future to the past. We presume that it is not cyclic, for if it were, there would be nothing new, everything would be recurrent, there would be no individuals, we could not date events, before would equal after, and we could never refer to temporal order.

If time were cyclic it would be static, and in my view, staticity, by which I mean absence of change in (space and) time, is not time. Lucas shares this view:

Cyclic time is static time, and static time is no time.

(1973 p.60)

It is undeniable that we do experience a time-flow, because of our ability to influence the future and not the past, and because of our sequence of mental events, our stream of consciousness.

We often mistakenly see the present as a surge of bigness rolling along a time-axis. Even as we do not have a single rolling "here" in space, (in a line of men, each has his own particular place), we do not have a rolling "now" in time. If that were how time moved, we would need a "super" time, ad infinitum, to measure the rate of flow of time. This would be absurd, and St. Augustine (Confessions), D.C. Williams (p.98 in Gale 1973) and Prior (1968) are among the many who have observed this.

1.5 Becoming

1.5.0 General

The "movement" of time is best termed becoming and becoming seems to be a vital feature of our personal temporal awareness. We must recognise the very close interconnection between subjective experience, becoming and language.

1.5.1 Becoming and the verb to be

One needs only to look at the history of the verb to be to see this interconnection : Originally weorthan meant to become rather than to be, evident still in the German werden, and Afrikaans word. This form was lost in English present tense (not the past was/were), but not the meaning, for language is never a precise or exact phenomenon, and the verb to be is a prime example of vagueness.

To be is temporally equivocal, having several distinct meanings and uses:

- a) atemporal e.g.
 - (1) three is a prime number.
 - (2) Breakfast is past.
- b) is of the present now e.g.
 - (3) The sun is setting.

c) omnitemporal e.g.

(4) Copper is a good conductor.

d) transtemporal e.g.

(5) The earth is a planet of the sun.

The last three are all temporal, so is can be sharply contrastive from a chronological viewpoint.

Language has two ways of recording temporal facts:

1) by using different tenses, in inflected languages, or a temporal copula (with three different forms) plus a temporal adverb e.g.

(6) I had an apple.

(7) I am writing now.

2) by using a single uniform tenseless copula, with a temporal adjective and/or adverb e.g.

(8) Eating my breakfast is just past.

(9) The next glacial period is in the remote future.

In the latter, the copula seems to be purely a linking device; it has become atemporal is by a shift of temporal reference from is to an explicit temporal designator, e.g.

(10) It is raining in London / Its raining in London now is a fact.

(11) Caesar was assassinated in 44 BC / Caesar's assassination in 44 BC is a fact.

as Nicholas Rescher (1966) points out. In the opinion of Lyons (1970), the copula is a purely grammatical element, which carries the distinction of tense, mood and aspect in the surface structure of certain stative sentences. The copula has three distinct functions:

a) existential e.g.

(12) There are lions in Africa.

b) locative e.g.

(13) The book is on the table.

(14) There is a book on the table.

c) possessive e.g.

(15) The book is John's.

How can these functions be related to the idea of becoming? The difference between stative and dynamic is relevant to two-place copulas of possession, attribution and location in English.

As	<u>become</u> (rich)	is to	<u>be</u> (rich)
so	<u>get</u> (the book)	is to	<u>have</u> (the book)
and	<u>go/come</u> (to London)	is to	<u>be</u> (in London).

The perfective of the dynamic of an existential, locative or possessive often implies the imperfective of the stative e.g.

(16) John has become rich John is rich.

(17) John has gone to Paris John is in Paris.

(One must, of course, note the other implications of (17): John has left and John is not here.)

Nevertheless there is a very close relationship between these three uses of be (above), related to the idea of becoming. The nice distinction between becoming and being has been lost over the centuries, as is evident in:

(18) I am to be married next year.

Other languages share this vagueness, for language is a matter of social contract: it is a matter of mutual agreement that we often use be when we mean become, for instance. If one looks at the metaphysics of becoming, the reason for this becomes evident.

Becoming is a vital feature of our personal temporal awareness - it is mind-dependent because it needs the occurrence of states of conceptual awareness: the becoming of events is seen as a sequence of "now"s or "is"s in a future direction, and our experience is

parallel with a temporal series of ordered now's.

To become present is, in fact, just to become, in an absolute sense i.e. to come to pass, or to happen. It is unfortunate that the sentence is grammatically the same as "to become louder" etc., for these record qualitative changes, not facts of absolute becoming.

It is ... hopeless to expect to treat absolute becoming as if it were a particular case of qualitative change ...

I do not suppose that so simple and fundamental a notion as that of absolute becoming can be analyzed, and I am quite certain that it cannot be analyzed in terms of a non-temporal copula and some kind of temporal predicate.

(Gale 1968, p.127).

1.5.2 The Subjectivity of Becoming

Adolf Grünbaum points out (Gale 1968, p.322) that future and past are centred around the present, and now is an attribute of events met in our perceptual awareness; so becoming is undeniably subjective - we need a world of people before we can have events becoming tensed.

Many, trying to be scientific, use empirical arguments of relativity to solve the problem. D.C. Williams (1966, p.98 in Gale 1968) said time itself cannot move any more than space can, and though the modes of speech and thought enshrine the idea of passage ineradicably, it is not time that moves, but the observer; time "moves" only when similar events are seen at successively different moments. As Weyl says:

the objective world simply is; it does not happen; only to the gaze of my consciousness crawling upward along the life line of my body does a section of this world come to life in a fleeting image.

(1949, p.116).

Eddington has the same opinion:

Events do not happen, they are just there, and we come across them.

(1920, p.51).

The members of this school of thought are numerous, and they claim that all times are equally real, with no rolling "now"; to them, time is like a row of men, each with his own "here", so that the only way it can become present is for it to be picked out arbitrarily by the speaker. But this seems to be confused with the spatial analogy - all events do not exist in time like objects in space, in my view; we cannot choose our reference point, and we are not free to orientate ourselves, because we are time-bound.

These problems are resolved by distinguishing sharply between time and tense (cf. 1.3): events can and do occur in time, regardless of time and conscious observers, and the earlier-later relations between them are indeed permanent and independent of ego. But tense is a very different matter.

Tense, in this sense, adds nothing to the information content of the assertion, i.e. to what is believed; it only has the pragmatic function of expressing a speaker's beliefs as regards his subjective view of the temporal relation between his own "now" and the time of the reported event.

It seems to me an undeniable fact that past, present and future are relative to a speaker, and therefore highly subjective. Events are not simply past, present and future in themselves (though they are before and after in this way) - they stand in relations of temporal precedence, which do not vary in time - what varies is only the reference point, the point of conscious observation, taken to constitute the perceptually shifting present.

1.5.3 Becoming and "now"

To say "X becomes" is to say "X happens". All our temporal theories depend on there being a present, and there being a present requires the conscious awareness of an experiencing ego, so it is subjective.

D.C. Williams says:

At every moment each of us finds himself the apparent centre of the world, enjoying a little lit foreground of the here and now...

(see Gale 1968, p.98).

Gale (1968) said that time is the concomitant of consciousness; perhaps it would be more accurate to say that tense is the concomitant of consciousness: to say "X is present" a person must token or mark the sentence by uttering it, and for a present tense sentence to be true, it must be tokened simultaneously with the reported event, (which rarely occurs in experience).

"Now" too, is a matter of consciousness, it seems, and nowness and sensory qualities alike, depend on awareness.

For tenses to be meaningful in any way, the recipient, in speech or writing, of

(19) X is falling now.

must know when, in time, the utterance occurred in relation to his reception thereof. Of course, if something happened without there being an utterance to mark its becoming present, we could never say of it "X is present".

Physical events occur independently of any mind, with permanent relationships of precedence and subsequence; but their becoming present is a matter of simultaneity between their independent becoming or happening, and our awareness thereof.

1.5.4 Events and Things in Becoming

As Prior (1968) says, things change, events occur, or are the changes. Things that change exist, and it is while they exist that they change; getting more past or less future are things an event does when it does not exist, hence our need to distinguish between the tiny bit of history that an event is, its occurrence or absolute becoming, and the infinite history that it has, a history which is relative to an observer, having future and past phases as well as the present one.

The former is a matter of time, the latter of tense. (cf. 1.3).

1.6 The Present Moment

Paradoxes about the actual existence and extent of the "present" seem to arise from a confusion between the personal, subjective sense of time, and the objective, scientific time of the physicist or the clock - this was part of St. Augustine's problem in Confessions. By a neat piece of dialectic he made the infinite divisibility of time an argument for its non-existence, and saw the present as a knife-edge between past and future, neither of which exists.

It is a mathematical hypothesis that an infinite series of nested present intervals defines a present instant. Once we allow the present to be an interval, then whatever interval is considered, it must consist of smaller intervals, of which only one can be present, the rest past or future, ad infinitum, which is perhaps counter-intuitive.

To solve the problem of the non-existent point present, we must distinguish between the interval-present and the instant-present (analogous to Leech's [$^+$ Peri] (1969, p.108)), and unfortunately English uses the same word for both, saying present is both an interval, like past and future, and an instant, dividing past and future.

The specious present of sensory awareness is very vague, dependent

on each perceiver. It seems that what we perceive at the present is the vivid fringe of memory, tinged with anticipation. But fringes are not instants - instantaneous now it seems, is theoretically essential, but empirically inadequate.

Empiricists, like J.C. Begg (1952, p. 75-77) and J.D. Mabbot (1951) deny that time can be infinitely divisible, or that there can be mathematical instants of time. According to them, we cannot say that between every two dates is a third, because our temporal discrimination is imperfect, and we cannot tell, between two more or less simultaneous events, which came first.

Experience seems to be a blur often; we have not got an infinite capacity and our language is similarly vague, to make communication possible. Words like now and present represent vague areas around the moment of utterance, their extent depending entirely on context, e.g.

(1) I am now busy with my university training.

versus

(2) I now type X.

It is arguable that our experience is a continuum, not point by point, but taking in an area of what is. Our perceptual present undeniably does have duration, and we call it the specious present, very different from the physicist's present, which is punctual.

Hence we have the paradox that the present can be divided into past, and future, until there is no present left.

1.7 Time and Language

There is a big difference between the language of daily life and that of a specialized field like physics, where the referents of a particular word are very clearly defined. Such precision is lacking in ordinary speech.

Need we ask "Is there a momentary present?"? We are free to

imagine it if we wish; the parts of an event are successive, but we are not forced to believe it, and can just as easily see the events in terms of wholes. Time is not a concrete substance, so why do we insist on drawing parallels and creating problems for ourselves because of our desire for precision?

J.N. Findlay (1963) points out that why people find time so paradoxical, contradictory and mysterious, is because of the ways in which we speak of it: we overlay our world with a web of words; the boundaries of linguistic usage are very vague, always dubious, and our language is constantly changing so the meanings of words continually widen and narrow, so as to make language apparently unserviceable.

"Unserviceable for what?" is the question we must ask. The word present is only inapplicable in very strict usage, as is the case with now, simply because its normally wide range becomes intolerably restricted, till it has no duration at all. Why this inordinate desire for precision? As Gale says:

what time makes it possible for us to say is exactly what cannot be said about time.

(1968a, p.243).

Paradox will always result from applying temporal concepts to time.

(1968a, p.242).

Perhaps we should follow the advice of Wittgenstein (1958), and focus on the use of temporal language, studying its effect, to find the meaning of the tenses. He questions the validity of the question "What is time?" We know what it is in the sense that we live in it, understand it, and use the word in its various contexts. Why the mystery? Clearly St. Augustine became lost in language because of

the surface parallels between temporal expressions and those that relate to physical objects.

He expected the former to behave like the latter, but unfortunately they are different, so we cannot meaningfully ask the same questions about them.

Philosophers have, through the years, focussed on the similarities between temporal and other expressions, frequently ignoring the vital differences:

- (1) Don't live in the past.
- (2) Don't live in Grahamstown.

Though metaphor is very strong, and this should be borne in mind, one can only ask "Where?" of the latter under normal circumstances, so (1) and (2) must be different. Augustine's referential theory of meaning led him to seek the referent of time, but, as Waismann says:

... we are trying to catch the shadows cast by the opacities of speech.

(1956, p.451).

Temporal wholes are not objective wholes, so we cannot measure them, despite the fact that we can think of them as measurable; we cannot compare them with one another. Although we are aware of time's passage, we have no common experience of measuring it because, like the specious present, it is relative to perceptual awareness.

We can agree on the order of events, on which event precedes which, but not on the intervals between them, without our adopted-standard clock-time. There is no one answer to the question: "What is now present?", because how wide it is depends on context, as do most things in language.

We must depart from metaphysical considerations such as these, in order to achieve a clear linguistic account of the relations of

time and tense.

Waismann (1950) asks why we should define time at all. We have no verbal circumlocution, so we must look at the different phrases in which the word occurs, link it with others, put it in different contexts and uses. Time is teachable but not definable, because language is not precise and exact, it has no precise rules governing the use of temporal phrases, it is subjective and deliberately vague. Yet it provides us with our only real source of data on the phenomenon of time, and has caused many misconceptions about it, one of which has come from an analogy between the language of time and that of space.

1.8 Time and Space

1.8.0 General

The fact that we can ask meaningful questions about space does not mean that we can ask the same about time. Spatial analogies seem often to have led to confusion, though initially they are helpful, because it is difficult to see time, an elusive concept at best, in terms of itself only; seeing it in terms of space makes it seem more manageable. There are many examples of apparent paradox because of spatial and temporal analogies.

1.8.1 The Point-Present

A point is that which occupies no space, and as the theory of infinite smallness poses problems for the mathematician, so now poses problems for the linguist, because in strict usage it would never be applicable, though in language it has an infinitely wide range of uses.

Because St. Augustine drew an exact analogy between a mathematical point and the now-moment, he was forced to say that time could not exist.

1.8.2 The Measurement of Time

Our problems of the length and measurement of time also come from the same spatial analogies: space can be, and is, measured in terms of time or motion, but time cannot be measured in terms of space.

With respect to movement in space, one can always say how fast (e.g. 5 feet per second) but not with respect to advancement through time. I find it difficult to imagine a second time scale to measure the flow of events in the first one, ad infinitum.

Why space is measurable is because it is more tangible or ostensible than time: a particular length, e.g. a foot, can be compared with another, because we only experience one at a time.

1.8.3 Spatial Metaphor

Smart (see Gale 1968, p.163-169) shows the origin of spatial metaphor in language. Our temporal language is highly metaphorical, we speak of the flow of time, of advancing through time, of watching time go by at a fast or slow rate, like water in a river.

The metaphors tend to consolidate the feeling that space and time are alike. But space is three-dimensional, with no intrinsic direction; time is one-dimensional, it does have intrinsic direction, and is what events (i.e. what happens to things) occur in.

Space is tangible and ostensible, time is not. A tensed event requires a communicator or conscious observer, but a thing can exist in space independently of any observer. One cannot be in two places at one time, but one can be in one place at two times, and two things can be in the same place at one time. We are free to orientate ourselves in space, but not in time.

There are obviously far more similarities between space and time than there are between space and tense, because time requires no

conscious observer, as tense does, and events can simply occur in it. Both time and space are continua in which we exist, but these continua are different in important ways.

We spatialize time in order to grasp it, but we should perhaps avoid this, because it is often misleading: space and time are very different, and as D.C. Williams urges, we must separate the two (in Gale 1968, p.98).

1.9 Tense as a universal

1.9.0 General

Is tense a language universal? It is evident that man's thoughts, beliefs and world views have been deeply influenced by the fact that, whether he likes it or not, we all exist in the same world, and that world exists in time. Views about time differ, but not the fact of time.

It seems to be a fact that time exists, whatever it may be, but does language necessarily reflect it? Is tense, as we know it in English, a linguistic universal?

1.9.1 Tense in English

Before deciding on the issue of universality, we must establish what tense is to speakers of English. As speakers of English we tend to associate any linguistic manifestation of time with the verb inflections, following a tradition established by the early grammars of Greek and Latin, where the verb was seen as the part of speech inflected for tense and aspect, among other things.

However, it is all too evident that almost all other parts of speech can carry temporal nuances; that is, verbs are not the only avenue through which temporal distinctions can be made manifest, and in actual fact, as Huang (1975) points out, there are languages with no distinction of tense in the verb at all, but rather on other

constituents.

Jespersen (1924) points out the temporal sequence in some nouns in English e.g. girl, fiancée, bride, wife, widow, as well as the use of nominal prefixes like ex, which could be equated with verbal inflections.

Adjectives like former or early also have temporal nuances. Similarly, ordering in conjunctions shows temporal sequence, e.g.

(1) He died and was buried.

versus

(2) He was buried and died.

Most important, it is the main function of temporal adverbs (e.g. today, yesterday) to disambiguate temporal reference.

Thus in English, tense is largely a matter of verbal inflection, but all parts of speech play their part in manifesting temporal reference. Other languages may be different.

Jespersen (1924, p.280) points out that Eskimo uses its nouns as tense-carriers, and they are inflected like our verbs e.g.:

puyok	smoke
puyothluk	what has been smoke (preterite)
puyoqkak	what will be smoke (gunpowder)

In Hausa, an African language, pronouns are inflected instead of verbs, nouns, or adjectives, in order to make tense distinctions. (Hodge 1963, p.114), e.g.

- (3) The spear hit the bull. (English)
- (4) Spear it-past hit the bull (Hausa equivalent)
- (5) The chief went (English)
- (6) Chief he-past go (Hausa equivalent)

Japanese uses its adjectives for the same purpose, as is evident in Bleiler's comment:

the Japanese adjective ... differs most widely from its English counterpart. It has tenses and moods, just like a verb.

(1963, p.63)

e.g.	<u>Basic stem</u>	<u>Present tense</u>	<u>Past tense</u>
red	aka	akai	akakatta
cold	samu	samui	samukatta

To think that temporal expressions are restricted to tensed verbs is like thinking that chess pieces must be of ivory. Time is undoubtedly a universal, and its linguistic manifestation, be it on verbs, nouns, adjectives, pronouns or conjunctions, is also a universal.

It is safer to put it that way than to say "tense is a linguistic universal", because tense carries the unfortunate connotation of verbal inflections; languages obviously have more than one way of manifesting temporal reference, and it is evident that English itself has other means besides verbs.

1.9.2 Whorf's Views

Benjamin Whorf (1956) disagreed with the point argued above, and therefore tries to disprove universality:

Every language is a vast pattern system, different from others, in which are culturally ordained the forms and categories by which the person not only communicates, but also analyses nature, notices or neglects types of relations and phenomena, channels his reasoning, and builds the house of his consciousness.

(1956, p.246).

He feels that the background language is not just a means of voicing opinions, but is itself the shaper thereof:

We dissect along lines laid down by our natural languages

(1956, p.208)

... the world is a kaleidoscopic flux of impressions which has to be organised by our minds. We cut up nature ... as we do, largely because we are parties in an agreement to organise it in this way, an agreement that holds through our speech community and is codified in the pattern of our language.

(1956, p.213).

His theory is one of linguistic relativity - that no individual is free to describe nature with absolute impartiality, he is constrained to set modes of interpretation even when he thinks himself most free. Whorf says tense is not a linguistic universal, and cites Hopi, an American Indian language, as an example of a language which has no tensed verbs, temporal adjectives, or any other device to refer to time. In Whorf's words:

after long and careful study and analysis, the Hopi language is seen to contain no words, grammatical forms, constructions or expressions that refer directly to "time" or past, present or future, or to enduring or lasting ... Hopi ... contains no reference to time, either explicit or implicit.

(1956, p.57-58).

However, Whorf admits that Hopi has a rich system of voice and aspect (nine of each) and in actual fact, past and present are factuals, future is generalised etc., so temporal reference is indirectly expressed in this way. As Whorf says:

at the same time, the Hopi language is capable of accounting for and describing correctly, and in a pragmatic and operative sense, all observable phenomena

of the universe.

(1956, p.58).

Surely then it is rather surprising that Whorf then denies that time is a universal. He himself has not been objective; our definitions are unavoidably language-dependent, and our language is neither logical nor precise and regular. Tense pervades most English word-classes, not only verbs and adjectives, as Whorf believed, and Hopi manifests time in its aspectual system and its duration nouns - words like flame and wave are verbs in Hopi.

In the same vein, Nootka, a language of Vancouver, has one class for all kinds of events, and these words are inflected for durational and temporal nuances, like our verbs, e.g. a house occurs / it houses.

When Whorf says:

Hopi can be considered a tenseless language.

(1956, p. 216).

he contradicts himself, because he goes on to say that it is a language which recognises psychological and durational time. Tense is just one of the manifestations of linguistic time, certainly not the only one, and time is a linguistic universal.

English could just as easily have distinguished fact (past and present) from expectation (future) and generalised laws - no distinction between past and present is really necessary, as long as time reference is indirectly made manifest.

I feel it is not legitimate to infer from a language's vocabulary and grammar how the speaker thereof perceives and conceives his universe in all respects. This is what Whorf has done. A learner of a language can never fully know how a native speaker looks at things.

Whorf's is the only argument of which I am aware, against time as a universal, and its apparent invalidity enables us to look at the

treatment and categorisation of time in English, upon the hypothesis that we are, indeed, dealing with a linguistic universal.

1.10 Some Features of Tense Systems

1.10.0 General

In this section I discuss the question of personal versus public time, the need for an axis of orientation, and the possible relations between events.

1.10.1 Personal versus Public Time

Personal time is subjective, different for every individual, man's measure of duration using his emotions as a clock; public time is the observation of the metric periodicity of natural phenomena, differing from culture to culture, but usually based on cosmic universals like the sun.

In science, time has no direction, and is a linear infinity, on a parallel with space. But we have a personal concept of time as a forward pointing linearity. We have developed a vocabulary of time words, fixed by public agreement, with some allowance for personal vagueness.

Our public time-words are those like month (time between two moons), day (one sun), minute, etc.; our personal time-words are imprecise substitutes, like moment or ages. It is interesting to note that in the early history of English, these words had far more definite boundaries than they have today, but these have slowly disintegrated, giving room for personal judgement as regards the amount of time involved.

A while can be anything from an era to a second, and words like now or presently originally had a very definite and restricted application, but are used today to mean not now but later. This phenomenon is evident in nearly all languages - the flexibility of words like

now is essential if communication is to be successful.

1.10.2 The Axis of Orientation

As there is a distinction between public and personal time, and the vocabulary belonging to each, so there is a difference between public and personal axes of orientation: the clear events of objective reality, like sunrise, points with no duration, are public axes of orientation, e.g. major cultural events like the birth of Christ or great wars. Some axes may be more restricted, e.g. births, marriages, and deaths within a family.

The prime axis of all speakers and tense systems is, as we have already seen, an event occurring inside the man himself - the act of perception -which is naturally intensely private.

Because acts of perception, recall, or anticipation, are not publicly observable, if the speaker wishes to use such an act as his axis of orientation, and wishes this fact to be known to others, he converts it immediately into what is undoubtedly the prime axis of all tense systems of languages: the act of speech, the utterances of words (i.e. language), because this is publicly observable. In other words speech itself is an axis.

1.10.3 Relations between Events

Observations of simultaneity and sequence need an axis of orientation to order the relations between events: they can be before, simultaneous with, or after the axis, hence the fact that we can remember them, perceive them or anticipate them.

Our vocabulary is divided accordingly, with words more or less synonymous with the three order relations, e.g. pre/ante, con, post. Events may follow each other with no intervening period (e.g. the earth's revolutions on its axis) or be separated by a time period (e.g. successive knocks), in which case duration is overlooked:

(1) A is before B.

gives one no indication of duration, unless we insert a word like long on a parallel with far in far east, where east is the axis, and far the measure of space.

Why we confuse time and tense is because we identify the axis with the measure unit; in actual fact, tense morphemes deal with orientation only.

1.11 Calendars

Calendars are good examples of public time: all public time intervals have a fixed length, infinite number, seriality, and no intervening intervals. The intervals are all fractions or multiples of each other, and all series are bi-directional.

Whenever an event as an axis of orientation is contained in a time interval (e.g. today in this week) all time intervals are definable in terms of each other, one being the axis, the others in relation to it.

If each interval is labelled to show its position in the series, and its order relation to the axis, a calendar results. A perfect calendar needs an infinite number of time intervals, each uniquely labelled, which is impossible in natural languages. So we compromise, naming only some intervals, and dividing them into axis-bound and position-bound intervals. Their labels show their position in a finite series, which can be repeated ad infinitum.

The Gregorian Calendar has three time units: year, month, and day. Years are axis- and position-bound; months and days seem to be position-bound, and the prime axis is the birth of Christ. So 12 BC can be analysed as follows:

C = axis
 B = order
 12 = position

and 3rd July simply means the third day of the seventh month.

Calendars like this are of little use, unless all their time intervals and finite interval series are axis-bound in terms of a second axis of orientation; i.e. the event inside the person using the calendar. We all have a personal calendar like the Gregorian one, but in the latter the axis of orientation is always the same interval, while our's moves through a series of intervals, and has a limited, not infinite, number of years. It is built on personal, not public time, with vague periods like now, past, present; so to define public time we must order two cosmic events and an event of observation as a frame of reference.

No understanding of the problems of time and tense is possible unless we realise that what is after, before, or simultaneous with, is only so in terms of ego's experiential observation or awareness of these relations (cf. 1.5.1).

The ego, by recalling and anticipating, converts sequence and simultaneity, the two possible order patterns in reality, into a construction with three points, and so locates self in time, and produces two referents for present: point present and extended present (cf. 1.6).

Because point present is not measurable in the experience of events by us, its duration is ignored in daily speech, and we simply treat it as the prime axis of orientation: the act of perception or inference.

1.12 Scalars, Vectors and Axes

Axes, order relations, intervals and measures are all integrated into a system of communication. W.E. Bull (1968) suggests an attractive hypothesis, in terms of scalars, vectors and the point present: the vectors give direction in terms of the axes of point present (PP).

Before is a minus vector (- V)

Simultaneously is neutral (0 V)

After is a plus vector (+ V)

The scalars limit the vector, fixing its extent in either direction. Examples of scalars are words like long, short, just etc. (e.g. long after).

No tense-system has an infinite number of morphemes, hence the vague and imprecise scalars of English (and other languages). So English, in Bull's view, has a scalar tense formula, evident in the following:

- (1) His arrival a long time ago.

<u>his arrival</u>	=	stem
<u>a long</u>	=	scalar
<u>time</u>	=	variable time interval
<u>ago</u>	=	minus vector and axis of orientation.

These concepts are also shown on the verb stem by morphemes or by other parts of speech (cf. 1.9.1). We have to identify which parts of each form are regularly expressed in verbal affixes, and which by other means.

It must be stressed that no Indo-European tense system deals with time itself, but with direction in relation to an axis. Identification of this with the variable time intervals is what causes the confusion between time and tense, two very different things.

The verbalization of the perception of an event acts as the axis (cf. 1.10.2) or PP of the tense system (we ignore the time between it and perception) and from this axis man can experience, recall, or anticipate an event, or contemplate it at a higher level of abstraction.

In other words, before an individual speaks, he must establish an order-relation between himself and the reported event. Tense

systems are unlike calendar systems, where the time interval is defined by its position in the series, and events are not position-bound, nor defined by a scalar.

(2) He came.

defines neither position of come in terms of other events in an objective series, nor shows the interval between the event and PP; all it says is that it is before PP, via the morpheme [əɪ], which gives the minus vector. Adverbs help to stress such vectors, e.g.:

(3) He came yesterday.

So in English we get our personal experience of time by observing events and seeing that the sequence of time may be seen as an interval between two events, or a total of events. (1 minute = 60 seconds). Our vector system is shown mainly by morphemes on the verb stem, though also on other parts of speech, with the basic structural features of the vector system being decided by events inside and outside man, and their three possible order relations.

Every act of man may be seen as an axis of orientation, at PP, and the three order potentials rigidly control what we can do, because we can contemplate reality and time only at PP, and time and all events are experienced serially in a future direction. Every act at PP takes time itself and therefore changes to a retrospective point or axis, RP, with ego at a new PP. Similarly a prospective point is AP, and we get an open system, with potentially infinite projectability, and complex problems of relativity:

..... R P ₂ — R P ₁ — P P — A P ₁ — A P ₂

English has three ordering symbols (+, 0, -), an axis point (P), which becomes a tense system by adding the four axes (PP, RP, AP, RAP), and a symbol (E) equivalent to any stem.

So E (PP 0 V) means: an event (E) simultaneous with (0 V) the present (PP), and it could be represented by:

(4) I write.

E (PP + V) = an event after point present. (e.g. I will write).

RP refers to a retrospective axis, AP refers to a prospective axis, and RAP refers to a retrospective-prospective axis. So:

E (RP O V) = an event simultaneous with a retrospective axis, e.g.

(5) I sang (while she played the piano).

E (RP + V) = an event after a retrospective axis, e.g.

(6) I would sing (after he had played the piano).

E (AP - V) = an event before a prospective axis, e.g.

(7) I will have sung (before she arrives).

E (RAP - V) = an event before a retrospective-prospective axis, e.g.

(8) I would have sung (if you hadn't interfered). etc.

Natural languages seem to have a practical limit: one can recall that one would recall that ... just so far. When ego operates with projected axes, complexity increases until meaning is lost, because it can only be conveyed in terms of one axis at a time (though the same event may be defined in many different ways, via different axes). Thus the axes of a language rarely exceed four in number, the fourth being RAP (Would have sung).

This results in twelve tense forms, capable of representing all possible order relations between all possible events and axes (see diagram overleaf). E and the order relations are constant, the axis is variable, with PP and RP being the main axes, AP and RAP projected respectively from each of them.

The system is based on relativity, with RP before PP, before AP; RAP is more complex because it may be before, simultaneous with, or after PP: in recalling, the act of recall is PP, and the event recalled is at RP; RP then becomes the prime axis in recollection, for anticipating AP, and PP becomes irrelevant (e.g. E (RAP - V)

would have sung).

Not even English, which has a very redundant system, has morphological equivalents for all the hypothetical forms, e.g. E (AP O V), E (AP + V), E (RAP + V) and E (RAP O V) have no morphological equivalents (see diagram).

There are, at most, one form each for AP and RAP respectively: future-perfect (E (AP - V) will have sung), and conditional (E (RAP - V) would have sung).

The English system is redundant in showing axes: the tense form has an element to show if it is oriented to PP or RP - i.e. an extra axis to show order. According to Bull, the English system is as follows:

-----|-----E(PP-V)-----E(PPOV)-----E(PP+V)-----
has sung sings will sing
-----|-----E(AP-V)-----E(APOV)-----E(AP+V)-----
will have sung ∅ ∅
|-----E(RP-V)-----E(RPOV)-----E(RP+V)-----
had sung sang would sing
-----|-----E(RAP-V)-----E(RAPOV)-----E(RAP+V)-----
would have sung ∅ ∅

stem	:	s__ng, sing.
minus vector	:	sung.
O vector	:	sings, sang.
plus vector	:	will, would.
PP	:	has, sings, will.
RP	:	had, sung, would.

Therefore, besides indicating aspect, auxilliary verbs show order. Languages with simplex systems survive and manage just as efficiently, because there is a difference between what man must do and what he may do. Time is the fourth coordinate, all events occur

in it, with a start, a middle, and an end. It is linear, with three possible order relations in terms of any point - these are the unavoidable facts that must be reflected. The options are as follows: we may construct an aspect, vector, or tensor system, or combine all three types, and theoretically multiply ad infinitum, thereby creating redundancy.

The redundant forms may be preserved as free variants, and may be used to convey unrelated information. English has taken advantage of its system to convey attitudes, ideas and information not really relevant to aspect or order. (See 3.6.5.)

1.13 Summary

No single approach to time and tense seems to be entirely satisfactory; the arguments from consciousness and change give us the continuity of time, those from agency give the directionality and modality of time. There are redundancies and problems in our uses of tenses because of their covert egocentricity - the force of the tensed sentence depends largely on the moment of its utterance, which makes tense parallel with persons in verbs.

One cannot describe the nature and function of a part without some knowledge of the whole; features of the aspect and vector systems must be familiar before we can define any specific tense, and till one sees that the English tense system deals with order and aspect, and not really with time, as such, one can neither find nor identify the axes at all.

A linguist's idea of the whole determines the number of morphemes he sees in the system, and one must realise that a tensor is meaningless without a vector, or else one will only recognise the tensor and not the axis indicator.

A tense system is part of a larger whole: the language - a system

of arbitrary vocal signals by means of which a social group cooperates. There is communication because of cooperation between speaker and hearer, especially in the tense system, to establish the axis. Many extra-linguistic factors are involved.

Theoretical linguistics becomes applied whenever objective reality and functions are used as classificatory criteria, as opposed to form; we usually start with form, and go on to form-classes, for a tentative classification of difference and identity; then we appeal to meaning, as distinct from function. In my opinion we should reverse the procedure. I shall try to show (Chapter 3) how the early grammarians became confused because of their dependence on form.

1.14 Conclusion

Chapter 1 represents an attempt to give a broad view of the more general issues involved in the topic "Time and Tense", in order to establish just how much we do not know, rather than how much we do know. Following chapters cannot hope to solve all of these problems - the most I can aspire to is a clarification of specific, limited areas, and clarification may be too strong a term.

CHAPTER II

TIME AND LOGIC: A BRIEF SURVEY

2.0 General

Chapter I was aimed at showing how complex the topic of time and tense is. Obviously, even were I qualified to do so, I cannot investigate all of the problems involved - philosophical, physical and linguistic, but, as 1.1 suggests, one cannot fully comprehend a part, without some understanding of the whole.

I shall focus, from Chapter three, on tense from a linguistic point of view, but before doing so, a brief look at the problems which the relation between time and tense poses to logicians seems desirable.

As I am not centrally concerned with logic, and as I have no pretensions to the status of temporal logician, in this chapter I shall simply touch upon areas of the subject which seem to me to be relevant to our general understanding of tense and time, and will not attempt a presentation of any given system, such as that of Rescher (1966) or Prior (1968).

The topics I deal with in this chapter will, I hope, be helpful as a background when I examine tense from a linguistic point of view.

2.1 Tenses and Truth Value

Thus far it is evident that time is a linguistic universal; in other words temporal reference is reflected in some way in every language. English uses tenses (and other means) primarily for this purpose.

However, many logicians exclude tense from their systems - in their view, the same proposition can be expressed now in one tense, now in another, with no change in the truth value of the proposition. Such logicians are not concerned with the different expressions of

one proposition, but with the features that these different expressions share, in order to preserve truth-functionality.

In this sense the tense of an utterance is not part of its meaning any more than the person of the verb is - it simply is not relevant. However, as far as the student of natural language is concerned, it cannot be denied that tenses do affect meaning, and

(1) I am ill

is very different from

(2) I was ill.

2.2 The Platonists

2.2.0 General

There is a basic philosophical distinction between Platonists and Nominalists. The former follow Plato in stressing that actual things are mere copies of transcendental ideas which are the objects of true knowledge; the latter maintain that there are no universal essences in reality, and that the mind can form no single concept corresponding to any universal or general term.

Leibnitz, Bradley and McTaggart are all Platonists. They are not concerned with tense, and disregard the tensed structure of expressions; they say that although we cannot have a language which is free of token-reflexives (e.g. tense and pronouns), we can "see through" them, and, in this sense, the main tense of an utterance does not constitute part of its meaning. As a result, most Platonic logicians study timeless propositions and relations, trying to overcome egocentricity (cf. 1.5.2) in order to get propositions, the meaning and truth-value of which are independent of context.

However, in my opinion as a mere student, once we talk timelessly about time, we are very likely to suffer from philosophical schizophrenia: on the one hand trying to purge our discourse of all

terms like now, past, future, and tenses, and on the other, feeling that we cannot do justice to our concept of time unless we refer to the fact that it is something we experience, and is very much a part of language. We have seen (1.1) that the passage from future, through present, to past, is the passage from non-truth-functionality to truth-functionality, and since the latter is of prime importance to logicians, they cannot do otherwise but admit the importance of time. As Lucas puts it:

We may be led to speak so timelessly about time that it ceases to be about time at all, and then to reintroduce on a new metaphysical level the time we had taken such pains to expel.

(1973, p.277).

He adds:

The uses of tenses is an affront to logicians. They lack a sense of time. Their study is of timeless relations that hold between timeless propositions. But since it is also a study of the most general features, characteristic of all discourse, including that about changing events, they are often tempted to freeze the variable flux of temporal phenomena into the rigid immobility of Platonic truth.... Logicians are natural Platonists, because they hope to overcome the original sin of their own utterance's egocentricity, and entertain propositions whose meaning and truth are entirely independent of context.

(1973, p.277).

Pythagoras, Iamblichus, and the fatalists are Platonists, since they argue that time is not really time, but is, and always has been, already fixed.

Again we return to the necessity of distinguishing between the two different sorts of "time", i.e. the difference between time and tense (cf. 1.3). Iamblichus, the Neoplatonist, made it a central tenet of his metaphysical system that there are two kinds of time: intellectual time, which contains the relations of before and after, and is indivisible, permanent, and stable; and sensible time (tense), which is changing, fleeting and unreal. As Damascius put it, intellectual time can be paralleled with the waters of a river (cf. 1.8.3), bearing spatial relations to each other, while sensible time is time in relation to one point (ego), with different waters passing it. It is a proposition of intellectual time that the Trojan war preceded the Peloponnesian war, forever, but in "sensible" time, these events are now past, were once present and future.

2.2.1 J.M. MacTaggart (see Gale, 1968)

The difference between the permanent, objective relations of earlier and later, and the fleeting, subjective relations of past, present and future, just as problematic in language, caused MacTaggart to conclude that time is unreal. His argument is as follows: positions in time are distinguished in two ways: either by the relation of "earlier than" or "later than", or by being either past, present or future. The former he calls the B-series, the latter the A-series.

Since distinctions of the first class are permanent, it might be thought that they were more objective, and more essential to the nature of time, than those of the second class. I believe, however, that this would be a mistake, and that the distinction of past, present and future is as essential to time as the distinction of earlier and later, while in a certain sense it may ... be regarded

as more fundamental than the distinction of earlier and later. And it is because the distinctions of past, present and future seem to me to be essential for time, that I regard time as unreal.

(See Gale, 1968, p.87).

In other words, in MacTaggart's view, we cannot predicate the terms past, present or future tenselessly of time-instants or events; we have to use tense, e.g.:

- (1) X is past.
- (2) X will be future.

The fact that tense can only be explained in terms of itself is viciously circular - an infinite regress. (cf. 1.3).

According to MacTaggart, tenses can be explicated only in terms of past, present and future, and therefore we must either proceed down an infinite regress, or allow that every temporal instant is both past, present and future, which is a patent contradiction.

According to Gale (1968), MacTaggart's reasoning is not acceptable: once we recognise the contextual dependence of past, present and future, and can explicate them as meaning before the moment of utterance, roughly simultaneous with the moment of utterance, and after the moment of utterance, then the contradiction disappears. Past, present and future are not absolute terms; it is true that every event and temporal instant is tenselessly past, present, and future, but, from different viewpoints. The fact that events and instants admit of all three terms is no more surprising than that the same place can be referred to, on different occasions, or by different people, as here, and there.

MacTaggart seems to be making the same mistake as Plato, when he extracted a contradiction from the fact that one and the same person can be called big, in comparison with a smaller one, and small,

in comparison with a bigger.

As F.P. Ramsey (in Gale, 1968) says, the above is no more a contradiction than the following:

(3) "I went to Granchester yesterday."

(4) "Oh, did you? I didn't."

It is only because MacTaggart thinks he ought to talk tenselessly about time that he cannot be content with the (in my view) acceptable conclusion that X either is present, will be past and was future, or is past, was present and future, or is future, and will be present and past.

Although one may not agree with MacTaggart's argument, his predicament is a very real one: he feels the pull of Platonism, but senses that time is essentially unplatonic. In actual fact, it seems we can develop a tense logic to accommodate as many iterations of tense options as we like, without an infinite regress; we must simply remember that it is a matter of point of view, or, in Bull's terms, of axes. (cf. 1.12).

2.3 The Egocentricity of Time in Logic

As 1.5.1 tried to show, time and its relation to persons as conscious beings and rational agents, is reinforced by firmly established linguistic habits; it is essentially unplatonic, despite the ideas of some modern philosophers, who seek to purge language of all personal pronouns, token-reflexives, and tense, in the interests of scientific objectivity.

A language with no token-reflexives has no anchorage in reality or experience - one must start somewhere, and it seems we cannot be non-egocentric in space or in time; a reference point is essential, and time's egocentricity is even more vital than that of space, because of our need to correlate the reference frame with the moment

of utterance.

Time and tense are intimately related to our lives, they cannot be impersonal, and though the Platonists can, if they insist, speak tenselessly of time (seeing tense as redundant) it is an unnatural artifice. The resulting utterances, with all temporal references explicit, so that the propositions are independent of the context of utterance, are supposedly timeless, omnitemporally true or false, even before they occur. As Lucas says:

... what we are considering ceases to be time if we do not allow that it is characteristically viewed from some viewpoint or other ... neither with time nor space can we achieve the ideal of non-egocentricity absolutely.

(1973, p.280).

The essential egocentricity of time is reflected in the ineliminability of tenses - we have no system of tenseless sentences for referring to dated events, although Quine has attempted to find them, calling them "eternal sentences".

2.4 Willard V. Quine

According to Quine, logic requires each statement to be true or false, once and for all, independent of time, and to achieve this one must render all verbs tenselessly and resort to explicit chronological descriptions when the need arises for temporal distinctions, because tense affects the truth-functionality of propositions.

(1965, p.5). Time reference may be ambiguous and the truth-value of a statement often varies with time, e.g.

(1) Peter Davis of Green Street, Grahamstown, is ill.

(2) The Japanese attacked Pearl Harbour.

In (1) the sentence is true at one time, false at another, concomitant with Peter's variations in health. (2) was false till 1942, after

which it was, and is, true.

In Quine's analysis, it is claimed that be is tenseless and that statements (by which he means propositions in the sense of standard logic) are to be thought of as involving tenseless verbs only; all temporal references which might normally be shown by the tense, or tacitly understood, are to be thought of as introduced by explicit reference to dates and periods of time.

In order to avoid ambiguities, translations of sometimes, never, and always, must, he says, be effected by expansions into at some time, at no time, and at every time, respectively, e.g.

(3) John is never ill: $\sim (\exists x) (x \text{ is a time, John is ill at } x)$.
i.e. it is false that there is an x such that x is a time and John is ill at x . This enables Quine to explain the following ambiguity:

(4) Tai always eats with chopsticks.

(5) $\sim (\exists x) (x \text{ is a time. } \sim \text{ Tai eats with chopsticks at } x.)$

or (6) $\sim (\exists x) (x \text{ is a time. Tai eats at } x. \sim \text{ Tai uses chopsticks at } x.)$

(5) implies that Tai is literally always eating, (6) that he is a dainty eater.

Quine's proposals can cope with great complexity in sentences, as is evident in his example:

(7) Once a salesman sells a radio to a man who hates radios,
he has mastered his trade.

which he explicates on page 93 of his Elementary Logic (1965).

Even so, Quine's analysis is not basically concerned with essentially simple sentences with ordinary simple tenses, like:

(8) I was going.

(9) John came.

What is the alternative? Obviously, to devise a tensed logic. As Lucas says, we can, if we insist, speak tenselessly of time, but we need to talk with caution. It is an artifice, sometimes legitimate, but always unnatural, and our natural locutions are liable to trip us up. We can, if we wish, make all our temporal, like all our spatial and personal, references explicit, so that our propositions are entirely independent of their context of utterance. We can entertain such propositions, and wonder whether they are timelessly true or false, and which of them timelessly entail which other ones. However we must not, in my view, regard these timeless propositions as omnitemporally true or false, and thus as already true or false even before the event in question.

... fatalism is a fallacy to which those who talk timelessly about time are peculiarly prone.

(Lucas, 1973, p.281).

2.5 Tensed Logics

2.5.0 General

There are several problems involved in the working out of a tensed logic. I shall briefly discuss a few of these.

2.5.1 Quantification and Chronological Realization

In a tensed logic, the variables stand for things, or substances (e.g. horse, table) and in a formula such as:

- (1) For some x, it was the case 40 years ago that x is a boy
in America.

it is assumed that most such individual variables have been, and will be, in existence for a limited time only, and that the individuals in existence at time A are different from those existing at other times. This is, as Prior (1968) observes, a matter of quantification and chronological realization.

According to A. Prior (1968) and N. Rescher (1966), the quantifiers operate over some specified domain of discourse, rather than over times. The question revolves around whether quantifiers are to be read as tensed or not.

Prior says that the following are the options:

a) have a tense operator (it will be the case that), followed by a quantifier (for some x) and then the proposition, so that the objects relevant to the verifications of a quantified proposition are in existence at the time of the operator, e.g.:

(2) It will be the case that, for some x, x is flying to Mars.

i.e. something existing at the time.

b) have a quantifier, then the operator, e.g.:

(3) For some x, it will be the case that ...

i.e. something now existing.

c) we might say that the above mean that something has existed, does, or will exist, so we can make it stronger, by using all objects, whether they exist now or not, as values for our variables, therefore needing an explicit statement of what we mean by something - which now exists, e.g.:

(4) For some x, x now exists, and it will be the case that ...

Nicholas Rescher (1966) also deals with this problem. Because of the difference between

(5) $(\exists x) Px$ - there now exists an x which P's.

There exists (at some time/tenselessly) an x which P's.

(6) $(\exists x) Px$ - all now-existing x's P.

All x's that exist (at some time) P.

he suggests the need for two types of quantifier:

(i) $(\exists x)$ for existentials, and $(\forall x)$ for universals, over times only.

(ii) $(\exists t^x)$ and $(\forall t^x)$ for temporally restricted existential and universal quantifiers over individuals, e.g.:

- (7) $(\exists t^x \ P x$: there exists an x at time t such that x P's at time t .

The tenseless type is simpler in logic, but if we only had present tense universal and existential quantifiers, then even if we wanted to allow neutral quantification over dates, we simply could not express certain propositions, such as:

- (8) All snows are white.

not only present, but past and future as well.

2.5.2 The Problem of Becoming

The tensed logic referred to in 2.5.1 is well developed, but according to Prior, it has several defects, especially in its idea of becoming and ceasing-to-be of individuals. Any tense-logic can only be provisional in character, and starting-to-be causes the logician serious problems, just as "absolute becoming" gives problems in philosophy (cf. 1.5).

As Prior says, everything starts from something else, it has antecedents, so how does one explain something like cell-division, where one thing becomes two? According to Rescher, the law of identity states that everything is the same individual as itself, and that if $x \equiv y$, then anything true of x is true of y . In addition, if x is now equivalent to y , anything true of x is true of y , not if x was once equivalent to y . A possible answer to this is to say that individuals are separate entities and never become anything else, i.e. if x becomes y and z , then $(y+z)$ are still x , and for every pair of such individuals, there is a third, which is the combined pair.

This seems to be a matter of events versus things: the above is about things; events are different. The successive phases of the

the history of x are not really part of x itself; x is one and the same thing, which, at one time does or undergoes one thing, and, at a different time, another thing.

2.5.3 The Problem of Future Referents

In the view of the logicians I have referred to, the future has no existence, so statements about things in the future have no referents, and so are really statements-to-be, because we cannot talk of the future in singular terms, only general terms. It seems that we must face up to the basic datum of experience: we live in a spread of future, present and past time, the future being the from, from which time seems to flow, the realm of the open, out of which man temporalizes and establishes himself meaningfully in time. The distinction between future and past is deeply entrenched within our conceptual system, as is evident from the following facts:

- a) There is no future parallel to trace or memory.
- b) We can talk of present acts "causing" the future, but not the past.
- c) We can act in order to falsify predictions, but not retrodictions.
- d) Predictions must be logically general, retrodictions may be singular as well as general.

The future is the realm of the possible, so has no identifiable individuals to which the subjects of predications may refer - such exist only in the present or past, and we can only pinpoint, never identify, future individuals because we cannot identify any individual before it begins to exist. Such is the view of Gale (1968). Hence the anomaly of:

(9) "A baby will be born in 10 years time."

(10) "Is this it?" (ten years later.)

As A. Prior (1968), C.S. Pierce (1933), G. Ryle (1954) and others show, statements about the future must be general, and

(11) John will go to Eton.

is really

(12) There will be some individual ...

Although there seems in such propositions to be a definite referent, it is not yet particular, but is only an assumption about an imaginary individual.

A great number of our basic concepts, e.g. causality, action, choice, deliberation, intention, memory, knowledge, truth, possibility and identification, all presuppose the asymmetry between past and future, the former closed, or fixed, the latter open, with real contingencies or possibilities as regards what might happen.

2.5.4 The Problem of Necessity and the Future

In Aristotle's view, propositions about the occurrence of events in the future are to be placed in a truth-status limbo, neither true nor false. There is a clear gradation from atemporal (e.g. $2 + 2 = 4$), omnitemporal (e.g. the moon revolves around the earth), present (e.g. I am now writing), past-oriented (e.g. a battle has occurred), to future-oriented propositions (e.g. a battle will take place tomorrow).

Lukasiewicz, Ammonius, Gale (1968) and Prior (1968) all share this view, saying that future propositions lack a "necessary" truth-status: to say that a proposition x cannot be determinately true or false is not to say that it cannot be either true or false, just that its truth-status is unknown.

In Aristotle's opinion, the future has a third, neutral or indeterminate truth-value, and does not lack one altogether. If one sees time as successive intervals (... -2, -1, 0, 1, 2 ...), one may class temporally definite propositions into those which are always true, those which are never true, and those which are indefinite

until they become either true or false, i.e. future contingent events, which may be chronologically definite. One must let the truth or falsity of the proposition rest on how things turn out at the relevant time, to avoid fatalism, and to preserve the logic of truth and falsity.

The future is open, the past is closed, and past events have been through the present, and, as Gale (1968) puts it, won their ontological diplomas while future events are in a limbo of mere possibility. Propositions do not change their truth-value over time, they only acquire it, changing modally with respect to the determinedness of inevitability of their assumption of this truth. According to Taylor (cf. Gale 1968, pp.221-232), to say that every proposition is true or false amounts to fatalism, but there is a difference between saying what will happen will happen, and what will happen must happen of necessity.

2.5.5 The Problem of Necessity and non-future

Because of the close relation between time and quantification, and time and modality

(13) Necessarily all x's P.

has three different interpretations, as Rescher shows:

(i) All men animate. i.e. at all times all existing men at the time animate at all times during their life-span.

(ii) All men breathe. i.e. all existing men at the time breathe at most of the time during their life-span.

(iii) All men die. i.e. all the men existing at the time die at some time during their life-span. (Rescher 1966, p.75 ff).

2.5.6 The Problem of the Temporal Equivocality of is, and the unchanging fact

It has been pointed out (cf. 1.5) that is can be atemporal,

have present reference, be omnitemporal, or transtemporal. Is can be a copula of identity, of existence, or a mere auxilliary, as well. Rescher (1966) claims that the sharp contrasts of is, from a chronological viewpoint, can be neutralized if the temporal reference is shifted from is to an explicit temporal designator, making the is atemporal, e.g.

(14) It was raining in London yesterday.

becomes

(15) Its raining in London yesterday is a fact.

(16) It is raining now.

becomes

(17) Its raining now is a fact.

Although yesterday and now are pseudo-dates (cf. 2.5.7), so we cannot say that they are explicit, the important point is that facts do not change.

2.5.7 Dates and Pseudo-dates

Dates in Rescher's system are temporally specific, definite (having a truth-value independent of the time of their assertion), and chronologically stable (e.g. 1st May 1977 A.D.), while pseudo-dates are not (e.g. today, now). We have two different dating procedures, depending on whether the basic reference-point is stable, or is a pseudo-date. If pseudo, all subsequent chronological specifiers will be pseudo, unavoidably, and this has vital implications for the logic thereof, because if they are all pseudo, the statements will be indefinite (i.e. their truth-value being dependent on the time of the assertion), and will therefore have a variable truth-value, e.g. if P = they will go tomorrow (indefinite) then

(18) Rt (P)

(P is realized at time t)

will always be indefinite, no matter how definite t is. But if P =

they went on 6th May 1971, the whole is always definite.

2.6 The Problem of Perspective

2.6.0 General

Tense quantifiers should not be seen as representing the view that at some time it was, or will be the case that, but rather as showing that we are regarding an event at some time, which we could specify. We consider events from various reference points as past, present or future, and it is the reference-point, not the date of utterance, that is usually important, because logic is concerned with what is invariant over different occasions of utterance.

2.6.1 Hans Reichenbach (1947)

As Hans Reichenbach shows, we can separate the different time perspectives that should make a difference to the proposition, from those that we must ignore. He developed an account of tensed discourse which allows for the ways in which an utterance's tense does and does not affect it; he distinguishes between the date of the event referred to, and the date of the utterance, and the date of the point of reference of discourse - similar to Bull's proposal. When

E = event
R = point of reference
S = utterance

the pluperfect

(1) They said that they had eaten on the way.

is E — R — S →

Posterior future is $\overline{S - R - E} \rightarrow$

Future perfect is $\overline{S - E - R} \rightarrow$ or $\overline{SE - R} \rightarrow$

Past future is $\overline{R - E - S} \rightarrow$ or $\overline{R - SE} \rightarrow$ or $\overline{R - S - E} \rightarrow$

(was going to)

Perfect is $\overline{E - SR} \rightarrow$



(I have come, referring to a present state consequent on a past event of arrival)

Aorist is $\overline{\text{ER} - \text{S}}$

(a past event described from a past point of view.)

This analysis allows us to distinguish the unvarying relation of temporality between reference point and event, from the variable relation between them and the date of utterance.

So the tense of an utterance depends on the context, and whether one uses past or future depends on whether the date of utterance is simultaneous with, before, or after the point of reference, and it varies systematically with the occurrence of the utterance. So

(2) Peter hit Sam.

may be true at one time, false at another, and

(3) There will be trouble in 1911.

changes to was after 1911. (cf. 2.4).

Whether one uses simple tenses or complex variants, depends on features of discourse, independent of the date of utterance. So we have:

(4) By the time he gets the letter, he will have decided.

(future perfect).

(5) Now that he has got the letter, he has decided. (perfect).

(6) By the time he had got the letter, he had decided.

(pluperfect).

This sentence (as represented by variants (4) to (6)) cannot be aorist or past future, because the date of deciding always precedes the date of the arrival of the letter, regardless of the moment of utterance.

2.6.2 Anthony Kenney (1963)

Kenney (1963) refines Reichenbach's analysis, taking into

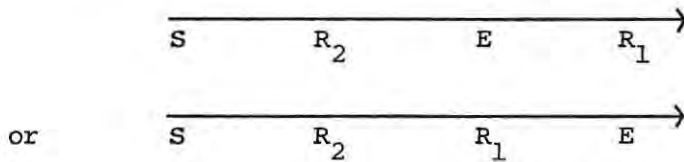
account the distinction between instants and intervals, further distinguishing between those intervals with definite end-points, and those specified only indefinitely. So he can explicate the different forces of different sorts of verb, e.g.

(7) I have loved her for 7 years. (I still love her now).

(8) I have built a house. (not still building it).

These are vital distinctions for the clarification of the different types of performance and activity that a person can undertake. So Reichenbach's analysis can also be extended to more complex cases, e.g.:

(9) I shall have been going to see John.



Although we can iterate tenses indefinitely, the resulting locutions eventually become so complex that the system seems to become unworkable (because of problems like: is E before or after R_1 ?) unless we can supplement our terms with definite dates.

2.7 Time versus Tense

Having examined various views on time and tense (by no means all, for my space and ability are limited), a number of facts have become evident: time and tense are far more complex than they appear to be at first sight, and they must be distinguished from each other. Such a distinction helps to clarify apparent anomalies, such as the "movement" of time, the non-existent present, the "unreality" of time, etc.

Time is a matter for philosophers and physicists. It can be treated with absolute precision, independent of persons, language or experience; tense is different: it undeniably involves the speakers of the language and is an intrinsic feature of all languages. It

requires focus on contexts of language use and language-users, because it is part of daily life, personal experience, relativity and changeability.

Once one recognises that tense has these features, one is prepared for inconsistencies, apparent "gaps" in the language system, and for what seem like rather strange conditions of use of various tenses.

2.8 Summary

In Chapter 2 I have briefly discussed some of the problems associated with tenses and truth value, egocentricity, quantification, becoming, and perspective - all from the point of view of the logician.

It has been the aim of Chapters 1 and 2 to demonstrate the vagueness and apparent inconsistencies of time and tense. Bull insists that one cannot understand a part without some knowledge of the whole. Obviously there are far more ideas on tense logic than appear in this chapter, and I am very much a layman in these matters. I can simply hope that I have succeeded in hinting at the vastness of the whole, for the remainder of this thesis will focus on a mere part : the grammatical part, known as tense.

CHAPTER III

TENSE BEFORE THE TRANSFORMATIONALIST PERIOD

3.0 General

Our inherited grammatical categories were shaped before a clear distinction had been made between time and tense, and between formal semantic criteria; parts of speech were classified and defined mainly in terms of their meanings.

The early writers found it very difficult to relate their natural awareness of time to the network of meanings carried by the grammatical tense forms of verbs. They found it difficult to clarify "time" alone as we have seen (cf. Chapter 1), not to mention its somewhat haphazard manifestation in language.

3.1 Tense in classical grammatical studies

According to Epicureus (Diogenes Laertes (IX 52)) tense was first distinguished as a feature of grammar by Protagoras; but the distinction is actually suggested as early as Plato (Parmenides 151E, 156A, Sophist 262D) insofar as it is implicit in any consideration of time past, present, and future. Aristotle (De Interpretatione 16B) was more explicit, but he too was thinking of different kinds of time, and not really the varying form of the verb.

The tradition was established that it is only the verb form which carries tense, and no other part of speech (cf. 1.9.1). It seems to have been the Stoics who first recognized that the verb actually expresses other features beside time, according to Robins (1967, pp.35-36).

Dionysius Thrax (p.53) suggests that there are three tenses (he fails to define what he means by tense) - past, present and future, with a sub-division of past into four: aorist, perfect, imperfect,

and pluperfect, which gives a total of six tenses.

Priscian defines tense as:

... an accident of the verb, designed for the expression of both time and completeness of action.

(viii, 38, p.406)

which is vaguely, but very tentatively, the modern idea of aspect, though not really an advance on the ideas of the Stoics.

The formal characteristics of words were generally treated as features which it was necessary to isolate and clarify; but not as defining characteristics of word classes. Mood and conjugation were the only characteristics ascribed to one part of speech only, and tense came to be ascribed to verbs and participles. Mood, conjugation and tense were called accidents; the term accident is, in my view, very apt, being a blanket expression for all features of words which had not been used in determining the parts of speech. Few grammarians ever define the word's meaning, but Quintillian's definition is rather amusing:

... accidents are those features (especially of the verb) in which mistakes are made, viz. voice, tense and person.

(Quintillian 1, V, 41).

In general, tense appears to have presented no real difficulty to the early Greek and Latin grammarians; they assumed that there were naturally three basic tenses, parallel with their intuitive sense of time: past, present and future.

3.2 The treatment of tense in English between 1500 and 1800

(Note: Grammars written between 1500 and 1800 are not listed in the select bibliography. They are contained in Appendix II.)

3.2.0 General

The array of tenses in Greek and Latin suggested authoritatively that English should have a similar number. As soon as the

first writers on grammar in English distinguished tense, a feature of words, from time, a feature of consciousness, however, they were led to conclude that English has not even three tenses, but two (e.g. Wallis 1687, Priestley 1762, Corbet 1784) - present and past.

But if there are three distinct times, how can there possibly be fewer tenses? The pull of tradition was strong, and it was only because the formal differences between Latin and English are obvious, that English grammarians managed to break away from it.

Charlestone (1941) reviews grammars written from 1685 to 1765 mainly in Latin or based on Latin, but about English, and suggests that the process was like pouring new wine into old bottles: it simply does not fit. Those who wrote in English had the additional problem of finding a completely new terminology.

There were many grammars written during this period, each grammarian expressing a slightly different viewpoint, or using slightly different terminology. The ultimate source of confusion lay in the fact that grammarians used different criteria in their treatment of tenses.

If tense is seen as a one-word, finite inflected form, there are two tenses (e.g. loves and loved), but if it is seen as time, there are three, and if the auxiliaries are included, there are even more. Very few grammarians of the time actually distinguish between time and tense, nor do they see that the same tense may be used to refer to different time spheres, or to take over the function of other tenses, not to mention the vital dependence of tense on context.

Few define tense, and Brightland (1711) went so far as to say that the term tense was "barbarous". Tense names were generally adopted from Latin, and the differences between shall and will, perfect and imperfect, etc. puzzled these grammarians sorely.

The confusion is aptly exemplified by an incident in the early

eighteenth century: three grammarians published grammars in quick succession, the last being Greenwood (1711). This provoked the ire of an anonymous critic, who rebuked Greenwood for adding yet another grammar,

... since they are now in the mode...

[to the]

... inundation of new grammars, without any improvement...

[he adds that]

... there is scarce a pedagogue in town, but is making an essay that way.

(Bellum Grammaticale or Reflections on the three English Grammars published in or about a year last past 1712).

Perhaps this attack had the desired effect, for there were almost no new grammars until 1730, and relatively few thereafter.

3.2.1 Classification of the grammars of 1500 to 1800

I shall briefly discuss in this section, a six-way classification of grammars written between 1500 and 1800, as suggested by Michael (1970).

3.2.2 The Latin System

Lily (1486-1523) seems to have been the first to use the Latin system for an English grammar, on English accidence and syntax (date unknown). His analysis, based on the five-tense system of Donatus and Priscian, formed the basis of thirteen grammars by independent authors.

3.2.3 The System based on intuitive temporal divisions

A total of 58 grammarians were guided, in their analyses of tense, by the natural division of time into three: past, present and future, giving a three tense system. They confused time with tense. Some of the stricter authors have extensive subdivisions of each of the three tenses, an example being Samuel Saxon, who says:

there are three tenses, past, present and future, which are all the times that a person or thing can do or suffer ... past is perfect and comprises: I read / did / have / was / have been ...

(1737, p.56).

Others give no examples, or ignore the compound forms, as does Charles Johnson (6th ed., 1779) who gives I danced as the only example of the past.

A number of the grammarians of this group tended to over-simplify because they were writing elementary grammars for pupils not learning Latin, so were free to ignore Latin tenses. Many were influenced by a vernacular prejudice and rejected the term tense, as part of Latin grammar, preferring time as the English equivalent.

The confusion between the real divisions of time, and the verb forms which reflect them is evident in the writings of Daniel Pope, who dithers between three tenses and none at all; he writes:

... I am particularly against the use of tenses in verbs and also of cases in names in the English language ... experience has convinced me that these methods only belabour the language to no purpose, calculated only to tease and perplex.

(1790, p.22).

So he rejects tenses in favour of time, and goes so far as to say that will give is not a future of give, but only a form of the future verb will give !

3.2.4 The System based on Formal Criteria

Grammarians who based their analyses on formal criteria saw two real tenses - past and present. Examples are John Wallis (1687), Joseph Priestley (1762) and James Corbet (1784). As Priestley

said:

... it seems wrong to confound ... inflections either with grammatical uses of combinations of words, of the order thereof, or of the words which express relations and which are equivalent to inflections in other languages... we have no more business with a future tense in our language than we have with the whole system of Latin moods and tenses, because we have no modifications of our verbs to correspond with it.

(1762). (cf. Michael 1970, p.446)

He does not recognize the subjunctive as a tense, and tries to classify compound forms by two criteria: the form of the main verb, and the number of auxiliaries; as a result he is overwhelmed by the richness of English verb forms, and cannot retain his two tenses alone. He virtually admits (1762) that a discussion of tense is impossible because the diversity of practices among languages is too great.

Others simply missed the point. Joseph Aiken says:

We have only two times: present and preterite....

All the rest of the tenses are supplied by auxiliary verbs.

(1693, p.10).

John Hornsey (1793, p.30) said desperately that most grammars propose five tenses; it is more useful to an English scholar to have three tenses but that English strictly has only two tenses!

3.2.5 The System based on Complete versus Incomplete Action

The criterion of complete versus incomplete action, as adopted by William Grocyn from M. Terentius Varro (De Lingua Latina, Books V-X), is important because by its distinction between perfect (complete) and imperfect (incomplete), it avoided the division of past into imperfect, perfect and pluperfect, as it exists in most other analyses.

Aspect superceded time, and have loved was now seen as present, not past. At least twenty-three grammarians adopted this system (one of the most fruitful), among them James Greenwood (1711), William Laughton (1734), Daniel Turner (1739), Daniel Farro (1754) and Robert Lowth (1762).

3.2.6 The System based on Three Times, Completeness and Definiteness

A number of grammarians based their analyses of tense on the three-fold distinction between:

- a) time as past, present, or future.
- b) time of action as definite or indefinite.
- c) action as complete or incomplete.

They gave systematic empirical focus to the English verb forms, and Christopher Cooper (1685) first recognized the importance of the progressive, and repudiated the Latin scheme for English. His system was as follows:

Present Indefinite	<u>am loving</u>
Present Definite	<u>have been loving</u>
Preterite Absolute	<u>was loving</u>
Preterite Destinatum	<u>had been loving</u>
Future Declarative	<u>shall be loving</u>
Future Promissive	<u>will be loving</u>

This was the first really full attempt at a symmetrical classification strongly based on the "signs" of the tenses.

Harris (1751), basing his analysis on Cooper's arrived at the following system, which influenced a great many writers:

Aorist of	Present	<u>love</u>
	Past	<u>loved</u>
	Future	<u>shall/will love</u>

Inceptive of	Present	<u>am going to love</u>
	Past	<u>was going/starting to love</u>
	Future	<u>shall be going/starting to love</u>
Extended of	Present	<u>am loving</u>
	Past	<u>was loving</u>
	Future	<u>shall be loving</u>
Completive	Present	<u>have loved</u>
	Past	<u>had loved</u>
	Future	<u>shall have loved</u>

Although Harris says that to be is a latent part of every verb, his tense scheme is not distorted by logic as a result, and respects the facts of English. He saw all the verb forms as tenses, and tense was felt to be, fundamentally, the expression of time.

John Dalton (1801) is the only grammarian who adopts Harris's categorization in toto; but Lowth (1762), William Perry (1774-6), and Joshua Storey (1778) all used it, leaving out the Inceptives.

3.2.7 The System based on Logical Criteria

Grammarians who based their analyses on logical criteria obtained very different results from the preceding groups. For example, John Wilkins (1668) writes not only for English, but for a universal language and he says every verb has an implicit be expressing the time of the action, and an adjective to express

... the state of the Person or Subject ...

[He adds]:

... this is to endow both copula and adjective with tense.

(1668, p.303).

not verbs alone. He establishes a system of twenty-seven tenses, logical constructions with little apparent relevance to English.

Other writers in this group, for example Rowland Jones (1768) and J. Haywood (1800), try to fuse Indicative and Subjunctive into one mood. In the case of Jones, the preliminary argument and subsequent illustrations are, to my mind, incomprehensible. He maintains:

Tho' present, past and future seem to be necessary expressions, according to our present mode of conception, yet they are not in reality any representation of time, but of our manner of dividing or reckoning the changes of motions or number of actions in extension, which in the eternal state of spirits, or perhaps in a vacuum, might be deemed as one entire action or the present tense.

(1768, p.40-41).

3.2.8 Conclusion

Michael (1970) classified 248 grammars, incorporating 229 tense schemes, into six main groups (3.2.2. - 3.2.7 above). Of these, 150 do not adopt the Latin system, though all were influenced by it; broadly, those with five or more tenses were, in Michael's view, accepting Latin, with the exception of Harris (1751), Lowth (1762) and Beattie (1788), whose tenses were based on new criteria, related to English.

On the whole, development in tense is uneven and slight, and the most important step was not the switch from Latin to English, I feel, but the careful empiricism, evident in Harris (1751), Beattie and Fogg (1792-6), with Harris undoubtedly being the most important, with his focus on aspect, and his realization that verbs express more than simply time.

3.3 Tense in the Twentieth Century

3.3.0 General

In the nineteenth century the number of new grammars diminished, and people were generally content to accept what had already been written. The twentieth century brought with it a resurgence of interest, and it is in this century that the most important developments have taken place, in my opinion, although they have been slow.

3.3.1 1900 to 1940 General

From 1900 to 1940 a number of grammars were written, all preceding the major "structuralist" era, which lasted from about 1940 to 1960, though the boundaries are naturally vague.

Most of the works by Sweet (1900), Poutsma (1904-28), Curme (1931), Kruisinga (1931-2), Onions (1932), Johnson (1936), and Jespersen (1909-49) (dates indicate years of writing activity), are generally considered to be "notional" in their methodological procedures (cf. Nida 1943; 1960, pp.12-39), i.e. the scholars

... use meaning as the basis for their grammatical
classifications ...

(Allen quoting Nida 1966, p.41).

What is important is that grammarians like Jespersen placed absolutely no restrictions on the kind of evidence they used, and analyses were apt to become increasingly broad, unsystematic, and unreliable as a result, as Nida points out.

Writers of the 1900 to 1940 period belonged to the school which preceded the structuralists (one of whom was Nida), and the latter learned from their mistakes: they had attempted too much, wanting to record all their intuitions about the grammatical aspects of the language, hence the structuralists' search for formal criteria, in

order to get a single view of the data, by basing descriptive analyses on the more formal grounds of syntactic criteria.

Nida criticized Jespersen for thinking:

... that a descriptive grammar should be explanatory and interpretive, indicating not only what constructions occur, but also why such constructions occur, and why such constructions have certain forms. It is this attempt to answer the "why's" of syntax (before the "what's") which has given rise to so many useless and erroneous speculations.

(as quoted by Allan 1966, p.42).

3.3.2 Jespersen

An examination of Jespersen's works shows that Nida's criticisms are valid, to a certain extent. However, in view of the era in which he wrote, he is clearly worthy of the highest admiration, and what he says about tenses is constructive.

Jespersen rejects the Latin system of three tenses, each in relation to some definite point, as exemplified by the following:

	<u>Present</u>	<u>Past</u>	<u>Future</u>
<u>Present</u>	scribo	scripsi	<u>scribam</u>
<u>Past</u>	scribebam	scripseram	scripturus eram
<u>Future</u>	<u>scribam</u>	scripsero	scripturus ero

His reason for rejection is the duplication of scribam and the shared meaning of scripsi and scribebam. As a result, he arrives at a seven tense system, for which he claims universality (1924, pp.254-89; cf. Allan 1966, p.2).

before past past after past present before future future after future
 / / / / / / /

This system is the first of its type to be suggested, and in my view, it deserves recognition for the genius it shows. As is to be

expected, Jespersen battles with the problem of now, the indivisible point with no duration, the ever-fleeting boundary between past and future, and tries unsuccessfully to reconcile this with his experiential awareness that it does have duration.

By examining Jespersen's treatment of the present tense alone, one can see clearly the extent to which meaning is the basis of his classification:

... the present tense is first used about present time-
in the strict sense a point without any dimension the
present has little practical value, and in the practise
of all languages "now" means a time with appreciable
duration, the length of which varies greatly according
to circumstances, the only thing required being that the
theoretical 0-point falls within the period alluded to.

(1924, p.17).

After giving examples of this, he gives particular meanings of the present:

... to express one's feelings at what is happening, or
has just happened, the present tense is usually employed:
Can you come? That's splendid! Has he arrived? Yes!
That's capital!

(1924, p.19).

[and later]

... next, the present tense is used in speaking of the
past. This is the case of the dramatic present
(generally referred to as historic present) which is
pretty frequent in connected narrative; the speaker,
as it were, forgets all about time, and imagines or
recalls what he is recounting, as vividly as if it

were now present before his eyes.

(1924, p.19).

As William Diver (1963) says:

In practise he (Jespersen) admits different values for the same form, and to some extent, though not consistently, indicates the element in the context that is responsible for the variation in meaning.

(1963, p.141).

Jespersen himself says:

This faculty of using one and the same form with different values, while the context shows unmistakeably what part of speech is meant, is one of the most characteristic traits of English.

(1931, p.230).

However, his semantic and syntactic classifications are not absolute, almost none of his definitions are free from counter-examples, and his work is an open-ended attempt to record all the uses of the various tense forms in English, with particular emphasis on their function and meaning in language. As Diver (1963) puts it, his analyses are as complete as his ability to call examples to mind, and as valid as the degree to which the claims he makes for the meaning holds.

Other grammars of this period share the same faults, and obviously before any real progress could be made, a thorough analysis of the forms in the syntax was essential: the scope of the study discussed under 3.3.1 was far too broad, and had to be narrowed down, at least till the forms could be clearly understood and seen as some sort of system.

3.3.3 The Transition from Notional to Structural Grammars

Johnson (1936) saw that none of the grammatical categories

is perhaps less understood or more loosely defined than tense, and he blamed the confusion on the failure to distinguish between form and significance, thereby providing the starting-point for structuralists, with their focus on form.

As Johnson puts it, grammatical form is one thing, significance another, and the conventional designation of a form does not always agree with its meaning. He says:

... by tense form will here be meant the verb form only so far as this expresses a definite limitation of the action, and by tense significance what is usually regarded as the primary signification of 'tense' form, a limitation of the action involving time.

(1936, p.9).

This is perhaps vague and circular, but it establishes a focus of study for his successors.

Johnson also examines the problem of relating time to tense: because tense is based on difference with respect to time, one must understand time, an ultimate reality and universal fact of experience. In trying to do so, he is drawn into inevitable analogy with space, and other philosophical problems. He says:

... time is some difference, relative to which a movement in space is made possible.

(1936, p.11).

and that differences with respect to time are differences within time with respect to positions in time, vague because there cannot be a tense for every possible position. Tense form is an ambiguous index of local position in time, relative, because of the variable basis of reference, the constant factor being the act of predication, of using the tense form. According to Johnson:

... tense significance is ... the relative position of the time of action and the time of the act of predication.

(1936, p.23).

i.e. time in relation to speaker, in terms of past, present and future.

Johnson concludes that present time is:

... the time, in the order of experience, of that part of the sum total of events experienced by a given subject which at a given time is in the temporal field of experience of the given subject.

(1936, p.55).

In recognizing that grammatical time is not restricted to the speaker's private temporal world, but is the temporal direction of action for the speaker, the relation of one time to another, at the objective time of predication, Johnson sees that it is only insofar as the time of an act of predication can be equated with the speaker's time, that it can be the basis of grammatical time, i.e. the speaker's private, subjective position in time, as seen by him, is the unity to which he ultimately relates the time of action, and it varies with the particular conceptual system, hence the need to consider the total grammatical situation of the speaker.

It is evident that these theories ultimately provide the basis for Bull's system of Axes (cf. 1.12). This is even clearer when one looks at the actual system he provides: he says time past and future are, like present, seen as primary or simple tenses, the local time of a temporal fact, viewed simply in grammatical temporal relation to the grammatical time of the speaker: the past having happened, the future yet to occur. For the secondary tenses, it is time that is "conceptually" past or future, relative to the speaker's "conceived" present (which may be past or future), i.e. a time in relation to

which a different time is past or future - Bull's E (RAP O V),
E (RAP + V) etc. (cf. 1.12).

So, in Johnson's view, the general scheme of grammatical times, as comprehending the position of reference as well as times of action, is the primary past, present and future, or past at a past present, future at a past present, future present, past at future present, and future at future present. All these times are found in English and other languages, except "future of future" which, though possible, is rare in speech. The secondary times of future are rarer than those of past, because, according to Johnson, past is more immediately linked with experience, while future is a matter of imagination.

Theoretically, he says, there can be no difference as to number and general meanings, between past and future times, and the number of grammatical times is supposedly infinite - one could have tertiary relations too, i.e. past at past at past (a time which is past in relation to a present which is past in relation to a past present).

Not only are these ideas forerunners of Bull's (1968), but also of McCawley (1971), Seuren (1974) and others at a much later date.

He says:

In the same way ... the scheme of grammatical times may be expanded to include a quaternary and any succeeding order of times of the action.

(1936, p.94).

and to ask how many is futile,

... the number of these times being determined by our need of them, and ... limited only by our mental capacity as well as by the linguistic means - for making them.

(1936, p.95).

He seems to have an unconscious awareness of what was to become known

as the distinction between deep and surface structure, but it is somewhat vague.

However, the grammatical world was not ready for Johnson's type of thinking. They first wanted absolute precision in their syntactic analyses, and they focussed on his recommendation, early in the book, to separate form from meaning. A new era began, the structuralist era, in which the focus fell almost entirely on form, to the exclusion of meaning.

3.4 The Structuralists

3.4.0 General

It seems perfectly obvious to the ordinary speaker of language that meaning is a central and crucial element in his linguistic activity, and that no account of his language which ignores this vital factor can possibly be adequate. This was obviously the view of the grammarians in the preceding section (cf. 3.3). But while most scientific linguists also have acknowledged, in passing, the general importance of the semantic aspect of language, meaning has come to be widely regarded as a legitimate object of systematic interest only within the past decade. As Howard Maclay (1971) says:

... most linguists (in the mid 50's) tended to regard a concern with meaning as evidence of a certain soft-headedness and lack of genuine scientific commitment.

(1971, p.157).

They saw the role of semantics as marginal at best, tried to exclude it from linguistics, in an attempt to constrain the scope of linguistic theories in a way that would permit linguists to reach definite, though limited goals, because they had seen the confusion wrought by a focus on meaning before form had fully been understood.

Bloomfield (1935) and Harris (1955) are perfect examples of structuralists, their grammatical model having several different levels of analysis, each very definitely separate. The primary input was a body of observable linguistic data of phonetically transcribed utterances plus the native speaker's judgements as to the sameness and difference of pairs of words, phrases and sentences. The data was processed by explicit methods of analysis to achieve an identification and classification of higher categories, e.g. phonemes and morphemes.

The method had a strong linear directionality away from the primary data, so the input of each level came entirely from the preceding level, and the aim was purely classificatory or taxonomic, all operations being based on the notion of formal distribution, i.e. the list of immediate environments, defined by an element's cooccurrence with other elements of the same type. Everything is based on contrast and substitution, the functionally important units being identified by contrastive and complementary distribution.

The rejection of meaning became even more complete in later works, the most extreme being Bloch (1947), who eliminated the human informant as judge, and proposed that the input for linguistic analysis must consist of nothing more than the accurate recording of utterances.

A consequence of restricting linguistics to purely formal matters was an extreme narrowness of focus on the utterances of a language, independent of any propositions of human language users. The external and internal stimuli acting on a speaker were placed outside of linguistics, and all other, perhaps more interesting, aspects of human speakers were excluded as well.

Further, the results of a linguistic analysis were not taken to be relevant to an understanding of the capacities and fundamental

characteristics of human beings. The independence and methodological priority of form over meaning was clearly affirmed, and this assumption that form is independent may be regarded as one of the central concepts of linguistic theory at that time.

3.4.1 Examples of Structuralists

3.4.2 Fries (1952) and Hill (1958)

Fries (1952) provides an example of structuralist writing with his attempt to base his analysis on the more formal grounds of syntactic criteria, where form-classes are determined by the syntactic environment in which their members occur. Hill's study (1958) is perhaps the classic example of this sort of frame analysis, making the distinction between verbs which can take a verbal complement without to (e.g. can) and those which need to (e.g. want). He sets up the following frame:

Type A

I can (F1)

He can (F2) go (F1 .. infinitive)

I could (F3)

Type A2

I want (F1)

He wants (F2) to go (F1 .. infinitive)

I wanted (F3)

(1958, p.191).

On the basis of this sort of analysis, Hill and other structuralists classify will as a modal, and deny it status as a marker of tense, because will, like can, do, may, shall and must, does not take to in the infinitive complement, and takes the negative suffix n't (cf. Hill 1958, p.189 ff).

Having determined the syntactic classification of modal auxil-

liaries he makes a distinction between the proper area of syntax versus the "improper" area of semantics. He aptly summarizes his analysis:

... the description we have given ... has been formal throughout, with no attention to meaning and function.
(1958, p.205).

After the formal analysis, one can try to determine semantic features of a form by testing it in syntactic frames, says Hill. He does this with the progressive, thereby establishing a primary semantic component for the form - against his avowed principles really, but meaning is bound to creep back.

Hill says:

Our usual method of analysis ... [is] that of finding a meaningful element in the sentence which requires one of these constructions, and assigning components in accordance with such requirements.

(1958, p.214).

Hill is not generally criticized for his methodology, only for the detail of his analysis (cf. Diver 1963, p.148-53; Allen 1966, p.69-71).

Diver (1958) says of Hill that he is different because he sets up a formal procedure (syntactic frame) as a guide to isolate meanings, ... in describing the meaning and function of verb phrases ... limit themselves to those which have some structure.

(Diver 1958, ch.12).

e.g. with the exclusive form of will there is no syntactic structure in which will must inevitably occur, whereas there are cases of obligatory past, so he would say it (will) has no structural importance.

The forms to be considered are chosen, and their syntactic form gives the clues about their meaning. An example of his frames is:

he _____ every day (habitual)

he _____ right now (non-habitual, non-past)

These, however, do not cover all the uses, e.g.

(1) I am always needing money (habitual)

Also, there is no regular correspondence between habitual and non-habitual meaning, and the formal difference, as Hill suggests, so his approach obviously has its drawbacks.

3.4.3 Twaddell (1960)

Twaddell tries to extend Hill's analysis, giving an overall system of the unmodified form of the verb, with four modifiers that can combine freely with each other on both formal and semantic levels. He claims that his modification system is non-contrastive, not constituting a semantic system because the absence of one modification does not deny the grammatical meaning its presence signifies. Again the reincorporation of meaning is evident.

The first modification he proposes is Zero modification, which is just the verb stem, with no semantic modifications besides the semantic content of the verb, and no grammatical meaning beyond "verb". It is compatible, he says, with any overt chronological meaning in the sentence or situation - future, contemporary, past, habitual, eternal, etc., i.e. present "means" no one of the meanings it may carry.

When one examines this critically, one finds that only the historical present takes references to past, and all the rest only take non-past or "timeless" references. Historical present is rare, and is not compatible with past time indicators (e.g. ago, last week); there may be arguments that a timeless statement actually

refers to past, but timeless means "not involving any time factor", where one cannot insert any temporal adverb, unlike neutral with respect to time, which is compatible with all times.

The present is obviously not compatible with all times, it just happens to have been used to show timelessness, and so has a dual function.

Twaddell's Modifications I and II seem acceptable, but not, in my view, his Modification III, be + ing, which he says has the "meaning" of limited duration, and is versatile because it interacts with all the other modifications. Twaddell never goes so far as to explain what he means by "limited", and he is also forced to allow semantics into his analysis, because he finds it necessary to provide a lexico-semantic classification of verbs themselves, which carry and affect the meanings of modifications.

His definitions, where testable, seem not to fit the data; often the assigned meanings seem to come from context and not grammatical form. Ota (1963) is dissatisfied with Twaddell's analysis as a result; in his opinion, if Twaddell had focussed on a few linguistic facts, he would have seen that the numerical distribution of simple past versus present is quite different from that of progressive versus simple tenses; the numbers show that both modifications Zero and I are basic, while II and III are derivative, or secondary. This is corroborated by the structural devices actually used to manifest each modification - only II and III have syntactic representation (Zero has nothing, I has a morpheme), and the semantic importance of this structural difference is that categories having single word names are more easily codable than those named with a phrase.

... the length of a verbal expression is the index of its frequency in speech.

(Brown, 1963, p.235).

Structurally Twaddell's four modifications can cooccur, e.g.

(2) He had been eating

so Twaddell concludes that the grammatical meanings of the four must be compatible, and non-contrastive; but structural compatibility does not guarantee semantic compatibility by any means; more attention to the facts of the language shows the defects of Twaddell's analysis.

Ota points out that Habitual is a feature which occurs 49% of the time with present, and only 7% with past; so Twaddell's claim that repetition and habitual action are not essential semantic features of the present should be modified. Twaddell also uses the term "current relevance" without tying it to the linguistic environment of the form, and his claim that "limited duration" is unique to Modification II is also inaccurate, because, as Hill points out, simple past may have it too:

(3) The band played for an hour.

(4) I lived there for thirty years.

and so can non-progressive perfect:

(5) I have lived there for thirty years.

Duration is obviously not the distinguishing characteristic of progressive.

It is important to note how Twaddell ignores future entirely; his modifications have a purely formal basis, and it will become evident that the future has no regular formal manifestation.

3.4.4. Ota (1963)

Ota tries to pinpoint the problems facing structuralists in the mid-50's. Despite virtual agreement at this stage as regards

the syntactic manifestations of tense, considerations of meaning had begun to creep back, and with them, confusion and disagreement. Ota says that such conflict can be blamed on the vague and subjective interpretations of situational contexts, or on philosophical reasoning, divorced from linguistic correlations (a phenomenon we have observed in the writings of the very earliest grammarians).

Ota stresses the need not to exclude meaning, but to establish a linguistic corpus, based on tangible verbal contexts:

Tense ... refers to the possibility of the contrastive occurrence of an indicative form as predicate of a simple sentence, in combination with adverbs, which relate to the time of the predication at the moment of utterance.

(1963, p.2).

In his view, the defects of previous treatments have been:

- a) an introspective, intuitive or logical-notional approach, without linguistic support or regard to structural framework, e.g. Deutschbein (1920) - logical, Curme (1931), Jespersen (1904-49) (who claims universal applicability), and Twaddell (1960) - intuitive. (These are Ota's examples.)
- b) lack of numerical data (in all).
- c) inadequacy of material for analysis, the scope being either too broad or too narrow.
- d) analysis of personal idiolect, e.g. Hill (1958), Nida (1943).
One's self-conscious judgement unavoidably influences one's speech.

Ota stresses the need for description of meaning to have a structural framework, and for a clear distinction between verbal and non-verbal (cultural) contexts, focussing on the former, which should, he says, be further subdivided into a verbal context within or beyond

one sentence - larger contexts often have an influence and create problems.

It is important to note Ota's recognition of these semantic facts, and his desire to isolate the "essential" meaning of each form by finding the semantic features common to all occurrences of a particular form, distinguishing it from all others. Ota is basically a structuralist, but not nearly as strict as his predecessors.

He distinguishes aspect from tense, and subdivides verbs into two basic groups (once more an appeal to meaning) - statives (e.g. think, hope) and relationship verbs (e.g. sound, seem) versus action verbs (all the rest). He focusses on the bearing of context on the choice of each verb form, and asks whether such factors as clause-type, time- and frequency-indicators, and sentence subjects are relevant; what interaction exists between verb form and lexical meaning, and how best to classify them to reflect this.

Ota questions the effect of style, and looks for the essential meaning(s) of each form. It is to be noted that at this stage (1963) - it was assumed that the forms themselves had been sufficiently isolated and analysed, and that each form has only one central or basic meaning; it was the meanings that grammarians were once again concentrating on.

Ota's methodology is highly organised, aimed at being testable, self-consistent, exhaustive, simple, reliable and predictable. This scholar was in the unfortunate position of lying midway between the end of the structuralist era and the beginning of a new school of thought which focussed far more on semantics. His is a study of the cooccurrence of individual items with each verb form, and insofar as his analysis has a firmly restricted range of data, and is heavily dependent on the statistics of empirical facts (e.g. the cooccurrence

of temporal indicators with verb forms), specifically excluding his own idelect, it can be called "structuralist". But the attention given to the meaning of individual lexical items, and to the effect of style and context on meaning, is not truly structuralistic.

Diver (1958) says of Jespersen, Hill and Twaddell that all contradict each other, only having in common the fact that the rules and definitions given do not describe the actual usage of language; but this criticism does not apply to Ota, who does consider language use. The old confusion of the 1930's was creeping back again, and Ota tried to dispel it with his system, which rests on a dichotomy between past and present, shown morphologically (want versus wanted) and semantically (if the statement includes or contacts the present moment it is present, if it does not, it is past, he says). He stresses that these tenses are different from aspect (perfect and progressive).

He lists the characteristic cooccurrence between the tenses, aspects and time and frequency indicators, and classifies the verbs, as we have seen. Most importantly, he recognizes that the connotations of incompleteness, temporariness, simultaneity, vividness of description, emotional stress (in regard to the progressive) are all mere overtones or redundant features, usually conspicuously dependent on aspect, context, and the lexical meaning of the verb.

Various scholars are more or less in agreement, at this point, about the syntactic descriptions of each form, but not about the semantics, as the multitude of writings on the topic shows; Ota claims that by processing a large body of data and avoiding a mentalistic approach, he can clarify the confusion.

3.4.5 Joos (1964)

Joos, as Ota's successor, did not really take his advice

to heart. He differs from other structuralists mainly in that he bases his analysis on a set text, as a sort of discovery procedure, to ensure he has all the meanings and forms; his book shows less specifically the frames from which he deduces the meanings of the forms; Joos has a simplistic, typically structuralist view of the relation between form and meaning:

"signals will have a consistent meaning"

Nevertheless, for modals like can and will Joos gives two meanings, one archaic, one modern. In actual fact will can have more than two meanings, but he focusses on what he calls the "central" ones, to avoid admitting error; he also misses the fact that must is not only the modal of duty, but is also able to express logical obligation or the speaker's certainty.

The same applies to can, which expresses ability, permission or possibility. His assumption about meaning is not acceptable because, as Jespersen clearly recognized, the same form often has a wide variety of meanings, none more "central" than others. Joos avoids discussing this polysemy by saying that the other meanings are merely connotations.

As far as I can see, there is no reason to think that signals have a consistent meaning - one cannot even say this about nouns, let alone verbs.

Joos, in the system he suggests, agrees with Twaddell on the characteristic of past as marked opposition to present (unmarked, timeless, compatible with any other chronological nuance in the sentence). The present is seen as extending indefinitely into the past, but not vice versa; he recognises the link of past with unreality, but fails to show why future can be manifested by past tense, that is, why future is in equal relation to past and present, and not more closely

linked to one.

He categorises tense, phase and aspect into the three classes of definite, unmarked and indefinite, but cannot account for the many gaps, e.g. the fact that future only has the unmarked form. His definitions are often unnecessarily tortuous, as is evident in the case of progressive which he says does not have to signify anything about the nature of the event, but rather about the validity of the predication, e.g. assuming that the predicate is 100% valid for the time referred to, it is 96% valid for slightly earlier or later times etc. Why not simply say that progressive implies limited duration? He tries to be statistical, but, in my view, goes about it in the wrong way.

3.4.6 Palmer (1965)

The English verb has a polysemy of grammatical forms, and not all of them can be systematically accounted for, because often the meanings come from multiple combinations. This may be resolved by immediate context and Palmer (1965) implies that it is putting the cart before the horse to tell someone to use simple present verb forms to refer to repetition, or habitual action with every day - the adverb is what gives the meaning, not usually the verb.

These promising remarks of Palmer in regard to polysemy and the effect of adverbs on meaning, are, unfortunately, not developed in his later works, and he does not advance much beyond Joos, despite his criticism of him. Although he says:

... it would be possible to start with the meaning or the form: set up semantic categories and see how the forms fit into them, or vice versa.

(1965, p.8).

he chooses to deal with forms first, but admits that one cannot ignore

meaning, and uses of the tenses - both are equally important. However, he is often guilty of the same offence as Joos: looking for a neat semantic system with one-to-one correspondence to the formal system, trying to classify something which apparently lacks system. He is obviously pulled two ways: the structural exclusion of polysemy, versus the new tendency of taking all meanings into consideration.

Twaddell and Ota differ from Palmer in that they allow the lexical meanings of verb morphemes to enter the analysis of the various modifiers of the verb. As Twaddell puts it:

...we escape the unrealistic semantic separation of grammar from lexicon. We can acknowledge the existence of meaningful lexical verbs in our syntax, and gracefully recognise a linguistically reasonable polysemia of our grammatical signals within different lexical contexts.

(1960, p.145).

Palmer refuses to acquiesce. He says there are two primary tenses, past and present, and that future is secondary, though many verbs may refer to future in the primary pattern. He lists four possibilities:

- | | |
|------------------------|-------------------------|
| (1) Present non-future | I am reading now. |
| (2) Present future | I am reading tomorrow. |
| (3) Past non-future | I was reading then. |
| (4) Past future | I was reading tomorrow. |

This, in my opinion, confuses tense with aspect. He adds nothing new to already existing ideas on tense; only his classification is different, his stress being on the fact that the primary and secondary systems are very different from each other, and not equally important, because they imply embedding on different levels.

3.4.7 General

To summarise the overall system of tenses, a combination of the thoughts of traditionalists and structuralists can be given as follows:

	<u>Past</u>	<u>Modal</u>	<u>Perfect</u>	<u>Progressive</u>
takes	-	-	-	-
is taking	-	-	-	+
has taken	-	-	+	-
has been taking	-	-	+	+
can take	-	+	-	-
can be taking	-	+	-	+
can have taken	-	+	+	-
can have been taking	-	+	+	+
took	+	-	-	-
was taking	+	-	-	+
had taken	+	-	+	-
had been taking	+	-	+	+
could take	+	+	-	-
could be taking	+	+	-	+
could have taken	+	+	+	-
could have been taking	+	+	+	+

(Huddleston 1969, p.778).

This summarises the formal but not the semantic system, for which each tense requires separate examination. This raises the question of how many tenses there are: two or three?

3.5 The Future

Lyons (1970) points out that the word tense originates from the Greek word for time, khronos, so categorizations of tense have to do with temporal relations insofar as these are expressed by systematic

grammatical contrasts. We have seen what problems the three-way tense opposition of Greek and Latin gave to the earliest grammarians of English, who distinguished tense, a feature of words, from time, a feature of consciousness, and found that, though there are three times, English seems to have only two tenses: past and present. Grammarians broke from tradition and saw future as different from the other tenses. As Harris said:

there is nothing appears so clearly as an object of the mind ... only as the future does, since we can find no place for its existence anywhere else

(1751 (1825), p.108).

Knowledge of the future ... comes from knowledge of the past, which comes from knowledge of the present - that is the order: present, past, future. Present is first in perception, open to all sensate beings; past is for superior animals with memories, and future for the most excellent and most rare.

(1751 (1825), p.109).

so the order of tenses, as ranged by the old grammarians, was not fortuitous, but is consonant to our perceptions, in the recognition of time i.e. present first, then past, and lastly future

(1751 (1825), p.139).

I shall attempt to show that we should not ignore what is for "the most excellent and most rare" alone - if it is the privilege of humans to have awareness of future, we should surely not ignore it, even if it does give us problems (which we have seen to be the case with logic, with regard to reference, and truth-functionality (cf. 2.5.2, 2.5.3)).

When the distinction between time and tense was made, it became evident that a triple division was not essential, other divisions were just as viable, the only definite division being past versus non-past. With the structuralists focus on form and exclusion of meaning, the obvious division was binary, past tense being the ed form (or its variant) and present lacking this marker. To them the ternary contrast was a question of time, and not tense, and time was a matter of meaning, to be avoided at all costs.

They were, as we have seen, bound to a one to one correlation between the tenses and their surface realizations, and restricted tense to those aspects of temporal relations that are clearly marked in the structure of the verbal group.

The reasons for the avoidance of classing future as a tense were many. Naturally, defiance of tradition, with all its authority, was foremost among these. However, there was also the realization that future is different in logic to present and past, not on a par with them (cf. 2.5.3, 2.5.4). Palmer (1965) summarises the most important reasons for treating future separately from past and present:

- 1) it is not on a parallel with them, because it cuts across both - one can find a future of past and of present, hence his categorization of future as secondary.
- 2) will/shall are not the only ways of expressing future time; one can also use progressive, going to, plain present, verbs which are future-pointing, and modals, exemplified respectively by the following:

- (1) I am reading a paper tomorrow.
- (2) I am going to read a paper tomorrow.
- (3) I read a paper tomorrow.
- (4) I intend to read a paper tomorrow.
- (5) I will read a paper tomorrow.

3) will often does not refer to future, as is evident in:

(6) She will often talk for hours.

(7) Will you come?

(8) That will be him.

4) other modals besides will and shall also refer to future, though with extra reference to ability, probability etc.

5) The most vital reason for excluding future from the primary tenses is the fact that past and present are signalled morphologically, future is not, and the current definition of tense in the sixties incorporated only the former. Joos (1964) summarizes the view of the majority:

... form always dominates, ... meanings are subordinate to form ... now tense is our category in which a finite verb ... is either marked d, or lacks that marker. Then, by definition, there can only be two tenses. In the folklore an English verb has a good many tenses [sic] ... derived from Greek, Latin and Romance languages.... the corresponding reaction to our dichotomy is that we are disregarding the tense-paradigm of the English verb. What we are actually doing is making adequate use of the term "tense" at last - for over a century grammarians have been saying that English ... has only two tenses: past and non-past.

(1964, pp.120-121).

He goes on to say:

... at this point it is about time [sic] to dispose of the notion that will is a future tense auxilliary, like every modal, and simply because "time will tell" whether the asserted relation of the specified event to the real

world suffices to bring about its occurrence, it has a connotation of futurity.

(1964, p.159).

Boyde and Thorne (1969) also stress that so-called "future" is purely a matter of modality - statements versus predictions. In their view the only function of will is to show that the illocutionary potential of the sentence in which it occurs is that of a prediction, less certain than a statement, and the various meanings of will that grammarians have indulged in in the past are in their view misguided. So in

(9) My friend is downstairs. He will be wondering where I am. both verbs are non-past, the second switching from statement to prediction. According to them, the difference between the following:

(10) He sits there for hours smoking.

(11) He will sit there for hours smoking.

is that (10) is a statement, (11) a prediction, both having a present tense, habitual aspect, associated with sit. Their illocutionary force is much the same because a statement and prediction about someone's habits amounts to much the same thing, as is evident in:

(12) Nitric Acid will dissolve zinc.

(13) Nitric Acid dissolves zinc.

(12) is a prediction, (13) a statement, both about a natural law.

Given Joos's typically structuralist restrictions, and the definition of tense, future tense does not exist in English, but keeping tense for certain suffixed markers is like saying possession is only indicated by s, not of or my. What would Joos call the quasi-auxilliary be going to ?

The argument that English has no future rests, basically, on the

fact that there is no morphological alternation between future and past/non-past. But experience tells us that there is a future time; English undeniably has periphrastic futures, but they are morphologically different because the morphemes are free, not bound, as the other tenses are.

Further evidence of the existence of the future is provided by English adverbials: there are as many future ones as there are past and present. (As a partial aim of this thesis, I hope to show that tenses come ultimately from adverbs, which would strongly suggest three tenses.) The basis of the structuralist insistence that English has no future is the refusal to mix levels of analysis. Even when they claim there are two tenses, without exception they give no small amount of attention to expressions of future time, whether they officially recognise its existence or not.

Up to the time of Chomsky's Syntactic Structures (1957), future remained in limbo, but with the resurgence of the importance of semantics, ideas changed radically, with the division between time and tense gradually weakening. Tense came to be seen as a deep grammatical category, rather than a superficial one, and, in my opinion, it is only by this sort of approach that it is possible to free oneself from needless restrictions, and discover helpful generalisations in the grammar.

According to Huddleston (1969) the surface means of marking deep tense are:

- a) verbal inflections or auxiliaries
- b) temporal specifiers
- c) conjunctions (before, after)
- d) a class of the next higher verb (in sequence of tenses).

Structuralists consider only (a) as valid. But by seeing tense

as a deep category, Huddleston concludes that there is, indeed, a future tense. Since English has no regular morphological inflection for it, the question is whether we should recognise will/shall as a future auxiliary. He concludes that will is a deep structure verb, not just a future marker, and he reaches this conclusion by examining the adverbials in the surface.

In:

(14) Now we will have no money at the end of the month.

the specifiers appear to be incompatible, unless one recognises two verb phrases, each with its own specifier - now with the higher will, at the end of the month with the lower have, contrasting a present situation with an earlier one; i.e. something has just happened which increases the likelihood of something else.

So, although a sentence has only one verb in the surface, it may involve two tense selections, one embedded in the other. The point to note here has been foreshadowed by the writings of Johnson (1936) and Bull (1968): the future does not act as an axis of orientation, so to speak; it has not happened or "become" yet, and in this way it differs from past and present, and this difference is reflected in systems like that of Huddleston (later Ross and McCawley) by the fact that any tense can be embedded into a past or a present, the base of reference, but future is always secondary, always the tense that is embedded, never the base into which other tenses are embedded.

In the predictive sense, will has no past form (would implies volition or habit), but it does contrast with the present, e.g.

(15) He will be in Paris at the moment.

As Huddleston says:

Predictive will would then be like the may of possibility, in allowing present in present or future in present,

while excluding present/future in past. So if we subsume the "futurity" and "probability" uses of will under a single use, namely prediction (cf. Boyde and Thorn 1969) then we shall ... be led to regard (the sentence) as involving two tense selections, one associated with will, the other with the infinitive. In this view, will would be a deep structure verb, not just a future tense marker (1969, p.788).

I share this view. So for tense applied to deep structure, we need three terms: past, present and future. We just have to admit that future is not, strictly, a simple tense, no matter what its form; and, as has become evident, it has many alternative forms, another point that makes it different from the other two tenses.

Huddlestone admits:

... there is a good deal of weight in this argument, though the difference in meaning between probability and futurity is perhaps such that we should not regard it as conclusive.

(1969, p.788).

It seems reasonable to allow, then, for a specifier to be associated with will and/or the infinitive, a matter of two selections. What emerges is that, as Palmer (1965) clearly states in his proposed system, future is indeed a tense, but a secondary one, always "in present" or "in past", which are primary. This is also clear in Bull's axis system: one must orientate oneself to the future from some other position.

Thus, though not achieving full recognition as a tense, future is considered (at least) by every grammarian who deals with tense, and this fact is highly suggestive in itself.

3.6 The Individual Tenses

3.6.0 General

Before examining transformationalist views on tense, and their recognition of the importance of meaning, a summary of each tense, on the formal level, might be helpful.

3.6.1 The Present Tense

The present is the moment of coding, the position of ego, the moment of actualization, when what may be irrevocably becomes what is, so it is obviously the central tense (cf. Harris, 1751). When considering grammatical present, one must try to divorce oneself from the philosophical problems of the ever-shrinking, ever-moving, non-existent present (cf. Ch. 1, 1.6). Language expresses our actual experiences, not what we feel we ought to experience.

As Charlestone points out:

... the present is ... not a defined or definable entity, but is something which, like a piece of elastic, may be stretched or contracted at will, though the average speaker is hardly conscious that he is doing so.

(1955, p.265).

The two conceptions of present are as a mathematical point, or as a vague period embracing the "now" moment. The non-dimensional point present has little or no practical value in language, for now is widely variable; it is whatever one thinks of as "now". Calver (1946) says that time is bounded by the creation and extinction of the universe, and that some such limits are the ultimate boundaries of the present.

3.6.2 Present in Traditional Grammars

The logical implications of a tense form are obviously many, and are never all intended by a speaker; statements are made

about experience, and experienced present time is whatever the speaker considers to be present. The simple present was seen to have a number of basic uses, whose meanings shade into each other, according to vocabulary, context, aspect, use, etc. They can be summarized as follows: (This summary is a combination of the views of Sweet (1900), Jespersen (1933), Calver (1946), Palmer (1965) and Leech (1969) - all express the traditional view.)

A. Unrestrictive Present : used with stative verbs, with no limit on the extent of the state into past or future, e.g.

(1) Honesty is the best policy.

(2) I live in Grahamstown.

This use includes:

i) universal or eternal truths, e.g.

(3) $2 + 2 = 4$.

ii) the order of nature, geographical facts, e.g.

(4) The sun rises in the East.

(5) Rome is on the Tiber.

iii) proverbs, e.g.

(6) A rolling stone gathers no moss.

B. Instantaneous Present : with event verbs, to show an event which is simultaneous with the present. This includes:

i) commentaries, e.g.

(7) He scores!

ii) exclamations, e.g.

(8) Up we go!

iii) demonstrations, e.g.

(9) I now raise my left hand.

iv) performative, e.g.

(10) I apologise.

The distinction between states and events (A versus B) is vital, because only the latter have a beginning and end, and can be imagined to occur at one moment (though in actuality this is never so).

C. Habitual : with event verbs to express:

i) iteration, e.g.

(11) He walks to work.

ii) scientific and eternal truths, with every time, e.g.

(12) Oil floats on water every time.

Adverbs are commonly used to make the repetition explicit.

D. Present for Future : e.g.

(13) He starts work tomorrow.

An adverb of future time is often essential, to show that the constitution of things is such that the event can be expected. It can also imply repetition, e.g.

(14) After tomorrow, I eat at Joe's.

E. Present for Past : the historic present, a form of poetic licence, e.g.

(15) In walks John.

This can be related to the use of present with verbs of past communication:

(16) John tells me ...

where the verb's meaning is transferred from the initiating to the receiving end of the communication, and is still in force for the recipient, i.e. result is present (cf. McCawley (1971) stative present). This is also evident in:

(17) We learn in Genesis that ...

(18) In Lear, Shakespeare portrays ...

i.e. through the surviving work, the artist lives. Hence one's options in literary cross reference:

(19) The problem is/was discussed in Chapter 4.

the author can see the book as an artefact in the present, or as developing on a time scale.

F. Other Uses of the Present : The present may be used to show ability, e.g.

(20) He plays the piano.

We also use the eternal present in stage directions, e.g.

(21) Enter John.

Our separation of present from temporally continuous experience is arbitrary; the present is continuous (cf. Ch. 1, 1.6), not a series of momentary acts, hence the vagueness of the uses of the present. Such a polysemy for one form, s, was inevitably anathema to the strict structuralist, who consequently searched for alternatives.

3.6.3 The Progressive

A source of even greater confusion to structuralists than the polysemy of the present, was the fact that many of the so-called "meanings" of the present could be expressed just as well by progressive aspect.

The early search for a basic meaning of progressive caused great confusion, so the insistence of structuralists on focussing on form is understandable.

The alternation between past time and progressive aspect seems always to have been a problem. Traditionally progressive was said to stress duration, but this is not the case in:

(22) Your sister was telling me yesterday ...

(23) The next moment she was knocking on the door.

Although progressive may be durational and habitual, e.g.

(24) He is always getting drunk.

we cannot say the essence of progressive is duration, despite sentences like:

(25) Your slip is showing.

because of the use of present for the same meaning:

(26) Your slip shows.

Some have sought alternative meanings; Curme (1932) alone insists on duration as the only "meaning" of the progressive. Poutsma (1921) and Deutschbein (1920) allow for secondary meanings. For example, Deutschbein says it indicates ingressive, progressive, intensive, introspective, prospective or emphatic overtones, providing a very complex support for this argument, and Goedsche (1932) adds to Curme's three uses (ingressive, progressive and effective) a fourth use, the terminate.

Such theories are, in my opinion, highly notional and intuitive, anathema to the structuralists, like Nida (1943), because in his view no meaning has an exclusive formal parallel. As Nida says:

... this is nothing more than a grouping of linguistic ideas, with no essential linguistic value in the broad sense of the term.

(quoted by Allen 1966, pp. 10-11).

The differentiation between intensive and emphatic, or progressive and introspective, is unnecessary, in my view, because what constitutes such overtones, e.g. ingressive in:

(27) I am getting old.

is usually the lexical meaning of the verb.

Sweet (1900) and Jespersen (1933) reject duration as the basic meaning of the progressive as well. Sweet says there is "a certain duration", but that the main function of progressive is to define a temporal point, e.g.

(28) When I came in he was writing.

the point being inferable from context, if not given e.g.

(29) I am writing (now).

However this is not the case with:

(30) I was coughing all night.

where duration overrides the "definite" point, which is lacking.

Jespersen devises a frame theory, similar to Sweet's, but admits that it cannot account for:

(31) He is always smoking. (no time enframed)

(32) He is now writing a book. (not really "now")

(33) John knows he is talking rot. (frame theory reversed)

Brusendorff says:

... while simple tenses generally express succession,
expanded tenses don't indicate duration or continuity,
but practically always simultaneity or relativity.

(1930, p.229).

His example is:

(34) When I entered, he followed me.

versus

(35) When I entered, he was following me.

However this cannot account for:

(36) When I was in London, he visited me often.

so succession is not essential to simple tenses, nor simultaneity to the progressive.

Calver (1946) criticises Jespersen, saying that the difference between the simple and progressive is not temporal, but that the simple present indicates the constitution of things, logical, psychological, and essential, and the progressive indicates mere occurrence.

For example:

(37) He makes R400 a month.

(38) He is making R400 a month.

Ota (1963) points out that indicators of regularity or frequency can occur with both; the idea of mere occurrence is not essential to the progressive, his example being that occurrence is evident in the simple present:

(39) Here he comes.

and not in the progressive:

(40) She is always trying to pass you.

Hatcher (1951) asserts that the search for new meanings has been as fruitless as the attempts to justify the traditional one, because of certain misconceptions; to say duration is stressed by the progressive is to say progressive presents an activity as occurring; but there is no real link with duration, because there is no action, however short, which cannot be seen as in progress. We fail to see that the simple form is

... essentially protean ...

(1951, p.259).

having no basic meaning, varying with the context, and so able to stress perfective, habitual, or even durative aspects, e.g.

(41) My back aches.

The confusion over duration is due to the meaning of progressive - in progress. In sentences where duration is obvious, e.g.

(42) Your slip is showing.

present is just as acceptable, because it is neutral.

In my opinion it is essential to consider exceptions and escape the tyranny of old theories and the idea that there has to be a basic meaning related to each form. We must describe what we find, objectively, and in doing this, Hatcher finds six groups of present

and progressive usages:

i) Past: e.g.

(43) Your teacher says...

(44) Your teacher is complaining...

ii) Future: e.g.

(45) I see him tonight.

(46) I am seeing him tonight.

iii) Present (natural state): e.g.

(47) The statue stands in the centre.

(48) The statue is standing in the centre.

iv) Present (temporary state): e.g.

(49) You look well.

(50) You are looking well.

v) Present (habitual): e.g.

(51) He works in a bank.

(52) He is working in a bank.

vi) Present (single occurrence): e.g.

(53) My nose itches.

(54) My nose is itching.

One needs to focus on each separately, and, in analyzing group (vi), which to me looks very much like group (iv), Hatcher sees that the lexical meaning of the verb has a great influence: those verbs with progressive as the norm have a feature of overt activity (e.g. wash, comb, chew), while those with present as the norm have a feature of non-overt activity (e.g. sting, hurt, smell).

Apparent exceptions can be explained in terms of this distinction of overt versus non-overt activity, for a progressive verb, which is normally simple present, acquires overtones of activity, emotion, warmth, or spontaneity, greater involvement of the speaker, or greater

stress on the development of the action, e.g.

- (55) I am seeing him to the door. (activity)
- (56) I am hoping to go. (warmth)
- (57) I am seeing Mona Lisa with my own eyes. (speaker's involvement)
- (58) I am seeing better now. (stresses development)

When a normally progressive verb is simple, the reverse is the case, and there is a loss of overtness of activity, development or involvement.

Thus, according to Hatcher, progressive is simply attracted to verbs which suggest involvement in activity, which is what duration really means. It is a matter of interaction of progressive with the verb stem, and context of use; meaning cannot be omitted, so the structuralist attempt to find a single meaning for the progressive was doomed to failure.

Hill (1958, p.206-209) suggests that progressive with present implies habit, and with past implies non-completion. But this may be contradicted by the following example, which has progressive with past, yet seems to imply completion; though not in the normal sense of the term.

- (59) In those days I was living in a hut.

Twaddell (1960) says progressive implies limited duration, which is essential to processes. But in my opinion there is very little difference between:

- (60) He has lived there for ten years.

and

- (61) He has been living there for ten years.

and he even admits that the difference between the following:

- (62) I have taught for ten years.

(63) I have been teaching for ten years.

is "unknown" - which seems rather vague. Hatcher's analysis is far better, for it makes the difference all too evident - (63) may imply a greater involvement than (62).

The suggested uses of the progressive up to 1964 are as follows:

A. To refer to temporary events, e.g.

(64) Where is Mary? Cooking supper.

B. To express duration, as distinct from instantaneous present, stretching the event and making it seem slower: a matter of psychological, not real time, e.g.

(65) I am seeing Mona Lisa for the first time.

C. To express limited duration, e.g.

(66) My watch isn't working.

(67) I am living in De Aar (at the moment).

D. To imply that the situation is actual and particular, evident in the difference between the following:

(68) I enjoy the sea.

(69) I am enjoying the sea.

E. To express incompleteness, e.g.

(70) He was drowning (but did not).

F. To express a temporal frame; within a point of reference and a vague area around it, e.g.

(71) When she came in, he made tea. (sequence)

versus

(72) When she came in, he was making tea. (inclusion)

When no event or time point is involved, no framing occurs, e.g.

(73) They were working in the shed on Monday night.

- the temporal event is relative to the period, and, if anything, the frame is reversed.

G. To express simultaneity without limits, e.g.

(74) While she was ironing, I was talking to her.

H. To express greater politeness, e.g.

(75) Did you hear about it? Yes, Anne was telling me...

i.e. she did not finish, I am eager to hear it from you.

I. To express limited duration of a habit or series of events, in existence over a limited period, usually adverbially specified, e.g.

(76) They were rising at 7 a.m. then.

J. To express repetition of events of limited duration, e.g.

(77) Whenever I visit him he is mowing the lawn.

K. To refer to future anticipated events, e.g.

(78) He is buying me a hat tomorrow.

L. For idiomatic usage, with no temporal element, to express persistence and active continuation, duration overriding the temporary element, e.g.

(79) Daily we are getting nearer to death.

(80) He is always moaning.

To me, such a list only confuses; the meanings are not clearly separated, and when one examines the list objectively, it becomes all too clear that, in most cases, the proposed meaning comes not from the ing, but from adverbial specification, or the verb's meaning, as is the case in I, J and K.

Ota (1963) tries to dispel this confusion by saying that progressive only implies the process of the action, not the occurrence thereof, nor the existence of a state. Progressive's essential semantic feature, he says, is process, concerned with the mode of action, so it is an aspect, not a tense, focussing on a particular part of an event or process. As Bodelsen puts it:

... the difference between the expanded and simple forms is that, while the simple forms describe either (1) a statement of fact ... or (2) what is habitual or of general validity, the expanded forms describe the actions themselves.

(1937, p.221-2).

Early theories seem to have been too subjective and complex, and Ota says one should try to find linguistic correlation between the inherent meanings of the verbs and the "meaning" of the progressive, using a definite corpus of data. Process implies duration, but duration is not the essence of progressive alone, and can be part of other tenses as well. The progressive also varies in effect according to the verb's own meaning. So, when progressive,

a) momentary verbs indicate not duration, but a repeated series, e.g. kick.

b) transitional verbs indicate the approach, but not the achievement of a change, e.g. arrive, fall, die.

c) activity verbs indicate a durational, continued activity, ultimately limited, e.g. drink, eat.

d) process verbs imply duration in themselves, so this duration is stressed, e.g. change, grow.

Verbs of: (i) perception e.g. feel, hear, see.

(ii) inert cognition e.g. know, hope.

(iii) a state of having or being

e.g. belong to, contain.

iv) bodily sensation e.g. hurt, itch.

are not usually found in progressive, because progressive basically indicates that an action is in process now, or at some time in the past, started but not ended, involving movement, development towards

completion, and is dynamic. None of these verbs ((i) to (iv)) can have such features in ordinary usage, they are absolute. [When they do have a progressive inflection, they acquire overtones of vividness, emotion and stress (from progressive's dynamicness) and of temporariness, incompleteness and continuation (from its implication of change).

There is very little temporal difference between simplex present and progressive present, evident in their shared adverbial specifications, and it is not time that characterises the progressive, despite grammarians' attempts to prove this.

This examination of present and progressive aims to show how different approaches to the same topic can produce very different results.

The morphological facts are that present is represented by s and ϕ , and progressive by a form of be, plus ing attached to the infinitive base. What has become apparent is that only present is a matter of tense, as such, and that aspects (progressive and perfect), fit in with the temporal nuances of the predicate and adverbial specifiers, and provide additional overtones. They are not tenses, but they affect tenses. This is why grammarians in the twentieth century tended to discuss progressive and present together, and past and perfect together - hence the misconception that the aspects have something to do with time. It is an unfortunate coincidence of the English language that both tenses and aspects are represented morphologically by verbal inflections, and that perfect looks so similar to past. The similarity seems to end there.

The three tenses, as such, are present, past and future. Progressive and perfect are aspects, superimposed on tensed verbs, and affecting the already existing meanings of the tenses and verbs, stressing different parts of the state, process or event, hence

their classification by many as tenses.

3.6.4 The Past Tense

The past, in itself, causes few problems, but it is its relationship with the perfect that has confused so many writers. From the time of the earliest grammars, they have been linked closely. On the whole, early 16th and 17th century grammarians agree that there are three past tenses: simple preterite, present perfect and pluperfect. Some, however, classify present perfect among present tenses, and do not see it as a past tense at all.

In structural terms those holding the latter view are correct:

(81) I have gone.

is a perfect of the present tense. Cooper (1685), Brightland (1711) and Mattaire (1712) (quoted by Charlestone (1955)) class present perfect with past tenses; Laughton (1734), Ward (1758) and Lowth (1762) class it among present, saying its function is to show present time of a completed action. Greenwood (1711) says both - first that it is past, then that it is present.

In actual fact, perfect is tenseless, and may be applied to past, present or future verbs, with similar effects. It is an aspect, like progressive. Once this confusion is dispelled, past is comparatively simple. Poutsma says:

... the ordinary form of the verb ... which is used in describing an action or state prior to the primary dividing point (i.e. the moment of speaking or writing) is called the preterite.

(1926, p.206).

... its most important function is to state distinctly that the action or state referred to belongs to the past time-sphere.

(1926, p.256).

Similarly, Kruisinga expresses the view that

... a past action, occurrence, or state is expressed by the past tense when the speaker considers the time as completely separated from the present.

(1931, p.23).

Curme has much the same view, adding that simple past must be a definitely indicated period or moment:

it is used to represent an act as done, or as regularly or habitually done, or as going on in time wholly past at the present moment, although it may have been performed only a few seconds before; but, if this tense is employed, the time of the act must be stated accurately or indicated clearly by the context so that the idea of indefiniteness or generality is entirely excluded.

(1931, p.357).

- all his examples thus have definite temporal adverbial specification.

Jespersen's definition of the past is made via a comparison between it and the perfect:

Preterite refers to some time in the past, without telling anything about the connection with the present moment, while Perfect is a retrospective present ... connects a past occurrence with the present time, either as continued up to the present moment, ... or as having results ... bearing on the present moment.

(1933, p.243-245).

In my opinion this comparison is confusing, for only the present perfect is linked with the present; past perfect and future perfect are linked with the past and future respectively.

Like Curme (1931), Jespersen says the distinctive use of the

past is to refer to a definite point or period of past time:

the preterite is ... the proper time whenever the sentence contains such time indications as yesterday, the other day, in 1901 etc. or is a question about the time e.g.

When did you see him?

... very often a sentence contains no express indication of time, and yet the Preterite may be required, because a special point of time is implied by the context or ... whole situation.

(1933, p.244-5).


In Bryan's opinion, the preterite represents an action or state ... as having occurred or having existed at a past moment or during a past period of time that is definitely separated from the actual present moment of speaking or writing.

(1936, p.363).

He disagrees with the theory of definiteness, saying all that is necessary is that the event occur

at some point or within some period of time that is definitely past ... clearly marked off from the present by some interval, however momentary.

(1936, p.363).

Using the line analogy, preterite is an infinite , never actually touching the present, separated by anything from a moment to a hundred years,

all that is essential is that the past time of action or state ... be clearly disconnected from the speaker's ... present moment.

(1936, p.364).

e.g.

(82) The sun came out a moment ago.

(83) Civilization began with the discovery of fire.

So the existing ideas about the past by 1964 are as follows:

A. it represents an event as occurring before the moment of speech, and implies a complete or total event. (The definiteness of the past is seen as important, because past presupposes a frame of reference already established, so the speaker has a definite time in mind), e.g.

(84) Haydn was born in 1832

B. it shows hypothetical meaning in dependent clauses, e.g.

(85) If I were you ...

C. it is used in narration, e.g.

(86)... then he said ...

D. it is used for greater politeness, e.g.

(87) Did you call? Yes, I wanted to ask you ...

wanted here is less direct than want, because it implies that the speaker is prepared to change his view to avoid a clash of wills.

E. to contrast with present, e.g.

(88) I thought you had gone. (i.e. you have not).

F. to show sequence of tenses in shifted speech, e.g.

(89) I said I was here.

3.6.5 The Perfect

As Twaddell points out, past is compatible with both perfective and progressive, yet there seems to be little temporal difference between simple past, progressive past and past perfect. There are, obviously, several non-temporal differences, but temporally all refer to a clearly past period. It is unfortunate that so many have insisted on classifying present perfect as a past "tense", which it is not: it is a perfect aspect of present tense, just as

past perfect and future perfect are perfect of past and future respectively.

It is interesting to examine the early theories about the perfect, before the advent of structuralism. Bryan is earnestly critical of his predecessors, saying:

... the perfect includes an action or state within certain limits of time, and as a tense form it seems to me to do no more than this .

(1936, p.376).

i.e. it is a tense in his view.

Poutsma (1926), Kruisinga (1931), Curme (1931) and Jespersen (1933) all see this link between past and present time, he says, but none sees in the perfect the expression of the simple temporal notion which Bryan sees as its essential function; this is perhaps fortunate .

The following are some of the suggestions about the functions of the perfect:

A. Continuative/Inclusive Perfect

According to Poutsma:

... a function of the perfect is that of representing an action or state as continuing from a point of time in the past to the moment of speaking ... [with] an adverbial adjunct or clause denoting the length of that time.

(1926, p 212).

e.g.

(90) I've known him for two years.

In a similar vein, Jespersen says that

Perfect is used with an indication of some length of time to denote what has lasted so long and is still ...

may be called inclusive ...

(1933, p.241).

Kruisinga agrees:

the action, occurrence or state referred to by the group-perfect may be thought of as continuing into present time; this is only a special case of its resultative use ... continuative.

(1931, p.390-391).

and Curme has the opinion that:

present perfect ... is much used to indicate that an act begun in the past is still continuing.

(1931, p.360).

Diver (1943) criticizes Jespersen's statement that the preterite is the past not linked to the present, while perfect has present relevance, because of the sentences:

(91) I lived in X till 1967, but since then I have lived in Y.

(92) I have lived in X, but since 1967 I have lived in Y.

the difference here is not separation from the present he says because each is clearly separated. In Dr. Aldridge's opinion, however, if one says "I have ..." this is related to total experience, and is thus relevant to one's present store of experiences.

B. Resultative Perfect

According to Poutsma, the perfect

... in its primary application expresses a blending of two elements, viz. ... (a) that the action or state belongs to the past time sphere, (b) that this action or state produced a result belonging to the present time sphere. Thus

I have written a letter.

places the act of writing in the past time sphere, but
 ... implies the finished state of a letter in the present.

.....
 It has been observed ... that one of the functions of the
 perfect is to place an action or state of the past whose
 results ... extend to the present.

(1926, p.209-210).

Both Kruisinga and Jespersen see resultative as the characteristic
 function of the perfect. In Kruisinga's view:

Perfect is used to express the bearing of a past action
 or state on the present time. This is the most frequent
 function of the perfect.

(1931, p 390):

Jespersen shares this opinion, when he says:

the perfect is a retrospective present, which connects a
 past occurrence with the present time, either as continued
 up to the present moment ... or as having results ...
 bearing on the present moment.

(1933, p.243).

However, after an examination of their examples, Bryan concludes that
 any idea ... of results ... is not implied in the perfect
 tense form but derives from the meaning or character of
 the verb, or from the context, or from the statement as
 a whole ... to assign to the perfect tense-form itself a
 resultative function means a failure in analysis and a
 consequent confounding of essentially different matters.

(1936, p.369).

e.g. write and receive imply finished states in themselves, as does
come here in:

(93) I have come here.

the results are conveyed not through the perfect tense form, but through the character of the verb and meaning of the words.

(1936, p.370).

After discussing a number of their examples, e.g.

(94) I have written a letter. (Poutsma)

(95) Have you finished? (Kruisinga, Jespersen)

(96) I have been ill all night and don't feel like going to work this morning. (Curme) (Bryan 1936, p.370)

Bryan emphasises that:

in none of these sentences ... can I see the perfect tense of itself conveys any implication of results ... but merely that it conveys the time-notion that I have stated.

(1936, p.371).

Bryan then examines the problem of the use of the perfect with subjects who are dead. According to Jespersen:

In speaking of dead people the preterite is used, except when the reference is to the result as affecting the present.

(1933, p.245).

e.g.

(97) Newton believed in an omnipotent God.

(98) Milton has had several imitators.

In Poutsma's view:

when the reference is to achievements ... in history, we find either the perfect or the preterite, the choice depending upon whether it is regarded to extend in its results to the moment of speaking or not, e.g.

Aristotle has treated this subject in his Ethics
 - the result continues to be a matter of speculation to
 this day ... But we could not say
 Aristotle has written the Ethics.
 because [it] is considered merely as an historical fact,
 with no association with the present.

(1926, p.264).

So we can say:

Newton has explained the movements of the moon.
 From [this] it would follow that the choice of tense does
 not depend ... upon whether the originator of the achieve-
 ment is still living or not.

(1926, p.264).

Both Jespersen and Poutsma see this latter sentence as acceptable
 only because Newton's explanations are still valid. It is, however,
 according to Bryan, a matter of context, for if one were writing a
 biography of Newton, the preterite and not the perfect, would be
 required.

C. Repetition of Perfect

Both Jespersen and Kruisinga see the expression of repetition
 as a characteristic use of resultative perfect:

the perfect often seems to imply repetition e.g.

When I have been in London, I have seen him pretty often.

versus

When I was in London, I saw him pretty often.

(Jespersen 1933, p.70).

the resultative perfect may express an iterative aspect.

(Kruisinga 1931, p.391).

but Bryan rejects the example sentences again, because:

... in none of [Jespersen's] illustrative sentences can I find an example of a principal statement in which repetition is implied through the perfect tense itself.

(1936, p.374).

Usually the adverb gives the repetition - (he mentions often from Jespersen's example sentences), or plurals (nights). He points out that in Kruisinga's examples there is always a word like habitually, invariably, or two or three times.

Poutsma also sees the continuative perfect as iterative:

in the case of momentaneous verbs it is the continued repetition of the action during a given space of time which is expressed by the English perfect.

(1926, p.212).

again the same criticism as above applies, for he uses phrases like for centuries in his examples. As Bryan puts it:

Naturally, since the perfect tense ... represents the speaker as looking back from the moment of speaking over any stretch of past time ... it gives wider scope for the presentation of a repeated or habitual action than does the preterite, which cannot carry a survey as far as the present moment. But the perfect tense itself does not express ... iteration; where this notion is present, it comes from the essential meaning and character of the verb or from some modifying element or from the context or situation.

(1936, p.375-376).

D. The Perfect of Completion

Curme sees the main function of perfect as expressing completion at the moment of speech:

the present perfect tense represents an act as completed at the present moment:

I have just finished my work.

(1931, p.358).

Poutsma agrees:

what distinguishes the perfect from the present is that the former represents the action or state as having ... come to a conclusion, while the latter implies that it will be continued in the future.

(1926, p.210).

Again, says Bryan, it is a matter of the verbs concerned. Completion may also be a feature of the future, and the perfect may not have this feature in some cases, as is evident in:

(99) We have lived here for two years. (and will continue to do so).

E. General or Indefinite Perfect

According to Curme:

present perfect can be used of time past only when ... the thing in question still exists and the idea of past time is not prominent i.e. where reference is general or indefinite.

(1931, p.360).

e.g.

(100) John has been seen often.

versus

(101) John was seen last year.

Bryan points out that it is the adverb which gives the definiteness, and the perfect could have been just as definable with another adverb. All one can say about perfect is that it cannot refer to a definite past time:

this examination appears to me to have demonstrated that the perfect tense has the one essential feature I have assigned to it ... that in interpreting the functions of a grammatical form one cannot guard oneself too carefully against assigning ... values that are expressed not by this form but by other elements of the statement.

(1936, p.382).

In my opinion Bryan is nearer to the truth in seeing that meaning seldom comes from one form alone, but rather from a combination thereof. But the problem of the perfect still remains. We have seen the writers above classifying its uses into several types, but all seem to classify without trying to find some common semantic feature to unify the uses. Zandvoort (1932) goes so far as to suggest, in addition to the uses already mentioned, a Perfect of Experience (1932, p.11-20), but this is also a semantic classification, based on meaning, and not on form. Identification of usage is inevitably subjective because of a lack of universally accepted criteria for judging, and because of the varying effects of context, and the lexical meaning of the verb.

Structuralists looked for more precision in formal analysis. Twaddell (1960) says the feature of the perfect is "current relevance", but does not try to link this label to the linguistic environment of the form. Hill looks for the semantic component of the perfect, and finds "completeness" in the past participle, and non-past in have. The completeness is, in my opinion, questionable, because it probably belongs to the lexical meaning of the verb if anything; he fails to distinguish between this, and the grammatical meaning of "perfect".

Twaddell recognises, in relation to progressive (his modification III) the interaction of the verb's lexical meaning and grammatical meanings of progressive (hence his five-way classification of verbs),

but he fails to apply this principle in relation to the perfect. Ota (1963) does apply this principle, however, and demonstrates how action verbs, which imply completion, always express this completion in the time period stretching up to now, and statives show several repeated states in the period, e.g.

(102) There have been times when ...

As was pointed out in the case of Poutsma, Jespersen, and Kruisinga, the repetition comes from adverbials or context etc. The same applies to the so-called resultative perfect.

(103) It rained last night.

implies that the earth is wet today, but not just because of the use of past tense - rain will make things wet, regardless. All such overtones, Ota stresses, are just tendencies of the context, or lexical meanings of the verbs, and are not characteristic of perfect alone.

He sees the need for a verbal classification, pointing out how verbs like hope, wish and intend, in past perfect, indicate that the event never occurred, i.e. the hope existed before a later development. In his view there are two variants of the present perfect, relative to the end-point:

a) timeless, if the end-point makes no reference to the moment of utterance, e.g.

(104) You have not lived till you have been to Paris.

No time indicators are present, and such sentences always have a subordinate clause, a prerequisite to the main clause.

b) shifting the end-point to the future in the subordinate clause, e.g.

(105) After I have read it, I shall give it to you.

With his focus on form and structure, Ota stresses that perfect has temporal indicators more often than simple forms (30% more, in

fact), and that they are usually in, for, during, up to etc., showing the end-point to be present. Like simple present, present perfect also takes now, today, tonight, this year etc., because the moment of utterance is the end-point.

What makes present perfect different from simple present is the fact that only the former takes expressions like recently or in the past, showing the link with past as well as present time.

Ota also comments on the opinion of Lees (1962) that generic determiners of subjects of perfect predicates are incompatible, e.g.

(106) Young girls have fallen in love.

In his view, generic is incompatible with the specific, and the perfect is specific, either with reference to past, present or future.

Ota disagrees with this view, on the grounds of sentences like:

(107) Young men have escaped.

- here present perfect is not tied to a specific temporal point, and is thus timeless, so can take a generic subject. Anyway, in my opinion, it is legitimate to make a general statement about a set temporal context, e.g.

(108) Young girls have fallen in love before today.

Obviously grammatical features, like lexical meanings, can and do have more than one meaning, despite the attempts of so many to prove the contrary and to find a one-to-one correspondence between form and meaning. To say that perfect is past with present relevance is too vague; there are two ways to relate present to past via perfect: involve the time period up to the present, or the results persisting in the present. But perfect is not essentially associated with past; like progressive, it is an aspect, and is equally compatible with all three tenses, its so-called functions always being highly dependent on the lexical meaning of the verb,

the situation of use, the literary context, extra-linguistic knowledge, and the meaning of adverbial specifiers. It is the latter features which have demanded increasing attention in recent years.

3.6.6 The Future Tense

Having established that there is probably a future tense in English, linguistically reflected, whether everyone recognises it as a tense or not, we must show what its linguistic manifestations, meanings and functions are.

Onions (1932) maintains that English began with two tenses, present and past, the former incorporating present and future time. However, according to him, gradually a more elaborate tense system was needed, hence the compounds with do, will, shall, be, etc. which lost some of their original meaning and became signals of tense. This is a possible explanation for why surface expressions of future time are so varied: perhaps future is a secondary tense, historically as well as grammatically.

The means of expressing future time include:

A. Will / Shall + Infinitive : this has the dual function of modal and future auxiliary, often indistinguishable, because future is never certain anyway, and is always tinged with modality, usually prediction (cf. Boyde and Thorne 1969, 3.5). This construction is especially frequent in the main clauses of conditionals, and is suitable for prophetic statements. With the perfect infinitive, it expresses past in future, e.g.

(109) By then I shall have left.

B. Be going to + Infinitive : this expresses the future fulfilment of the present. Here one must distinguish between:

a) future culmination of present intention, mainly with (+ human) agents and agentive verbs, and a strong element of intention, e.g.

(110) They are going to be married.

and

b) future culmination of present cause, with (+ animate) subjects,

e.g.

(111) She is going to have a baby. (i.e. she is pregnant).

(112) I think I am going to faint. (i.e. I feel ill).

- the factors causing the future event are already present, so it often refers to imminent future, e.g.

(113) Look! He is going to fall!

Naturally, there are ambiguities between (a) and (b) which have to be contextually resolved. This is the case with:

(114) He is going to come late.

- either he intends to do so, or circumstances are such that he cannot help it. Imminence is not a necessary semantic feature, as is evident in:

(115) When I am big I am going to be a linguist.

- the event has its seeds in the present, even if one sees it as occurring in the far distant future. Be going to does not guarantee the occurrence of the event by any means, as we see in:

(116) He was going to sue me, but Joe stopped him.

C. Present Progressive to express future : the present progressive refers to a future event anticipated in the present, not a present intention or cause, but rather a present arrangement, i.e. a future event anticipated because of a present plan or arrangement, e.g.

(117) She is getting married in December.

(118) We are having pork for supper.

The difference from intention is slight, and be going to can always substitute. Fixed arrangements are usually associated with the near future, although, if determined in advance, they may be far,

e.g.

(119) I am joining the air force when I grow up.

If there is no temporal adverb, near-future is usually understood. It is used mainly with verbs of motion, and the feature plan restricts it to "doing" verbs, hence the anomaly in:

(120) The sun is rising at 5 a.m. tomorrow.

D. Present tense to express future time : the present tense refers to the future time when it is introduced by a conditional in a dependent clause, or by a temporal conjunction, e.g.

(121) I'll tell you if it hurts.

(122) I'll tell you when it hurts.

In the dependent clause, the event is not a prediction but a fact; in other words (121) can be reduced to If X is a fact I predict Y. So the simple present here means future as a fact. Any future event seen as inevitable can therefore be represented by the present, e.g.

(123) The train leaves at 7 a.m. tomorrow.

(124) We leave tomorrow.

(124) is more dramatic than

(125) We will leave tomorrow.

because a change of plan is seen as out of the question. It is important to note that this form has definite reference and therefore needs a temporal adverb, unless in a narrative sequence where the definite time is given. There is, thus, no ambiguity between this expression of "future as fact" and present habitual:

(126) The train leaves at 5 a.m. tomorrow. (future)

(127) The train leaves at 5 a.m. (habitual)

E. Will / Shall + Progressive to express future : will/shall and progressive refers to temporary situations, e.g.

(128) This time tomorrow I shall be crossing the Atlantic.

- an action is associated with a future time point, and the action

forms a temporal frame around this point, like the past progressive and habitual present progressive. Another use of this form is to indicate future as a matter of course, regardless of the will of anyone, e.g.

(129) The plane will be leaving at 9 a.m.

This form is also, according to Leech, used to refer to future when uncontaminated by factors of volition, plan and intention. It can also express extra politeness, because it puts no pressure on anyone, e.g.

(130) Will you make tea?

versus

(131) Will you be making tea?

In sentences like:

(132) The sun will set at 6 p.m.

(133) The sun will be setting at 6 p.m.

there can be no question of personal involvement, therefore no nuance of politeness.

Of course, these are not the only ways of expressing future time, and such a wide range of possibilities was anathema to the structuralists, hence their resolute decision to ignore it. The other alternatives for expressing future are: to be about + infinitive, to be destined + infinitive, verbs of forward implication, (e.g. want, hope, plan, try, agree), verbs of inception, continuation, intention, and volition.

In addition, words like come, go, enter, to, from, all point to the undeniable existence of a future time, about which we speak in our language. As Givon says, these are

perhaps another candidate for eventual admission into the hall of fame of linguistic universals.

(1971, p.50).

The views on future tense so far presented have very obviously included semantics, and even those structuralists who tried to exclude meaning were forced to discuss it, in relation to future. Joos and Twaddell agree that there are two tenses, the present being the neutral one, compatible with any chronological meaning in the sentence, including the future.

However, although there may not be much justification for a future "tense" on a par with present and past tenses, although "everything to the right of present on the time line" may be adequate, and although a two-tense system of past and non-past seems reasonable to some, one must consider the counter-evidence: it is the adverb which shows the precise time point, not the verbal inflection (which simply expresses a temporal relation), and there are, undeniably, a great many future adverbs. It is a fact of experience that our lives are oriented to the openness of the future, and our language too, hence the many ways of referring to future time.

Perhaps Palmer (1965) had the clearest view: he recognises two basic tenses, and a secondary pattern as well, shown with relation to the present and past equally, and not more closely linked to any one; basically this secondary pattern acquires its future reference from the accompanying adverbial.

It is this idea of a secondary system which is developed by Ross (1967) and Huddleston (1969) in their more abstract view of embedded layers of tenses. Tense cannot be seen as purely a verbal inflection. It is the expression of temporal reference in language, a matter which, we have seen, can be fairly complex. Huddleston says:

It follows from the suggested treatment of will, be going to etc. that the tense selection associated with

the highest V.P. ... can never be future ... a future will be "in present" or "in past" ...

(1969, p.790).

- future is a secondary tense, but it is undeniably there.

3.7 Summary

In Chapter 3 I have attempted to give a brief survey of the ideas concerning tense from the time of early classical grammatical studies, right up to approximately 1960. I have dealt with the theories of Jespersen (1933), Fries (1952), Hill (1958), Twaddell (1960), Ota (1963), Joos (1964) and Palmer (1965) in a little more detail.

In general, Chapter 3 presents the considered opinions of grammarians of English during the structuralist era, and their ideas are often contradictory or vague; after 1960 (approximately) a new school of thought started to develop, the transformationalist school, and due to their influence a major change in linguistic theory took place, which revolutionised ideas about tense. Chapter 3 merely tries to present the foundation of these new ideas, as a basis for chapters 4 and 5.

CHAPTER IV

THE TRANSFORMATIONALISTS

4.0 General

The dramatic impact of the publishing of Chomsky's Syntactic Structures (1957) can hardly be appreciated by those who did not experience it. He denied the basic assumption of structuralism by arguing that an adequate linguistic description of a grammar cannot be derived by applying sets of options to primary data, but rather by using a formal deductive theory, whose object is to separate grammatical sentences of a language from the ungrammatical sentences, and to provide a systematic account of the structure of the former. This involves a complete reversal of the relations among the parts of a linguistic description, as well as defining the main object of linguistic theory as the principles underlying the construction of sentences, rather than the identification of minimal signalling units such as phonemes.

Chomsky's work led to a genuine scientific revolution in that his approach redefined the aims of linguistics, delineating a set of specific problems, with which linguists may properly be concerned. Unfortunately Chomsky's rigorous analysis of syntax, based on structuralist principles, left many stubborn linguistic facts that simply could not be handled by his operational procedures, and these counter-examples led to developments of alternative paradigms, a natural process in the evolution of linguistic theory.

While the transformationalists' innovations in syntax were truly radical, their ability to offer solutions to a wide range of problems that had either been ignored, or handled clumsily by structuralist methods, must not be overlooked. Chomsky actually retained the

central structuralist assumption as regards the absolute independence of form and meaning, so, for a while, the status of meaning in linguistic description remained much the same as it had been.

Bloomfield (1935) excluded meaning from linguistics because of his definition of meaning as equivalent to an account of the total social, cultural and individual context of speech - he naturally felt the need for a narrower focus. However, Chomsky said that meaning is not so broad. Although he does say:

... only a purely formal basis can provide a firm and productive foundation for the construction of a grammatical theory.

(1957, p.100).

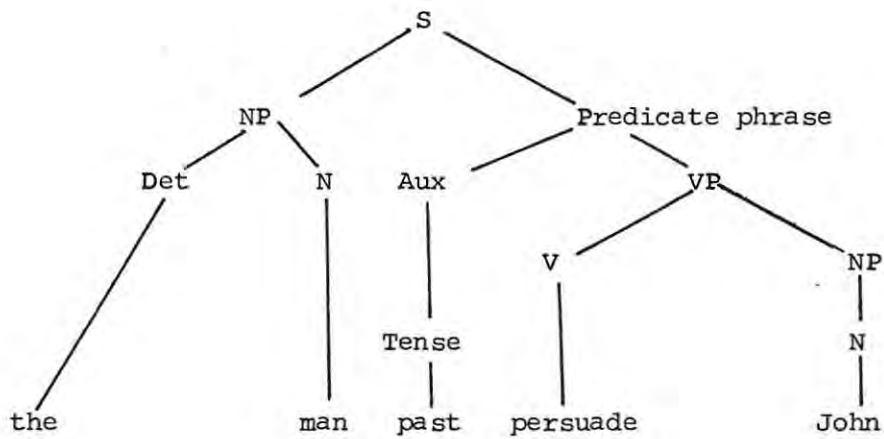
he nevertheless admits:

The fact that correspondences between formal and semantic features exist, however, cannot be ignored. These correspondences should be studied in some more general theory of ... the use of language as sub-parts ... might be a reasonable step towards a theory of the interconnections between syntax and semantics ... in other words, we should like the syntactic framework of the language that is isolated and exhibited by the grammar, to be able to support semantic description, and we shall naturally rate more highly a theory of formal structure that leads to grammars that meet this requirement more fully.

(1957, p.102).

Chomsky provided an abstract method of linguistic analysis, consisting of a set of rules whose aim was to generate, automatically, all and only the grammatical sentences of a language, with a -

structural description of each, to show how the parts form a whole. He based his analysis of tense, true to the structuralist tradition, on the morphological forms, d and s, and \emptyset , seeing future as part of modality, with past and present as unique phrase structure nodes, dominating unary branching, names of morphological facts. Tense is seen as an obligatory subdivision of Aux, dominated by the predicate phrase, as is evident in:

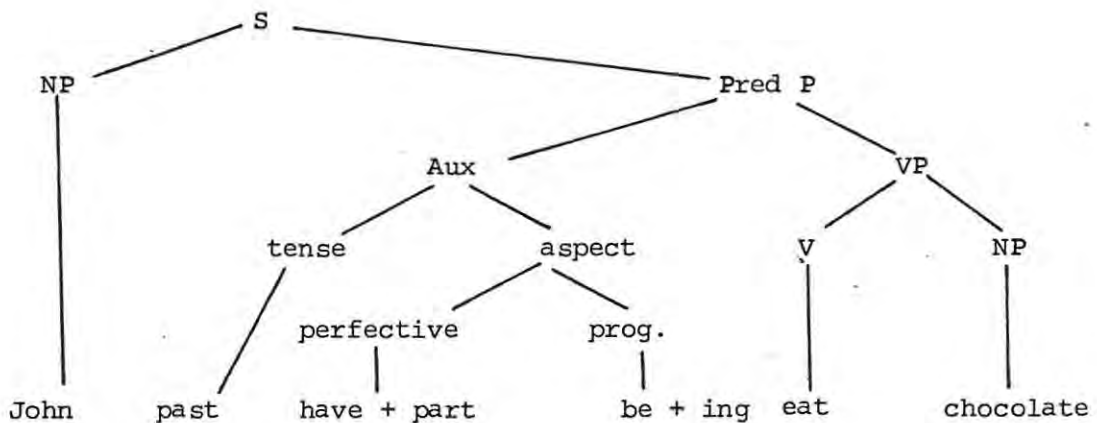


(1971, p.60)

So

(1) John had been eating chocolate.

is



Therefore, in effect, the status of meaning in 1957 with regard to formal description was much like that found in structuralist accounts - it was outside linguistics proper, clearly secondary to

syntactic descriptions. But one of the most vital contrasts with structuralism was Chomsky's recognition of language as a phenomenon of immense complexity; by acknowledging the importance of meaning he paved the way for its systematic reincorporation into linguistic description, and once considerations of meaning are accepted as criteria for evaluating grammars, the need for systematic description thereof is obvious. Just as an interest in language leads naturally to a concern with syntax, so a commitment to syntax leads inevitably to attention to meaning.

4.1 Further Developments

4.1.0 General

Just as Chomsky came to disagree with the teachings of structuralists, so his own students came to resist his ideas, and there is a marked continuity of development.

4.1.1 William Diver (1964)

One of the earliest reappraisals of the structuralist system was Diver's Modal System of the English Verb. Apart from rejecting the structuralists' insistence on formal analysis, he shows that early work on the meaning of verbal forms is full of contradictions because of the variety of its approaches. The apparent polysemy results from the idea that a language's forms must be analysed before meanings can be dealt with, the latter being a secondary consideration.

Diver maintains that we can determine the relevance of formal differences and similarities only when we have a precise idea of what meanings are being communicated - the exact opposite of the procedure to date. In 1963 Diver proposed semantic primes, observing the degree to which logically possible combinations are realised overtly in the syntactic system. His semantic primes are derived

from the observation of tenses and their occurrence with various modifiers, mostly contextual. He proposes the following semantic elements:

1	2	3
past	[indefinite definite]	sequence
present		before
future	repeated	simultaneous with
	extended	after
	distant	

(1963, expanded 1964, p.322).

According to Diver, these can cooccur across columns to their mathematical potential, columns 1 and 3 being disjunctive, as are + and - definite. These elements comprise the semantic field, which is realised by the various elements of syntactic manifestations of the verb: \emptyset , ed, ing, have, had, is, was, be, been, keep, kept, keeping, will, would, used to.

Thus a semantic combination of (past, extended, definite) has two different syntactic realizations:

- (1) He has been walking.
- (2) He has kept walking.

the event indicated by the attached verb took place over an extended period of time, on an indefinite occasion in the past.

(1963, p.161).

Diver admits that there is a gap in his proposed system: there is no (future, extended, indefinite) in English. But, in my view, it is more important to see that just because a given syntactic set fits one semantic reading, it does not imply that the set has been "used up" - there is no one-to-one syntactic-semantic fit in the verb

system, as is evident in:

- | | | |
|-----------------------|---|---------------------------------------|
| (3) He will be eating | [| while you are sleeping (simultaneous) |
| |] | before you can say XYZ (before) |
| (4) He leaves | [| tomorrow (future definite) |
| |] | on Tuesdays (repeated indefinite) |

Diver's semantic analysis has great potential, I feel, and is a firm break from the structuralist tradition. However, he ignores Chomsky's abstract approach. Other writers take it into account, as will become evident later.

Erica Garcia joins Diver in taking the structuralists and traditionalists to task, saying:

The practise of regarding the study of tense as part of grammar has had two regrettable consequences: in the first place, it has delayed recognition of the fact that tenses are not syntactic units, bound by distributional constraints, as the cases of the noun perhaps ... are. Secondly, it has favoured a purely formal approach to semantic analysis. For instance, it is a fact that the English tenses (by which we mean the "indefinite" past and present as well as the future and all "perfect" and "progressive" forms) constitute a clearly defined formal paradigm which is probably best described in Chomsky's generative formula of the English verb phrase. It has therefore been assumed, apparently, that it must and would be possible to find a one-to-one correspondence between the formal units in the paradigm (or generative formula) and the meanings expressed by the various tenses. That this assumption is mistaken is shown by the inconclusive research for "grundbedeutung" for each tense form.

(Thesis, 1964, p.18-19).

4.2 Adverbials

4.2.0 General

From about 1965 a proliferation of new theories about tense arose. With the greater leeway given by the reinclusion of meaning into linguistic description, theories vary from basically structuralistic to highly abstract.

4.2.1 Crystal (1966)

Crystal's analysis of tenses is an example of the structuralistic type, showing a very effective use of formal criteria to reveal the nature of English tenses, which in his view is determined in accordance with the ability of forms to occur with different adverbials. This was the first time, to my knowledge, that any serious attention was given to the relevance of temporal adverbs to the topic of tense, apart from vague comments - Palmer (1965), for example, notices their role in determining time reference, but fails to develop the point.

After Crystal had brought attention to the importance of the co-occurrence of tenses and adverbials, a number of new theories were developed, which ultimately suggested that tense and adverbials are derived from the same deep structure node, the former from the latter; however, it took a long time to reach this point, and the stages of development are interesting. Crystal says:

The mutual restrictions between tense and time adverbials may be outlined by reference to two variables: the number of tense forms which colligate with an adverb, and the number and type of meanings ascribable to each individual colligation. Thus the simplest colligation would be an adverbial which could combine with one tense form only to express one temporal relation. At the other extreme, one

could envisage adverbials which have the potentiality of cooccurrence with all tense forms, each cooccurrence allowing a number of different meanings, depending on verbal and/or situational contexts. English has no instance of either extreme, all cooccurrence relations falling within these two poles.

(1966, p.16).

As we have seen, the regular cooccurrence between temporal adverbs and tense forms have been relatively ignored, or only partially treated in English. Crystal tried to remedy this situation. According to him, the temporal adverb has a basic role in determining the semantic reference of the tense form:

The verbal category time is the linguistic expression of the relation between the action and certain (expressed or not) adverbial action modifiers ... the category time ... expresses a relation between a meaning (the adverb) and a form (inflectional element) ... the relation between adverb and action is a system based on the correlation between the meaning contrasts expressed in the adverbs and the form contrasts expressed in the verbs.

(1966, p.2).

There can be little profit, in my opinion, in any grammatical analysis of relations of individual words one-by-one, as is evident from a sentence like:

- (1) He might have kept on popping in and out during the whole of the day.

One must therefore treat them as a unit.

In Crystal's view, the verb form appears free only when it refers to an actual event in the present, otherwise always being bound to an

obligatory accessory grammatical element. He says any discussion of the meaning of the English verb forms must also encompass the temporal adverbs which he calls specifiers. According to him, the restrictions and possibilities of cooccurrence between tense and time adverbs in English strongly suggest the need to rethink the general approach to the study of English time and tense relationships.

English tense analysis has been complicated, as we have seen, by uncertainty and vagueness about, or total ignoring of, these adverbial relations. Crystal objected to statements to the effect that

(2) I live in America as from next week.

is present tense as future to refer to future - it is not present tense alone, he says, it has an adverb, and its interpretation depends on this specification, which gives the future reference, just as omission thereof would have shown it to be present.

Crystal presents a convincing series of facts and statistics from a concrete, well-defined body of data, to defend his observations. He points out that 34 out of 48 definable situations need explicit adverbial specification, and when it is absent, temporal vagueness ensues, hence the ambiguity of:

(3) I have been to the Old Vic.

which may imply that I have just been, once been, often been, always been, etc.

He classifies the temporal adverbs notionally, observes their co-occurrence restrictions with tense-forms, and then determines the range of verbal time reference and distinguishes the different "meanings" of English tense forms via a correlation between tense form and adverbial clause.

The main divisions are made according to distinctive question forms; then he distinguishes on a semantic level, a referential

cohesion via a categorisation of time relations in terms of semantic distinctive features. On a formal level, the integrity of the group is reinforced by the homogeneity in respect of patterns of co-occurrence with tense.

Crystal first relates tense forms to individual adverbs, the determination of cooccurrence being a pre-requisite for defining adverbial classes of any kind. The adverb is the base form, tense is the compared item, and there is more definiteness with adverbs: an adverb requires an accompanying tense, but not vice versa. He gives the range of meaning occurrences, using "at the moment" as an example:

	[	past descriptive narrative	At the moment I walk in you see...
+1	[	future activity	At the moment I walk in you try to stop me.
	[	past frequency of occurrence	At the moment I walk in...(each time).
+2		removed past	At the moment I walked in...
+3		past frequency of occurrence	At the moment I've walked in (each time)...
+4		pluperfect activity	At the moment I'd walked in...
+5	[	conditional activity	At the moment I'd walk in if I were you.
	[	past frequency of occurrence	At the moment I'd walk in (each time)...
+6	[	future activity	At the moment I'll walk in.
	[	past frequency of occurrence	At the moment I'll walk in (each time it occurs)...

(1966, p.17).

The fact that Crystal takes the adverbial group and says what tense form it combines with, precludes vague semantic descriptions like "general truth", where one is doomed to a hyperdelicate debate about the limits of experience and related issues.

The combination of tense plus adverb solves many such problems. Labels and notional criteria become more realistically and consistently applied when in reference to this combination, especially in relation to concepts like habitual, future and durative. It also makes one more aware of the distinctions in the usage of a tense, e.g. recent versus removed activity, and its bearing on current relevance (cf. Twaddell, 1960) and private versus public time (cf. Joos, 1964).

4.2.2 Other Ideas on Tense in Relation to Adverbials

In 1965 Chomsky wrote his Aspects in which he still saw tense as obligatory in every finite verb (to account for the appearance of do in questions, negatives, etc. as a tense carrier) but proposed in addition that each element of Aux has associated with it certain characteristic adverbs. These adverbs may (and in the present must) according to Chomsky, co-occur with the Aux e.g. past has yesterday, present has right now. This makes tense obligatory whenever adverbs are allowed.

As Gallagher (1970) says, one could preserve this analysis by defining present as \emptyset , allowing for the deletion of right now with statives and habituais (the Aux element, not the verb, selects the adverb); but one would then have to provide a separate account of why habituais only have certain characteristic adverbs. Obviously this idea of Chomsky is not general enough, because there are so many alternative adverbs which must be accounted for.

4.3 More Abstract Generalizations about Tense

4.3.0 General

If traditionalist treatments of tense are characterised by their use of notional criteria for classification, and their registering of intuitions, and structuralist treatments by their need for formal criteria, transformationalist treatments are characterised

by their search for larger, more abstract generalisations about tense in English. Chomsky's approach was unsatisfactory because it was too simplistic, and left too much to be explained: why were the elements of Aux ordered as they were? why was there a distinction between main and auxiliary verbs? why was tense subsumed under Aux? and not under a different node?

Chomsky still assumed the centrality of syntax, with semantics secondary, preferably ignored, as is evident in:

Grammar is best formulated as a self-contained study independent of semantics.

(1957, p.106).

Only by saying semantics is central can we really achieve anything, in my view.

4.3.1 Ross (1967)

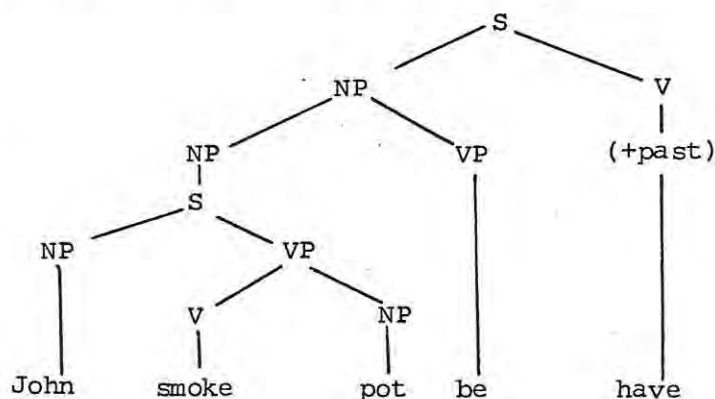
Gradually other ideas about tense made their appearance.

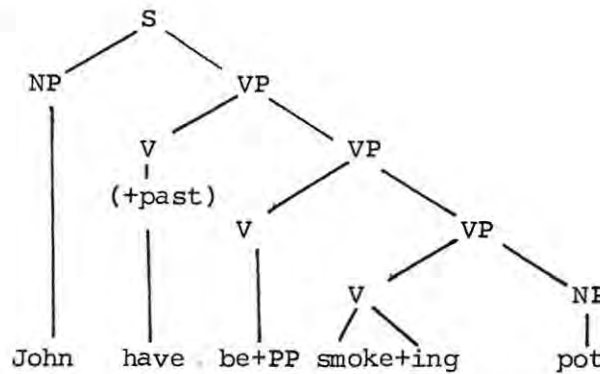
Ross (1967) objected to Chomsky's celebrated analysis, and proposed a number of changes: that auxiliaries be recognised as full verbs, and that tense be seen not as part of Aux, but as a full constituent in its own right, dominated by the sentence node S. Thus Ross's analysis of:

(1) John had been smoking pot.

is made by a transformation from one stage to the other by successive cycles of "subject-raising" and complement placement:

Stage I



Stage II

(As quoted in McCawley 1971, p.98-99).

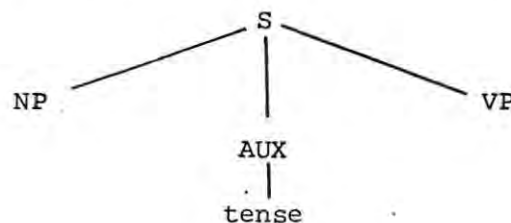
So the idea of layers of embeddings was introduced, and the analysis was given additional support from the fact that it can account for the pronominalisation in:

(2) Sarah said John had been smoking pot, which he had.

- only full syntactic constituents can be pronominalised, and in this analysis tense is just that, whereas in Chomsky's analysis it was not.

4.3.2 Jacobs and Rosenbaum (1970)

Jacobs and Rosenbaum formulated another alternative to Chomsky's proposal, without giving any reasons for rejecting the latter. They put tense as a daughter constituent of the auxiliary, which was, in turn, a daughter of the sentence, not the verb phrase:



4.3.3 Huddleston (1969)

Huddleston returned to the view that adverbials are important to tense analysis - he saw Crystal's ideas on specification as relevant, and saw traditional and structural treatments of tense as inadequate, because they gave no apparent ordering to the features past, modal, perfect and progressive, except as regards the linear sequence of their markers, and because they cannot explain the likeness

between past and present perfect.

Because he sees tense as a ternary, abstract category of deep structure, rather than a binary superficial system, Huddleston is not bound to a one-to-one correspondence between tenses and their surface realisations, nor does he have to restrict tense to those aspects of temporal relations that are marked in the formal structure of the verbal group. He sees deep tense as marked by verbal inflections or auxiliaries, conjunctions, temporal specifiers, or the tense of the next higher verb.

In other words, tense is not necessarily within the sentence in which it appears in surface structure, and Huddleston sees it as derived from two sources: from a feature on the verb of the embedded sentence, and from a feature on the higher verb.

His reasons for holding this view are as follows: he maintains that the structuralist distinction between full and auxiliary verbs is invalid. Their grounds for this distinction were that only auxiliaries have negative contractions, invert with the subject in question, are used in ellipsis, and carry nuclear stress for positive polarity. None of this is relevant to tense, in Huddleston's opinion; need and dare function as full or auxiliary verbs, and have and be satisfy the criteria for auxiliaries when we want to see them as full verbs.

In contrast to the view that tense is a property of the verbal group as a whole, Huddleston sees it as a property of the verb only, stressing that:

... only one full verb (in surface) should not exclude its analysis in terms of two tense selections.

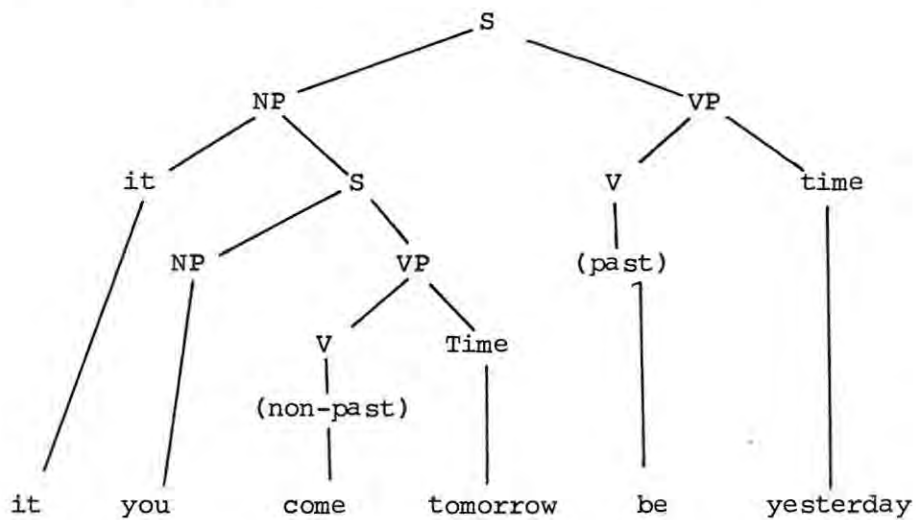
(1969, p.781).

These tense selections are a matter of adverbial compatibility,

each verb having its own tense associated with it, the clue being given by the accompanying adverbial. Huddleston analyses:

(3) Yesterday you were coming tomorrow.

with the above principles in mind; each verbal auxiliary is seen as a verb in its own right, carrying a tense selection with be in the super-ordinate sentence, associated with yesterday, and past tense, and come in the subordinate sentence, associated with tomorrow and non-past, i.e.



(1969, p.782).

This approach enables him to prove the existence of future as a deep tense, with will a full verb, not just a future auxiliary or modal.

(4) Now we will have no money at the end of the month.
has an apparently contradictory association of adverbs, until one recognises that, despite only one so-called "full" surface verb, there are two in deep structure, now associated with will, which has a present tense selection, and at the end of the month associated with have, with a future tense selection.

His reason for seeing tense as part of the verb only is as follows: he says that in:

(5) John killed the tiger.

and

(6) The tiger was killed by John.

(1969, p.781, nos. 12 and 13).

the past tense morpheme is in different places, but in both cases is associated with kill, i.e. there is a difference between the association of tense with a particular element in deep structure and the location of tense markers in surface structure. It is the abstract view, and the attention to meaning, that are vital in his analysis.

They enable him to explain:

(7) John intended coming tomorrow.

(1969, p.780, no.10).

as a future (with come) embedded in a past (intend), and

(8) He was coming to see me yesterday.

as ambiguous, because in one interpretation, yesterday would be in the VP dominated by come, and in another in the VP dominated by be.

Also

(9) In March, John had read only two books.

(1969, p.785, no.34).

is ambiguous according to whether In March is in the higher or lower VP - in the latter case the reading occurred in March, in the other, it could have occurred before March. Only Huddleston's system can explain such ambiguities.

Huddleston's approach enables him to give a more satisfactory account of perfect than Allen's (1966) idea of simple as definite, perfect as indefinite, or Twaddell's (1960) and Palmer's (1965) idea of current relevance (cf. 3.4.3, 3.4.6). Huddleston says:

There is good reason for regarding the simple past as involving just one tense selection, and the present

perfect as involving two - one past and one non-past.

We need the non-past to account for the occurrence of present time specifiers, as in

At present I have read only two of the books.

(1969, p.784).

The past accounts for the meaning of past time contrast with simple present, and the fact that it may also be specified, e.g.

(10) Have you ever been to Athens?

(1968, p.784, no.31).

So, again, adverbial specification has been the vital clue as to which tenses are involved, and the importance of temporal adverbs cannot be stressed enough.

By 1968 the break from tradition seemed to have been final, and a new abstractness developed, in the search for generality and simplicity.

4.3.4 McCawley (1971)

McCawley went a step further than Ross and Huddleston, saying, like Ross, that tense is a higher predicate, but trying, at the same time, to relate this to semantics. The rules he suggests (p.105) are:

Pres \longrightarrow \emptyset
 Past \longrightarrow have

and these apply in the environment of to, a modal, possessive + ing, have + past, i.e. whenever subject-verb agreement has not applied.

McCawley admits that his reason for seeing all auxiliary have's as deep past tenses is based on Hoffman (1966), who saw that in set environments, the difference between past, present, perfect, and past perfect is neutralised as have, e.g.

(11) John is believed to have come at 2 p.m. yesterday.

(12) John is believed to have drunk a litre of beer by now.

(13) John is believed to have already met Sue when he
married Anne.

(11) is simple past, (12) present perfect, and (13) past perfect, all manifested in surface structure by have.

Modals give the same results. McCawley, like Crystal and Huddleston, stresses the association between tense and adverbials:

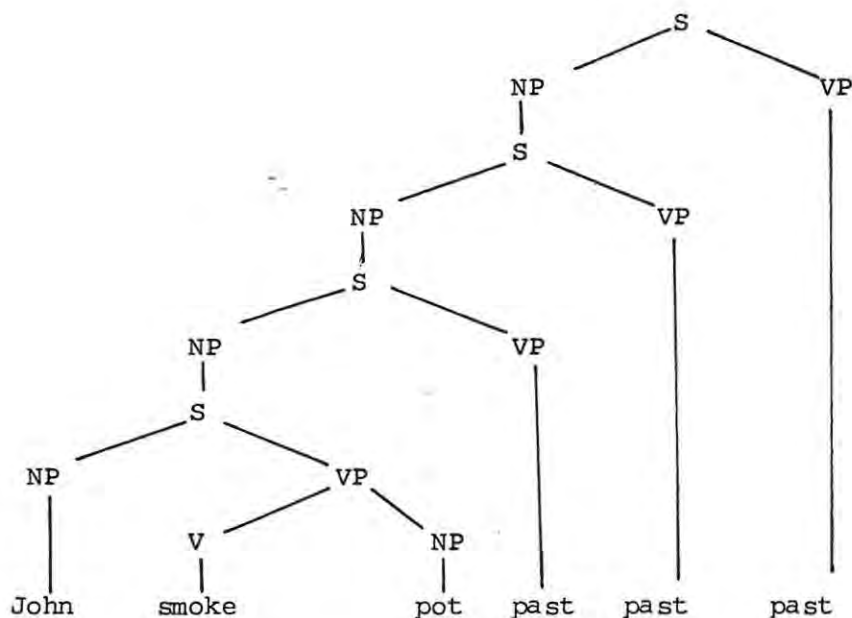
... a grammar will have to provide some mechanism for matching time adverbs with appropriate auxiliaries both in full clauses ... and infinitives ...

(1971, p.100).

This involves his recognition of all auxiliaries as full verbs, so his analysis of

(14) John has been smoking pot.

is



(1971, p.99).

i.e. every past is a have, which is a full verb. The potential number of have's in Deep Structure is limitless (we cannot tell how many there are by studying the surface structure) but the number is seldom

more than three, because of man's limited mental abilities. In a sentence like:

(15) When John had married Sue he had known Gail 5 years before.
 one has to reconstruct the semantic picture: a situation in which John divorces Sue at Z, marries Sue at Y, and knows Gail at X, with X preceding Y preceding Z, i.e. (past past present (\emptyset) past).

McCawley notes the importance of context to an understanding of tense, for the above sentence is only possible if the discourse has mentioned some past time as a reference point, or axis. He also extends Ross's idea of tense being a higher sentence or performative, commanding the other tense, by developing a quantifier-like theory of tense.

He discusses this in relation to perfect, which, he says, is divided into Universal, Existential, Stative and Hot News. His Universal is unlike that of logic, which is unrestricted. In this system (which is by no means new)

(16) $(x) (\text{man } x \supset \text{mortal } x).$

corresponds to a relative clause

(17) Everything which is a man is mortal.

and all is restricted, i.e.

(18) All $x:\text{man}(x)$ Mortal (x).

- a restriction of the quantifier rather than the propositional features - the range of all is confined to man, and the scope is is mortal. This explains the idea of grammarians that the perfect means duration of a state up to the present, as exemplified in:

(19) They have lived here for ten years. (and still do).

where an adverb is required unless the lexical meaning of the verb or context provides the temporal "universe". This is the case in:

(20) He has lived a good life. (i.e. during his life).

- (21) You have outstayed your welcome. (outstay means for too long).

The universal of logical exposition does not cope as efficiently with restrictions like these, but McCawley's theory can:

- (22) I have known Max since 1960.

has a universe of discourse stretching from 1960 to the present moment, and only in this particular universe can one say

- (23) I have always known Max.

with continuity implied, i.e.

- (24) All x :time x : 1960 to present x (I know Max at x).

So we have two propositional functions, both with variables x . In the first part we have a present tense, as well as in the temporal adverb, which is derived from the part of the subscript 1960 to the present, i.e. since 1960. When we combine present and past we get present perfect, have known. Other names for this have been Continuative Perfect, Inclusive Perfect, etc.

McCawley maintains that this Universal perfect is different from other types of perfect.

His second perfect is Existential, exemplified by his sentence

- (25) I have read Principia Mathematica 5 times.

(1971, p.104, no.32).

Here no continuity is implied, only discrete events, and the meaning is: at this moment 5 times exist when I read Principia Mathematica.

In McCawley's terms this would be:

- (26) ($\exists x$)_{time x} I read (past) Principia Mathematica at x .

or

- (27) (\exists x $\overset{5}{\text{time } x}$) (I past read Principia Mathematica at x).

This corresponds with Zandvoort's (1932) Experiential Perfect. McCawley demonstrates the dependence on context and lexical meanings for

grammaticality. One can say:

(28) Musicians have been killed in cars.

but not

(29) * Ferdinand Smith has been killed in cars.

because of the speaker's extra-linguistic knowledge that a man is only killed once. One could remedy this by making cars singular.

This theory of Existential Perfect is another manifestation of Ross's and Huddleston's idea of the combination of two tenses: present residing in the range of the Quantifier, past in the propositional function - the quantifier and variable simply require binding. So the vague theories of "current relevance" are explained by the subtle relationship to the present in the quantifier.

This Existential Perfect is very clearly related to existence, hence the heated arguments of Sweet (1900), Curme (1931), Jespersen (1933), and Chafe (1970) about the so-called "alive" requirements of the perfect (cf. 3.6.5). We have seen the different suggestions revolving around the need for present results to persist, or for the subject to refer to a living individual. Anderson (1974) suggests that it is a matter of the tense of the existential of that noun having to agree with the tense of the next higher verb. The following sentences exemplify the problem:

(30) * The Hittites have produced few great sculptors.

(31) The Hittites produced few great sculptors.

(32) * Einstein has visited Princeton.

(McCawley 1971, p.106, no.40).

(33) Einstein visited Princeton.

(34) * The late president visits his mother often.

(35) The late president visited his mother often.

(36) Che is a hero of Dickens.

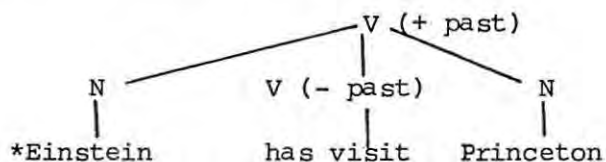
(37) * Che has been a hero of Dickens for some time.

(38) Jespersen says it all.

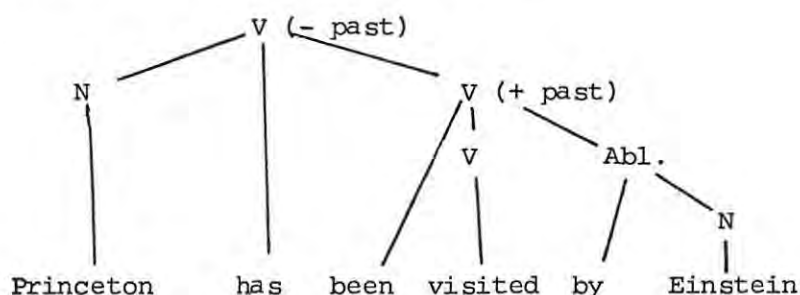
(39) Jespersen has said it all.

Anderson says, vaguely, that the perfect is a sort of present tense form, and that the ungrammaticality above is due to a failure of the existence of the referents to agree with the predicate's tense, or be present. The only exceptions are evaluative predicates (36), or sentences describing posthumous influences ((38) and (39)).

In other words, the existential tensing of an argument agrees with that of the tensed predicate it is most immediately subordinate to, unless it is "present". (32) is ungrammatical because Einstein is a past existential and the predicate is present. Anderson shows this diagrammatically:



This constraint is satisfied in:



Anderson seems to be on the right track, but has gone slightly astray, because it is not only a matter of existentials and tense agreement, but also a matter of presuppositions, factual and extra-linguistic knowledge, contexts etc. - i.e. semantics. Hence:

(40) Frege has contributed a lot to my thinking.

(41) Frege has been denounced by many.

(42) Frege has been frightened by many people.

(McCawley 1971, p.106, nos.42-44).

McCawley points out that even stress influences grammaticality:

(43) Einstein has visited Princeton.

(McCawley 1971, p.106, no.40).

has no "alive" requirements, because topic, not subject, is directly related to presuppositions, and the topic is "events of visiting", not "events of Einstein's visiting". As McCawley puts it:

... the presupposition in an existential present perfect thus appears to be that the range of the variable which the existential quantifier binds, is a period during which the event or state designated by the propositional function in the scope of the quantifier can happen or be the case. Since the present perfect can only be used if the range includes the present, the presupposition is that the present is included in the period in which the designatum of the propositional function in question can happen or be the case.

(1971, p.107).

So it is not a matter of the subject being alive, but the choice of verb and topic, context and extra-linguistic knowledge. Contrary to Leech (1969), who says:

(44) Have you seen the Monet exhibition?

(McCawley 1971, p.107, no.48).

implies that the exhibition is still running, while

(45) Did you see the Monet exhibition?

(McCawley 1971, p.107, no.49).

implies that it is over, McCawley says the latter is incorrect - it may have been asked in the following context:

(46) You said you were going to see it yesterday. Did you see it?

(47) No, but I'll see it tomorrow.

Also, one can say:

(48) Many people have climbed Mt. Everest. Marco Polo has climbed it.

but not:

(49) * Many people have eaten oysters. Marco Polo has eaten them.

Again this is a matter of topic and extra-linguistic knowledge; the former is a possibility of continuous challenge and achievement, the latter entails neither challenge nor achievement, unless oysters were replaced by strychnine. The two events seem to have to be of equal importance.

McCawley's third perfective he calls Stative (equivalent to resultative). It is not universal because it lacks continuity, and it is not existential because it does not imply separate events; instead, it corresponds to a semantic representation in which a description of the event is embedded in a context like: "the direct result of _____ continues", i.e. a source for past embedded in a source for present, e.g.

(50) I can't come, I have caught a cold.

This implies that I still have a cold - the process of catching was a single past event; the result persists. Of course there are ambiguities:

(51) John has gone to the office.

(McCawley 1971, p.108, no.55).

could be existential in the right contexts, or stative, where the effect of his going, not of his being at the office, is important.

Also:

(52) Have you seen my slippers.

(McCawley 1971, p.109, no.58).

could be stative, if interpreted as a question as to whether the direct result of having seen them continues (i.e. "do you know where they are?") but existential if interpreted as a question as to whether one has ever seen them, whether one knows what they look like. In the latter case "Yes, six months ago" would be an acceptable reply.

Finally, McCawley discusses the fourth type of perfect - Hot News perfect. This, he says, is used when what is reported has the status of news. It is thus related to Existential Perfect because the person telling the news presupposes that his hearer has not experienced it yet; he bases the range of the quantifier not on his own presuppositions, but on his idea of the hearer's presuppositions. So in:

(53) John has just been killed.

for the addressee, the period in which John could be killed extends indefinitely into the future, thus including the present. As McCawley says

Perhaps the only hope for an analysis of this use ... is to introduce a quite ad hoc principle that the period in which X is supposed "available for happening" is always extended forwards so as to include the time that it would take for news of its happening to get around [to the addressee].

(1971, p.109).

McCawley also suggests that tense is related to pronominalization: like a pronoun, a tense refers to an antecedent, either a preceding super-ordinate tense, or a contextually implicit axis or reference point, or a temporal adverb. Perhaps his most important suggestion is that tense is a pronominal form of a temporal adverb. He demonstrates how, in:

(54) Cecil was tired last night.

Here there is both adverb and tense morpheme, corresponding, but semantically making only one reference to the time involved. As he says:

... my suggestion that tenses are pronominal in nature would entail having a reduplication rule which added a pronominal copy of every time adverb. There is nothing to prevent this pronominal copy from being added in predicate position, that is, the time adverb reduplication transformation could be so formulated as to create derived structures in which tenses appear in main-verb position and those constituents which will give rise to explicit time adverbs will appear in other positions than main verb position.

(1971, p.111-112).

It is this hypothesis which was to be developed by later writers on the topic: Kiparsky (1968), Gallagher (1970) and Hausmann (1972).

4.4 The Growth of the Importance of Semantics

4.4.0 General

The general trend developing in the sixties and early seventies was that tense could not be a feature on a verb in deep structure, but that it must be a daughter of the sentence, possibly even outside the sentence in which it appears in the surface, i.e. that tense is a higher predicate of the sentence in which it appears in surface structure, always in a command position.

Simultaneous with this idea, is the development of a closer association between adverbials and tense, the former slowly assuming more and more importance, and almost surpassing the latter.

What has happened is that semantics has become a systematic part of a linguistic description, providing impetus for a number of

important changes in syntax. Linguists now try to give a principled basis for the definition of linguistic meaning, crucial to the incorporation of semantics into grammar. It represents a cautious expansion of the domain of linguistic theories, which had regarded semantics as a complementary, secondary, subservient part of the grammar; meaning had become an "official" part of a linguistic description, with syntax independent, and divided into deep and surface structure, the former providing the exclusive basis (in the standard theory of Chomsky (1971)) for semantic interpretation, with the general aim of linguistics being to state the relationship between sound and meaning.

The next development was a special interest in semantics, stressing its importance. The increasing concern with the status and function of meaning in a linguistic description has resulted in varied proposed revisions of the theory of Chomsky's Aspects, ranging from relatively minor to quite drastic adjustments. In each, semantic considerations are primary in motivating changes in both syntax and semantics, thus indicating a shift in the secondary position of semantics.

As Howard Maclay put it in his overview:

... the common denominator is a conviction that semantic criteria are at least equal in importance to other factors in justifying solution to linguistic problems, and that semantic problems are an appropriate beginning point for a linguistic investigation.

(1971, p.176).

The proposal is that syntax and semantics cannot be separated, so the existence of a separate level of syntactic deep structure is untenable, in his view. The goals of linguistic theory have developed to the

point where they include matters which had previously been entirely ignored, or relegated to some non-linguistic area such as extra-linguistic knowledge, or human behaviour.

4.4.1 Seuren (1974)

Seuren has what one may call a semantico-logico-syntactic approach, and his analysis is ultimately not very different from McCawley's, except in terminology. He, too, sees tense and adverbs as higher predicates, permanently in a command position, and he hypothesises two main deep constituents in every sentence: operator and nucleus.

He bases his analysis on the differences of cohesion between the parts of a sentence: some extend semantically over the whole sentence, others form part of smaller constituents. Those elements whose order affects the sentence's meaning, and which disturb the regular effect of transformations (which are not supposed to affect meaning) are the operators: negatives, $E(x)$, $A(x)$, tense, and adverbs. The rest is in the nucleus.

According to Seuren, every sentence has at least two operators: a sentence qualifier (e.g. assertion, question) and a tense operator. In other words, tense is seen as obligatory, and the nucleus, on which transformations operate, is tenseless. This is parallel to McCawley's quantificational theory of range and scope, except here the range is the operators, the scope is the nucleus. As Seuren points out, operators give the natural answer to the question of scope, because they extend semantically over all elements to the right of them (including other operators).

He continually stresses that position affects meaning, the ultimate position of tense and adverbs having great latitude, so

It is, therefore, not unreasonable to inquire whether there is grammatical evidence in support of the

assumption of operators of tense.

(1974, p.145).

He envisages five tense operators:

- a) Past (x), where x is the optional temporal adverb of past time.
- b) Present (x).
- c) Future (x).
- d) Perfect (x).
- e) Universal.

Pluperfect is seen as a combination of past and perfect. Throughout, Seuren stresses the close link between the tense and adverbs. Once again we find the need to distinguish between time and tense: every sentence qualifier is always present time, says Seuren, and

... the simplest description of tense qualifiers is given by ascribing to them a semantic property of being placed in time.

(1974, p.148).

so the five tenses are distinguished by their relation to the preceding operator(s), e.g. present means simultaneous with its time, past means previous to its time, and universal is simply independent of its time. If no overt signal of tense is given, it is assumed to be present, the moment of utterance, in relation to which the other tenses always operate.

So there is a difference between nucleus, propositions and sentence: the nucleus is the lexical items alone, purely relational; the sentence is the deep structure with at least one sentence qualifier to make it performative; the proposition is the nucleus plus at least one operator (tense) but never a sentence qualifier.

Modals, negatives, quantifiers and tense all interact, and are always placed in a time determined either by their preceding sentence

qualifier (always present tense) or by an intervening tense operator.

So, as Seuren puts it:

... tense qualifiers are a useful instrument for the description of deep structure.

(1974, p.148).

The order of tense and adverb influences the meaning:

- (1) John may have promised that last year.

Ass Poss Past (last year): J promise that.

- (2) John could promise that last year.

Ass Past (last year) Poss: J promise that.

and more than one tense operator, even when separated by other operators, gives sentences like:

- (3) It seemed that John had been away.

Ass Past: it seem that (Past : J be away) - embedding

- (4) It seemed that John was away.

Ass Past: it seem that (present : J be away).

English transformations operate on time, not tense, in that clauses, so the sequence of tense rules make present past. Because, according to Seuren, perfect has no past time entailment, the embedded present remains present in:

- (5) I have heard that this is true.

Ass Perf: I hear that (Pres: this be true).

This system gives a simple description with a high degree of semantic adequacy, and as Chomsky said in Semantic Syntax, a transformational grammar relies on the simplicity criterion of a maximum yield at a minimum cost.

Thus it is that grammarians have looked for other possible generalisations, one of which is the theory that nouns carry tense as well as verbs.

4.5 Nouns as Tense Carriers

4.5.0 General

We have seen how Jespersen points out the three tense forms of one nominal root (1924, ch.2) as exemplified in:

bride —————> wife —————> widow

and the effect of prefixes like ex-, and adjuncts like future, late, prospective, and present. In some languages tense is a nominal inflection in toto. This is the case in Eskimo, where puyoki means smoke, puyuthluki means what has been smoke, and puyugkaki means what will be smoke (Hockett, 1956).

In Hausa (Hodge 1963, p.4) pronouns are inflected to mark tense, e.g.

(1) The spear hit the bull.

= Spear it - past hit the bull.

and of course Whorf (1956) said:

... after long and careful study and analysis the Hopi language is seen to contain no words, grammatical forms, constructions or expressions that relate directly to time or to past, present or future ... no reference to time ... [yet] is capable of accounting for and correctly describing in a pragmatic and operative sense all observable phenomena of the universe.

(1956, p.57-8).

4.5.1 Anderson (1973)

It is important to establish at this point whether nouns and adjectives of English really do carry tense. A look at the facts strongly suggests that the reason for the temporal connotations of some nouns and adjectives is that they come, ultimately, from verbs, and retain part of that verbal origin. Unfortunately this fact has

caused a number of people to be led astray, Anderson among them, in my view. Anderson claims that nouns, and not verbs, carry all tenses, and that the tenses only appear on the verbs in surface structure by a process of superimposition, which he calls ghosting.

He is correct insofar as tense is probably not directly associated with the verb in deep structure, I feel, but what everyone has been trying to prove is that it is not directly associated with any constituent at all save S, in deep structure, that it is a constituent in its own right - a superordinate predicate.

Anderson focusses on semi-generics, which are temporally limited, unlike generics, hence

(2) That man is a baker now.

is grammatical, while

(3) * That rhino is an animal now.

is not. Also, in

(4) The dodo was a bird.

versus

(5) Fred was her son.

in (4) we appear to have tense in the verb; but the pastness is obviously not predicated of the "birdness" of the dodo - that predication remains generic; the pastness is rather predicated of the existence of the subject. This, he says, explains the following:

(6) Fred was a dentist, but he isn't any more.

(7) Fred used to be a dentist.

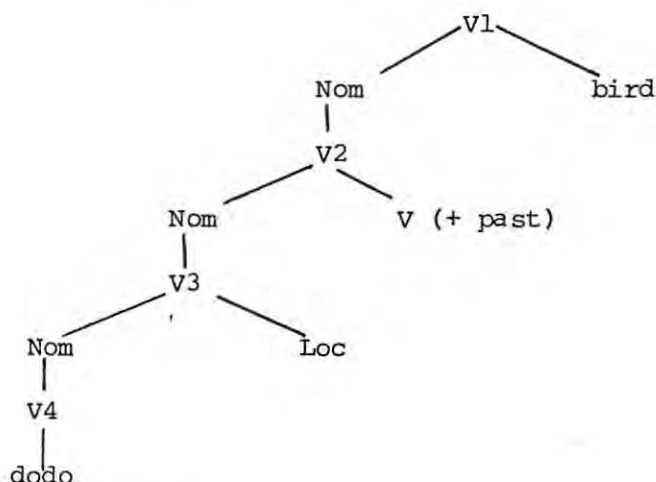
(8) * The dodo was a bird, but it isn't any more.

(9) * The dodo used to be a bird.

According to Anderson, pastness is not attributed to something habitual of the subject, so the pastness is not part of the surface predication, but of the existence of the subject noun. So (4) =

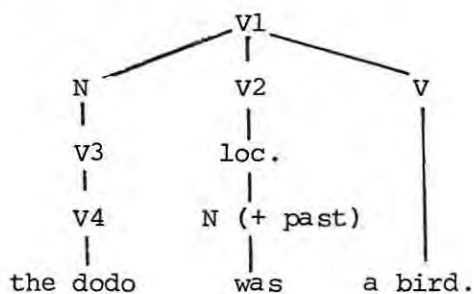
(10) The-existing-in-the-past-dodo be a bird.

Anderson suggests the following as the Deep Structure thereof:



(1973, p.485).

According to him, the tense reference comes to be associated with the copula by a process of superimposition and pruning, ("ghosting") which occurs only in the absence of a tense, i.e. in the case of a generic proposition. So we get:



Anderson says it is the tense specification of the subject that undergoes ghosting, e.g.

(11) Fred was Mary's uncle.

becomes

(12) Mary is Fred's niece.

with present of Mary ghosted across. In other words, a tensed existential must accompany any definite substantive predicate subordinate to a referring noun. The tense is either unmarked present, or agrees with that of the predicate whose argument it is. So while nouns governed by a quantifier have an associated superordinate

existential, definite and generic nouns show an existential subordinate to them, except in the case of the predication of non-existence, where no subordinate existential is evident, e.g.

(13) Fred is dead.

or

(14) * The late president is dead/alive.

This argument seems to me to be rather vague and arbitrary, and lacks substantial evidence. What is plausible, however, is the idea of a clause underlying a noun, and it is this which gives any temporal associations which may be there.

4.5.2 Emmon Bach (1968)

Emmon Bach gives very convincing evidence that nouns are indeed derived from relative clauses, because he finds traces of auxilliary in the noun phrase, i.e. traces of tense, and he shows how there is often ambiguity as to exactly which tense it is. Thus:

(15) I was watching that pretty girl.

may be narrative tense or not, i.e. pretty then, or now, and

(16) I knew the pretty girl when she still wore braces.

is more likely to mean now, but not necessarily so.

As Bach points out, reduction of the tense element is not permissible unless it is retrievable from the literary or extra-linguistic context. Hence:

(17) We hadn't bought our house yet.

refers to the house we have now, and

(18) Our house was on 67th Street.

refers to a house we had then. Further examples he gives are:

(19) Before I met my wife, she was a nurse.

meaning the wife I have now, unless I married by mail, and

(20) In order to run a 4 minute mile, a man must start training at 6 years.

i.e. one who is a man now, not when he was six.

Hockett provides supporting evidence for Bach's idea by showing that Potouratomi has tense carried by words which correspond to our nouns, as in ncimanpen - my former canoe. (1956, p.238).

4.5.3 Avery Andrews (1971)

Andrews also examines the understood tenses of reduced relative clauses and sees that they may be either present or simultaneous with the time of some other dominating sentence. These facts parallel Ross's 1970 analysis of declarative sentences, with a dominating verb of "saying" in the present tense, in which all subsequent tenses are embedded as complements. Hence the interpretations of the following:

- (21) The cat making odd noises is eating cookies.
- (22) The cat making odd noises was eating cookies.
- (23) The cat making odd noises will be eating cookies.
- (24) He will discover that the cat making odd noises was eating cookies.
- (25) He discovered that the cat making odd noises was eating cookies.

The participially reduced relative in (21), (22) and (23) is present, the time of utterance, so in (21) there were no noises in past or future, in (22) not in future, and in (23) not in past. In (24) and (25) the noises may be in the present, or at the time of cookie-eating, or at the time of discovery. So the tense of a reduced relative is simultaneous with the tense of some dominating sentence, therefore always recoverable.

The facts of tense interpretation also provide an argument for the rule of Raising (Rosenbaum 1965, Kiparsky 1968).

- (26) Professor Y is suspected to have kissed X.

(27) X is suspected to have been kissed by Professor Y.

(28) Professor Y is suspected of kissing X.

(29) X is suspected of being kissed by Professor Y.

The first two are synonymous, the next two are not. In the first two the subject of the complement sentence is raised to subject of the matrix and Passive is applied. But in the other two, we have an NP-sentence as deep structure complement, the subject of the complement having been deleted because of identity. In the first of these, Professor Y is object of suspect, and in the last, X, while Professor Y is the agent. So the subject of the first two originates from an embedded complement sentence, and the subject of the last two in the matrix sentence just passivized. So raising occurs in the infinitive construction with suspect, and not with the gerund. So

(30) We suspect the cat making odd noises to have been eating cookies.

(31) The cat making odd noises is suspected to have been eating cookies.

(32) We suspect the cat making odd noises of having been eating cookies.

(33) The cat making odd noises is suspected of having been eating cookies.

In (30) and (31) the noises may be present or past (contemporary with eating), but in (32) and (33) they may be only present. This is because in the first two the noun phrase the cat... is a constituent of the embedded sentence, with its main verb eat, but not in the last two.

Languages like Greek and Latin have tensed distinctions for active participles, and Jespersen (1924) points this out (p.280). However, in English the present participle gets its temporal reference

from a dominating verb, e.g.

- (34) I see/saw/will see a man sitting there.

4.5.4 Hudson (1973)

Hudson goes so far as to suggest that reduced relatives are not tenseless because they can refer to past even if the main clause does not. He says the sentence:

- (35) Books published before the 19th century are expensive to buy.

has a deep clause of books that were published, despite the present tense of the main verb. Further:

- (36) Books published since 1950 are often paperbacks.

has an underlying perfect have been published, in his view.

In other words, Hudson opposes the views of Bach (1968) and Andrews (1971). But if one examines those sentences more carefully, one sees that each has a very clear adverbial. We have already seen the close association between adverbs and tense, and the dependence of the latter on the former. Here is another example. Before the 19th century is very obviously past, while since 1950 is very obviously perfect, with its clear incorporation of present time.

Thus the earlier thesis seems to stand: tense in reduced relative clauses is always retrievable from superordinate verbs or adverbs, and what looks like a noun denoting a temporary state (e.g. pregnant, virgin, neighbour) always has an underlying reduced relative clause.

4.5.5 Seuren (1974)

Chomsky (1972) says that derived nominals do not contain the element tense, and in Some Empirical Issues (1972, p.159) he says they do not contain elements that are unique to verb phrases, especially not tense and aspect. Seuren objected to this view, saying

that despite Chomsky's assertion that nouns only come from nouns, never verbs, some can come from either, e.g.

(37) The proof took two hours. (verb)

(38) The proof is on page 77. (noun)

Seuren's alternative to Chomsky's syntactic trees is a highly semantic approach, with syntactic lexical trees, with ordered features and hierarchies of labelled constituents. This stress on order is important - everything is seen by Seuren as a matter of command and precede. In Cambridge Colloquium on Formal Semantics (8 - 12 April, 1973) he says in Referential constraints on Lexical Items that if a referential expression R commands a node A in the semantic representation of a sentence, then the only lexical island absorbing A must still be commanding the constituent R whose head is derived from R or from any expression making the same reference.

So Seuren hypothesises that kill means cause to die, and that:

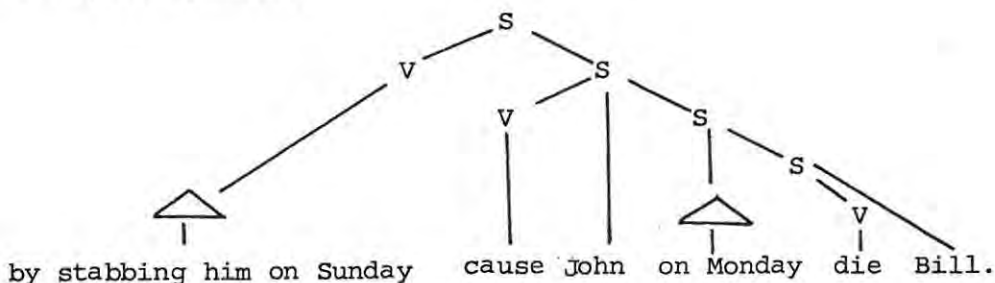
(39) John killed Bill.

implies that Bill was alive, is now dead. So kill is, in his view, cause to change from being alive to being dead, a transition at a particular point. In

(40) John caused Bill to die on Monday by stabbing him on Sunday.

(41) * John killed Bill on Monday by stabbing him on Sunday.

the temporal adverb and by-phrases are, according to him, derived from higher predicates or operators, so by stabbing him on Sunday is a complex operator:



The intervening operator on Sunday prevents the unification of cause and to die into kill, hence the ungrammaticality of (41).

There is, of course, much controversy over this theory, but it does explain the difference between:

(42) John caused Bill to die while shaving.

and

(43) John killed Bill while shaving.

while shaving can only be the highest operator in the semantic analysis, so a form of Equi-NP deletion can only have deleted the subject John from the while phrase.

Seuren is not the only one to suggest that there may be a rule whereby no material can be made part of a lexical item if, in the process, it moves into or out of the scope of an operator which contains a referring expression. McCawley agrees. So lexical items are free to contain incorporated intentional objects, e.g. beer in brew (to make beer), but never an object which contains a referring expression (*make the beer) because after incorporation into the verb, the referring expression would no longer command the lexical item, the new verb of which it has become part.

4.5.6 Gallagher (1970)

By 1970 the trend had been established that:

- a) tense was far more abstract than had previously been thought to be the case, and is not merely the difference between want and wanted.
- b) tense is probably a higher predicate of the sentence in which it appears in surface structure.
- c) there is a very close relationship between tense and adverbs.

We have seen these ideas tentatively expressed by Ross (1967), Huddleston (1969) and McCawley (1971). Gallagher also speculates

on the problem. She points out how easily one can categorise tense under auxiliary, higher verbs, lower verbs, or the sentence itself, and so maintains that it is not a separate and obligatory grammatical entity, despite the views of tradition. In her view, adverbs take undeniable precedence over tense, and this opposes Chomsky's Aspects thesis in which tense is an obligatory component of Aux (to account for the presence of do in questions, negatives etc.). Chomsky says each element of Aux has associated with it certain characteristic adverbs that may co-occur with this Aux element.

Such an idea is not acceptable unless one makes some adjustments, for statives and habituais cause problems; if present tense chose right now as its adverbial specifier, we would expect the following pairs to be synonymous. But the last three pairs are not.

- (44) John is signing a letter.
- (45) John is signing a letter right now.
- (46) John is a man. (stative)
- (47) * John is a man right now.
- (48) John works hard. (habitual)
- (49) * John works hard right now.
- (50) John comes up to me. (historic)
- (51) * John comes up to me right now.

So one would have to allow for the deletion of right now with statives and habituais (the auxiliary, not the verb, chooses the adverb) and provide a separate account of the characteristic adverbs of habituais, e.g. often.

According to Gallagher the only alternative is to define present as that which is generated with the temporal adverb right now - a rule would copy the features of the adverb onto the verb (rather ad hoc in my opinion) ultimately giving the morphological signals of the

present. Since statives, habituals and future have characteristics of their own, they would become constructions "just happening" to occur with the endings s and \emptyset . So instead of defining tense and predicting adverbs by a feature of Aux, we would define each tense by the adverb of time, eliminating the node tense.

In addition to these somewhat arbitrary rules, Gallagher erroneously maintains that tense is not obligatory, and that some verbs are simply without tense in deep structure. Her support is the fact that some sentences will not take adverbs of time, and of course, these are in her view, prerequisites for tense, e.g.

(52) John said the monument was heavy * in 1943.

(53) The man who sold the house knew more languages * at noon than I did.

(54) Who was that?

(55) Whoever stole the book has strong arms * right now.

This is obviously invalid. Other adverbials would be acceptable, in the right contexts - it is all a matter of extra-linguistic knowledge. (52) would be perfectly acceptable if the specifier is taken as belonging to the higher verb say. It cannot go with be heavy because, as speakers of English, we know that monuments do not change in weight over the years (though one could imagine one which did, in which case a past adverbial would be acceptable). In this case we are dealing with a generic or stative present tense. As technology develops, more and more can be said, so

(56) John said the secretary was blonde in 1943.

would not have been possible in 1143. (53) is ungrammatical because knowing languages is also something relatively permanent; an adverb like by the age of thirty would be acceptable.

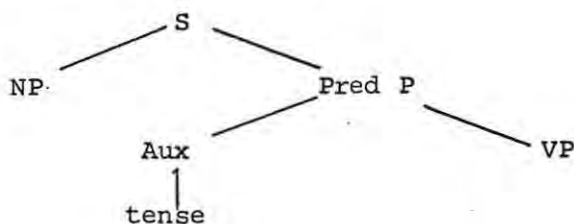
Gallagher also says that the fact that some verbs are tenseless explains why statives do not occur in commands - they do not take temporal adverbs, and imperatives require future verbs. Again, this is rather a matter of the lexical meaning of the statives of extra-linguistic knowledge: one cannot use be tall as an imperative, not because it is tenseless but because one cannot temporally control such a phenomenon. She also says this tenselessness of some verbs removes the problem of deletion of meaning - bearing elements in reduced relative clauses e.g.

(57) The foul-smelling dog hid under the table.

We have already seen, however, that whatever is deleted is always recoverable.

Gallagher's main hypothesis that tense comes ultimately from adverbials is not untenable, and it is this thesis which received attention in the next few years. She suggests that the rules involved could be fairly simple: one to copy the marking of the temporal adverb onto each verb not governed by a temporal adverb; another to make remaining "tenseless" verb forms present; a more complex one to delete time adverbs not appearing in the surface; and rules for copying the tense marking onto the verb.

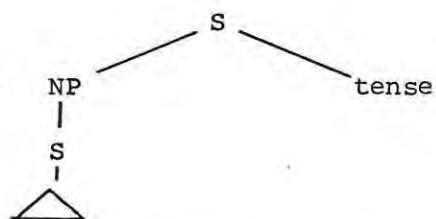
In M.V. Aldridge's (1976) discussion of the conflicting theories, he suggests that they are (minor details aside) what Chomsky would call "notational variants". It is his belief that there is no essential difference between, for example,



and

(tense) (NP VP)

and



they are just different ways of showing the same thing.

4.6 Summary

I have dealt briefly in Chapter 4 with the theories of Diver (1964), Crystal (1966), Ross (1967), Huddleston (1968), Gallagher (1970), McCawley (1971), Anderson (1973), Hudson (1973), and Seuren (1974) - and others.

What we have seen is a marked continuity of development from one man's ideas to another's, all pointing to the fact that tense is probably an abstract higher predicate of the sentence in which it appears in surface structure, closely related to adverbials. It is the latter aspect which I intend expanding in Chapter 5.

CHAPTER V

TENSE AND ADVERBIALS

5.0 General

In order to show that tenses are ultimately derived from adverbials, I shall try first to show that tense is a higher predicate in deep structure, always in a command position, outside the sentence in which it appears in surface structure; and secondly I shall try to show that one can say the same thing about adverbials of time. If this is indeed the case, and the two are more or less identical, it would seem feasible to derive one from the other.

5.1 Tense as a Higher Predicate5.1.0 Kiparsky (1968)

Kiparsky analyses Indo European tense and mood, and provides a characterisation of English tense, in order to suggest that tense might be a feature of the verb in English, at least at the point of conjunction reduction. In actual fact, an extension of his analysis provides evidence that tense, though possibly ultimately a verbal attachment, is actually derived from a much higher constituent. I shall therefore discuss his theories in detail.

Kiparsky says:

... here [in the daughter languages of Indo European] the categories in question [tense] are represented not as separate constituents, but as syntactic features on verbs. Chomsky (1965, p.170) has shown that such a feature representation is required by the phonological characteristics of inflection in modern Indo European languages like German. But it also explains certain syntactic

properties of inflectional categories. Thus, representing tense as a feature in English explains why tense is not, indeed, subject to conjunction reduction in English.

(1968, p.44).

e.g.

- (1) He saw the show and she saw the show. \Rightarrow
 (2) He saw the show and so did she.

In actual fact there is strong evidence in Kiparsky which suggests that English tense should actually be outside the sentence in which it appears in surface structure, if one revises his conclusions slightly. Kiparsky's basic premise is that:

tense and mood were adverbs in Indo European ... in the deep structure of sentences they were separate minor constituents ... rather than features on other constituents. It doesn't necessarily follow ... that they were represented in Indo European, or even at some pre-Indo European stage, by separate words in the overt form of sentences ... what is at issue is the syntactic nature of certain inflectional categories of Indo European.

(1968, p.45-46).

He says that in English, tense is no longer separate, and should indeed be analysed according to Chomsky's analysis of German nouns (1956, p.170ff), i.e. a syntactic category like gender, number, and case, features rather than item and arrangement constituents.

Kiparsky says:

... the analysis as separate constituents arbitrarily imposes on the language a pseudo-agglutinative character which cannot be justified.

(1968, p.44).

He claims that further evidence that tense should be a verb feature comes from the conjunction reduction transformation: Vedic, Celtic and Old Latin have a form of conjunction reduction which reduces constituents to their "unmarked" (injunctive) form, sometimes another mood, and sometimes present tense, e.g.

- (3) At daybreak he attacked the town and takes it.

(Old Greek - literal translation, Kiparsky 1968, p.31).

- (4) After that he arose and exults.

(Old Irish - literal translation, 1968, p.31).

- (5) They leaped on their horses and ride down ... then they saw that king Athils rode after them and wants to kill them.

(Old Norse - literal translation, 1968, p.31-32).

According to him, tense and mood derive historically from deep adverbs, and he shows how, in Indo European, there was a conjunction reduction of tense and mood from left to right, with the "injunctive" as the linguistic form whose unique function was to act as the unmarked exponent of a category.

So Kiparsky says tense and mood were not features, but constituents, specifically adverbs. According to him, reduction, which deletes recurrent syntactic formatives (constituents above word level) not recurrent word units, deleted extra occurrences of tense and mood in Indo European, leaving only one, usually the first of a coordinate structure, while the rest became injunctive, e.g.

- (6) When they see so many good things, they will turn to them and after that there remains for us ...

(Old Greek - literal translation, 1968, p.32).

- (7) Though Christ be in you and the soul is alive thereby ...

(Old Irish - literal translation, 1968, p.34).

(8) I fear they might revile him and I shall be badly distressed.

(Old Greek - literal translation, 1968, p.34).

Because person, number and voice were not, even then, constituents, they were retained in the injunctive. Although, Kiparsky says, injunctive did not survive in English (though clear traces are evident in Masai, which has \emptyset tense for all verbs in a sentence except the first) its functions as tense and mood neutraliser were taken over by the present and indicative respectively. This explains why only the first of two verbs will be subjunctive, e.g.

(9) Though Christ be in you and the soul is alive thereby...

(1968, p.34).

where indicative is the unmarked equivalent of Indo European injunctive. This is supported by the fact that nominal sentences are interpreted as present indicative, and while verbs may lack other tenses and moods, phonologically, no verb lacks a present indicative form. Hence the rule:

$$\text{Past} + \text{Past} \Rightarrow \text{Past} + \emptyset \Rightarrow \text{Past} + \text{Present}.$$

But here conjunction reduction seems to be applying to inflectional categories, and it is not supposed to cross word-boundaries. As Chomsky says:

A term X of the proper analysis can be used to erase a term Y of the proper analysis just in case the inherent part of the formative X is not distinct from the inherent part of the formative Y ... entirely natural because non-inherent characteristics are ... recoverable from context.

(1965, p.182).

So reduction applies to constituents rather than features.

As has been mentioned, Indo European tense and mood were supposedly very different from modern ones, which are categorised as syntactic

features on verbs. In the latter, conjunction reduction was therefore out of the question, but it is speculated that it could and did apply in Indo European, as tense and mood were associated with specific affixations appended to the stem in a set order. (Because Indo European does not, of course, survive, this can only be speculation.)

Kiparsky suggests that this tense was adverbial, hardly a new or controversial suggestion. But it is important to note that he is thinking of deep structure, where tense and mood were separate major constituents, rather than features of other constituents (as in Chomsky's analysis), not necessarily separate on the surface.

Thus Kiparsky sees Indo European tense as a predicate, a function which was slowly lost, but which can be traced through three stages, in his view:

a) Vedic, Sanskrit, where conjunction reduction of tense and mood resulted in the injunctive form, e.g.

dadāti ... carat gives ... wanders (indicative...injunctive)(Vedic)

pibā ... sadah drink ... sit (imperative...injunctive)(Vedic)

(1968, p.37).

b) Present and Indicative replaced the lost Injunctives (Greek, Old Irish, Old Latin), e.g.

*ebheret \implies bheret. (Old Latin)

(1968, p.46).

(10) At daybreak he attacked the town and takes it.

(Greek translation).

(1968, p.31).

c) Loss of conjunction reduction of inflectional categories, evident in most modern European languages today.

Therefore the proto-injunctive bequeathed its role as the unmarked tense and mood to the present and indicative respectively. As a result,

Kiparsky characterises the "historic" present not on a semantic basis alone, but syntactically: it is the Indo European past, present in surface, but functioning syntactically as past (evident in the sequence of tenses). It is semantically indistinguishable from past tense, with which it alternates in conjoined structure; so it is a matter of deep past becoming surface present via a syntactic rule like conjunction reduction, to reduce repeated occurrence of the same tense to present.

Corresponding to Indo European tense, Kiparsky points out that many languages have a set of temporal adverbs (e.g. Tongan, Hidatsu), one of which has to appear in every sentence. But person, number and voice, which do not undergo conjunction reduction, cannot be expressed by adverbs in this way.

In English we find the same principle. One cannot predicate, negate, question, or contrast with each other, the true tenses, independent of their host verbs, to which they seem to be linked as syntactic features; but one can do so with auxiliaries, which are clearly separate constituents, e.g.

(11) I don't think he has seen it, but hopefully he will.

(12) I don't think he has seen it, * but hopefully he sees it.

The latter is only acceptable if rephrased with explicit adverbs to support the predication of time (e.g. now). The lack of predicative function is an inherent syntactic property of English tenses, not a phonological one, because it cannot be remedied by do-support, e.g.

(13) * He refused and does so.

Kiparsky maintains that whether tense has a predicative function or not is a good test to establish whether it is syntactically a constituent or a feature on the verb. He naturally concludes that the latter is the case. This also explains, in his view, why English,

with the same conjunction reduction rule as other languages, does not reduce tenses: it is a verb feature, e.g.

(14) * John wanted to paint his sister and later.

(15) John wanted to paint his sister and later did (unreduced tense).

5.1.1 Deep Structure Possibilities

Chomsky's and Kiparsky's analyses seem to be correct in the assumptions they make, but their use of syntactic features does not necessitate treating tense as a deep feature of the verb as well as a surface one. Chomsky was talking of German nouns, phonological-lexical items and their inflectional features. It does not mean all lexical items in English are the same, or that every inflection is a feature in deep structure.

Kiparsky's analysis of English verbs with a feature of tense explains, in his view, why tense cannot be deleted in conjunction reduction: transformations respect word-boundaries. Obviously if the theories of the late 60's and early 70's are valid, an alternative explanation for this phenomenon will have to be found. Granted, tense is not deleted in English because, at the point of conjunction reduction, it is a verb feature, non reducible, not originating on an adverb, which is a separate constituent. (As is the case with Indo European tense.)

But one must consider the deep structure possibilities. There is nothing to prevent English from being like Indo European at the point of deep structure, letting tense also originate from adverbials, separate constituents, only becoming verb features later in the derivation.

This would be the case before the application of conjunction reduction. So if one makes the placement of English tense from an

adverbial constituent precede reduction, the only difference between English and Indo European with respect to tense is in the order of the rules: Indo European reduction precedes placement, and English vice versa.

If King (1968) is right in saying rule-ordering is an expected linguistic change, then an analysis of tense as a separate constituent in English suggests further that Kiparsky's analysis of tense in Indo European is correct, at the same time that it preserves his analysis of English.

5.1.2 Conjunction Reduction

If we assume, then, that tense has been placed on the verb when conjunction reduction applies, then we are faced with a problem:

(16) John wanted to eat the cake with two cherries, and later still did.

(17) John wanted to eat the cake with two cherries, and later still will.

As Hausmann (1972) points out, sentences like these are usually seen as derived from deep structure by conjunction reduction, from a deep:

(18) John wanted to eat the cake with two cherries, and later he still will/did eat the cake with two cherries.

The Conjunction Reduction transformation specifies that only constituents may be deleted under identity, left- or right-most, working inwards. If tense at this point is indeed a verb feature, why is it not deleted? - eat is deleted, after all, and everything dominated by it. Transformations respect word boundaries, and this one supposedly only deletes whole constituents, and does not apply between the word level. Hence the ungrammaticality of:

(19) to sing and to dance \implies to sing and dance

(20) singing and dancing \implies * singing and dance

As Kiparsky put it:

The word is a necessary entity of generative grammar.

(1968, p.35).

If one accepts this, and Kiparsky's analysis of tense as a feature on the verb, why are (16) and (17) grammatical? Here only part of the constituent has been deleted, everything except the tense morpheme. If tense is a verb feature at the point of reduction, then the following sentence would have to be grammatical, for reduction has respected word-boundaries, deleting only identical constituents. But it is not:

(21) * John wanted to kick the ball, and later kicked.

Assuming that transformations do respect word boundaries, deleting only identical constituents, and that tense is a verbal feature at the point of reduction, the above sentence would be generated, and not the preferable:

(22) John wanted to kick the ball, and later did.

which ought to be ungrammatical.

We have evidence that conjunction does, in fact, delete whole constituents, from examples like the following:

(23) Joe wanted to climb the oak tree with brown leaves and
later climbed the oak tree with brown leaves.

⇒ (24) Joe wanted to climb the oak tree with brown leaves and
later did.

not

(25) * Joe wanted to climb the oak tree with brown leaves and
later climbed the tree. (Under normal stress).

Also, the head constituent cannot be deleted if an embedded clause remains, through some raising movement, hence the ungrammaticality of:

(26) * Joe wanted to climb the oak tree with brown leaves,
and later climbed with brown leaves.

Because the entire constituent must be deleted, not just part, the following is ungrammatical (part of the verb phrase remains):

- (27) * Joe wanted to climb the oak tree with brown leaves and later climbed.

So why is and later did grammatical? Tense in (24) is on the verb, it obviously has not been deleted, contrary to expectations.

In:

(28) Joe will want to climb ... and later he still will want to.
we have reduction, giving:

- (29) Joe will want to climb ... and later he still will $\wedge \wedge$

- (30) Joe will want to climb ... and later \wedge still will $\wedge \wedge$

The only non-deleted elements are tense and adverb. The adverbs are easily explained: they have no counterparts in the left-hand clause. But the tense is identical in both clauses, yet if the right-hand tense is reduced, ungrammaticality results. One would expect will, as a separate morpheme, to be reduced.

Either reduction is not so general, and must be constrained from applying to tense, or tense is not within the clause being reduced. The latter option saves the generalization that transformations respect word-boundaries, and also explains why the suffix ed and free form will behave alike in conjunction reduction: neither is a constituent of the sentence on which conjunction reduction is operating.

5.1.3 General

What has become evident is that tense in English is even closer to Kiparsky's analysis of Indo European than it originally appears to be: it is also part of a higher constituent than the verb or verb-phrase, lowered after conjunction reduction, i.e. the hypothesised difference in rule-ordering between Indo European and English is no longer valid - there is no difference. Tense is not a

verb feature at the point of reduction; it has not been lowered yet. The hypothesis that it is a higher constituent, outside the transformation, is preferable because it blocks the above ungrammatical sentences, and generates the grammatical ones.

It also preserves our expectations about the relationships between stages in the language: we expect deep parallels between the histories of languages, and we also expect differences in rule-ordering: addition and loss.

Kiparsky argued that tense was a minor constituent in Indo European at the point of reduction, which, because reduction applied to it, had to be within the sentence. It appears that for modern English, reduction applies before tense placement, so the difference between Indo European and English is that the former has tense as a minor constituent, dominated by the sentence in which it appears in the surface, at the point of reduction, and English has tense as a major constituent, dominated by a higher sentence than the one it appears in in surface structure, at the point of reduction.

English has a tense-lowering for which Indo European has no evidence. But we do not expect deep structure differences. Given these hypotheses, and no other data, it seems feasible to suggest (as Hausmann 1972 does) that Indo European too had tense as a major constituent in deep structure, and that there the lowering merely preceded reduction.

5.2 Other Evidence that Tense is a Higher Constituent

5.2.0 General

There is a theory that tenses are auxiliary verbs, always present in the deep structure of every sentence.

- (1) Bill shot a duck and so did John.
- (2) Bill's wife will cook beef in order to make him come home, and so will mine.

In (1) tense seems to be moved from the verb onto the auxilliary did but in (2) it stays on will. Traditionalists have never been able to say why future tense is not manifested as a suffix, like past and present, so say English has no future per se, except via the modal system. The above sentences suggest that the most general statement about tense in English would be one in which tense functions the same for past, present and future - so auxilliary will is equivalent in status to do. Instead of saying do appears only when there is no other auxilliary to carry tense (Chomsky 1957), one could say that there is always an auxilliary in English deep structure, associated with tense. So the verbs of (1) and (2) are, respectively:

Past Aux + Main Verb

Future Aux + Main Verb.

In the right-hand clause of (1) the main verb is deleted under identity, auxilliary do is kept. If it were not deleted, there would be aux deletion, allowing tense incorporation on the main verb. To prevent the deletion of lexically full auxilliaries after the main verb has been deleted, the rule of aux-deletion would apply only to lexically empty nodes. (preventing will deletion in (2)).

So English has three separate tenses in deep structure. In this respect Huddleston's (1969) arguments are very convincing (cf. Ch.2 & 3).

5.2.1 VP Constituency

In recent years many grammarians have enthusiastically given their support to the idea that tense is not just something to do with the verb, but rather a higher predicate. Huddleston (1969) tentatively explores this theme, focussing on adverbs and multiple embeddings; Ross (1967), McCawley (1971) and Seuren (1974) do the same (cf. Ch. 4).

As a result, there is much evidence available which points to

the truth of this hypothesis. Among this evidence is the Lakoff-Ross test for VP constituency. I aim to prove that tense is not a constituent of the verb phrase, and according to them, the test for this is a matter of the replaceability of a set of constituents by do-so, because do-so replaces all of the constituents of VP and only these.

They find that temporal adverbs, because - and if - clauses are outside the verb phrase, because they are not replaced by do-so, e.g.

(3) I stole a cake yesterday, and will do so again tomorrow.

(4) Yesterday John asked Mary to go, and I am going to do so tomorrow.

Direct objects, indirect objects, and directional adverbs are in the VP, e.g.

(5) Joe ordered plums and I did so too.

(6) * Joe ordered plums and I did so peaches.

(7) Joe gave me a big kiss and John did so too.

(8) * Joe gave me a big kiss and John did Sue too.

Tense must also be outside the VP, for the do in all the sentences is inflected for it, and would not be if it were in the VP, in which case it would be deleted, e.g.

(9) Joe likes cheese and I do so too.

(10) Joe ran away and I did so too.

(11) Joe will take the cake and I will do so too.

(12) * Joe will take the cake and I do so too.

If the future tense were marked on take or on the VP then (12) would be grammatical, and it obviously is not. So we can conclude from this test that tense is not a VP constituent - it is not destroyed by conjunction reduction, nor by do-so.

5.2.2 Summary

If tense is not a VP constituent, and if it is not a Predicate Phrase constituent, what is it? We have still not gathered enough evidence to show conclusively that tense is, indeed, a higher predicate. The evidence so far does not entitle us to say, as Jacobs and Rosenbaum (1969) and Emonds (1970) do, without defence or comment, besides the well-known do-so test, that tense must be in the next highest node of the tree, a daughter constituent of S. All that is certain is that tense is not a VP constituent - we can only hypothesise from there.

5.3 Tense as Daughter of S

5.3.0 General

There are other arguments that tense is in fact a daughter of S. The first of these is based on the question transformation, the other on focussing. It is a well-known fact that T-Q moves aux to a position in front of the subject NP, e.g.

(1) Had John come by then?

even when a specific constituent is questioned, e.g.

(2) Who has John been seeing lately?

When a verb without aux is moved, a dummy is created to carry tense, e.g.

(3) Did John see Joe?

and this tells us that tense is not an aux. So no analysis of T-Q is complete unless it mentions tense as the constituent to be moved to the front of the sentence, as well as aux. It must be mentioned here that many would say tense is included in Aux₁, not Aux₂ (e.g. Thomas (1976)). The point is that there is a restriction on the kinds of element moved round higher-order constituents: in T-Pass, object and subject NP's are moved, in extraposition sentences are

postposed, and theory has it that a higher-order constituent is one which is, with the exception of the object NP, either a sentence, or a daughter of S.

If one could show the object NP to be a daughter of S as well, like all the other afore-mentioned constituents, and not of VP, then a neat generalization could be made about movable constituents being of a higher-order, which would enable one to conclude that tense is a higher-order constituent too, because it undeniably moves.

In actual fact it has often been suggested that the object-NP has indeed been incorrectly analyzed as daughter of VP, and several tagmemic and structural theories include the object-NP as an immediate constituent of the sentence. How valid is this hypothesis? The object-NP is obviously different from the other constituents of VP: the verb is never moved in a transformation, and the object-NP and all the other higher-order constituents can be focussed.

McCawley argues in English as a VSO Language (1970) that the grammar would be greatly simplified if the input order in cyclic transformations was VSO and not SVO. His reasons are as follows:

- a) logicians use this order with variables and propositional functions, and there is a parallel between the operations of logic and of language.
- b) each cyclic transformation, according to him, works more easily on a VSO input than on an SVO input, with fewer restrictions.
- c) of 14 transformations he gives, 8 are unaffected by VSO or SVO input, the other 6 are facilitated by VSO input, and only one, Dative movement, is made more difficult. The 6 transformations which are facilitated by VSO input are: Psych-movement; T-Passive; "there" - insertion; subject-raising; negative-raising; and predicate-raising, e.g. if the passive transformation applies to a structure with verb

second, it has to move two noun phrases: it has to move the underlying subject to the end of the clause, and the underlying object into subject position. However, if Passive applies to a structure with verb first, then only one noun-phrase need be moved: if the subject is moved to the end of the clause, the object will automatically be in "subject position", i.e. it will directly follow the verb, and thus will become surface subject by V-NP inversion. (1970, p.293).

If there is a VSO input, there can be no such constituent as VP before surface structure is reached (because the subject NP intervenes) so VP is derived via a post-cyclic transformation: V-NP inversion. In other words the object-NP must be a daughter constituent of S, only later being moved under the VP node.

5.3.1 Counterarguments

There is counter-evidence to the hypothesis that VP is a major constituent: the Lakoff-Ross test (cf. 5.2.1) shows the NP to be a VP constituent, as well as showing that there is such a thing as a VP. Also, if the input were SVO, no V-NP inversion would be required at all, and the simpler grammar (i.e. the one with a VP) is reputedly the better one. In addition, many of the "proofs" under (c) above (5.3.0) rely on the existence of a VP for their validity.

Data on the object NP is obviously not clear, perhaps because it has not received much attention thus far. Perhaps it is indeed a constituent of S, lowered at a point after movement transformations. If further research shows it to be a daughter of the sentence, then all constituents would also be, in other words, tense as well, for it must be moved to the left of NP in T-Q. So T-Q would entail:

- a) tense placement, putting tense in a daughter relationship with the sentence before subject NP.
- b) aux attraction to the tense node (if there is none, then aux-formation via do).

c) tense incorporation on aux, last, to prevent tense being attached to the main verb before tense movement.

German sentences support this, but the whole argument depends on the re-analysis of object NP as a daughter of S, i.e. a higher-order constituent (questionable, in my opinion) and on the claim that movement transformations only move higher-order constituents. If these are wrong, this particular argument that tense is a daughter of S is destroyed.

5.3.2 Focussing

The other argument in favour of tense being a higher predicate comes from tense focussing, e.g.

(4) I did go, I promise.

According to theory, only major constituents can be focussed, i.e. daughters of S, therefore tenses must be major constituents. The weakness here seems to be that the object NP can also be focussed, yet it apparently is not a daughter of S (unless 5.2.2 is valid) - so the hypothesis is rather tentative, and possibly invalid.

5.4 Further Arguments that Tense is a Higher Predicate

5.4.0 General

There is an hypothesis that adverbs have to be outside the sentence in which they appear in surface structure. G. Lakoff (1970) argues in favour of it, using the sentence:

(1) George won in 1946, but it wouldn't happen in 1948.

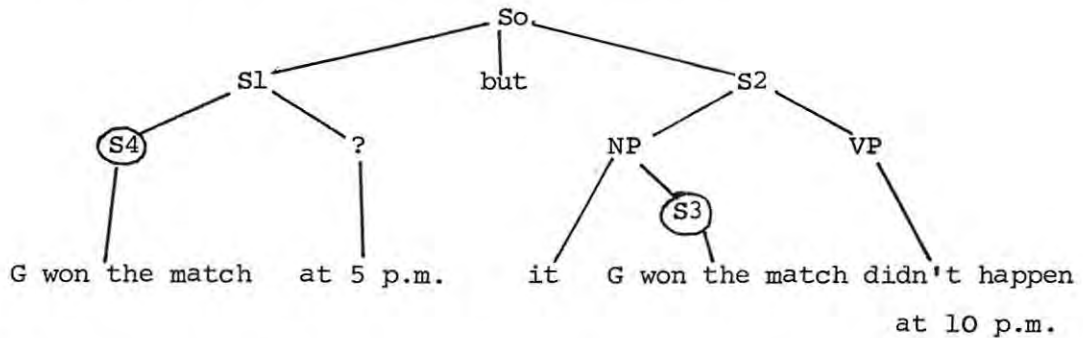
In order for identity, with subsequent deletion of the second occurrence of an element, the temporal adverb cannot be included under VP in deep structure. The full form of:

(2) George won the match at 5 p.m. but it wouldn't happen
at 10 p.m.

is

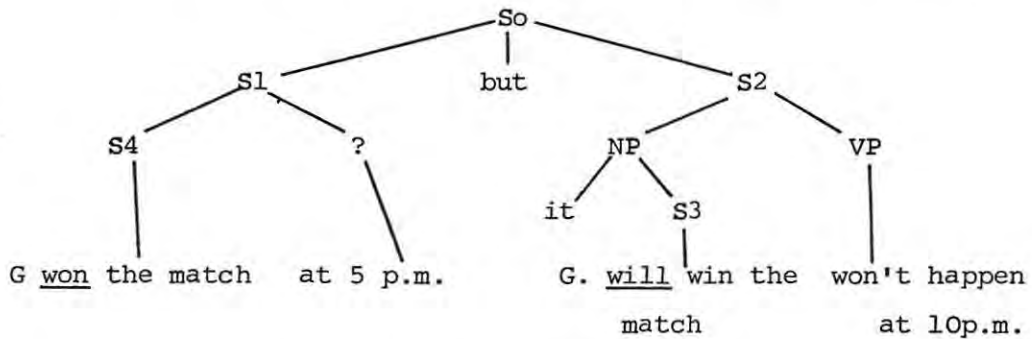
(3) George won the match at 5 p.m. but that George win the match did not happen at 10 p.m.

This is represented structurally as follows:

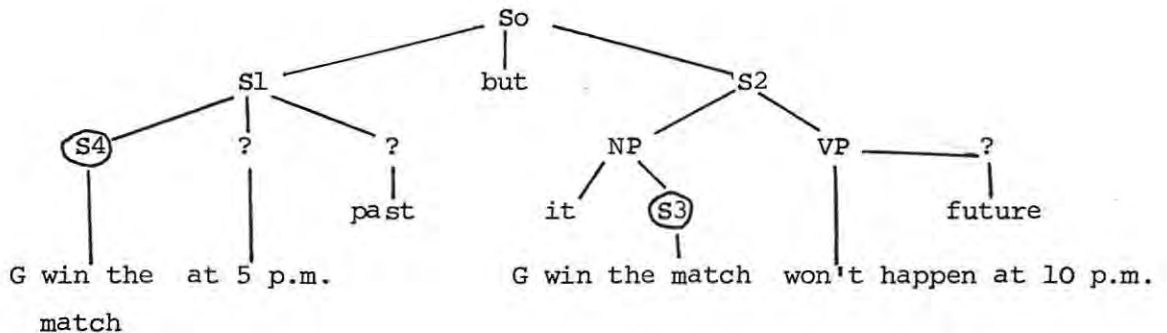


The same seems to be the case with tenses, e.g.

(4) George won the match at 5 p.m., but it won't happen at 10 p.m.



Here, S3 and S4 are not identical because of tense, so to ensure identity, tense has to be removed from both, giving:



i.e. tense is outside the sentence in which it appears in surface structure. In my opinion, this evidence is fairly convincing in showing that tense is indeed a higher predicate.

5.4.1 Sequence of Tenses

Further proof that tense is a higher predicate is provided by Huddleston (1969) and McCawley (1971). Sequence of tense is a phenomenon which has often, but to my knowledge never fully, been described. (cf. Jespersen (M E G IV, p.152ff), Ota (1964, p.109ff), Ross (1967, p.181-188), Kiparsky (1968), Langacker (1970, p.579), Gallagher (1970, p.322-323), R. Lakoff (1970, p.839ff) and Seuren (1974)). The idea that English has sequence of tense rules comes from the observations that grammatical tense often does not agree with semantic time, e.g.

(5) I didn't know you were/*are here.

(6) I told you John was/*is here.

(7) I believe that the sun is/*was out.

(8) I believed that the sun was/*is out.

Ross (1967) suggests the following rules, which he admits are too strong, because the copying of the tense feature from one verb to another does not even require the specification of the structural relationship of the verb.

		<u>tense</u>			
	X	V	Y	V	Z
	1	2	3	4	5
\Rightarrow	1	2	3	<u>tense</u> 4	5

and

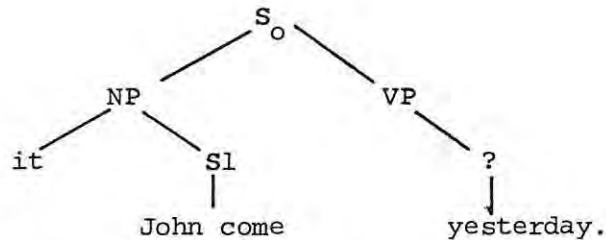
				<u>tense</u>	
	X	V	Y	V	Z
	1	2	3	4	5
\Rightarrow	1	<u>tense</u> 2	3	4	5

(9) It was yesterday that John came.

(10) * It is yesterday that John came.

(11) * It was yesterday that John comes.

(10) and (11) are ungrammatical because the sequence of tense rules have not made the verbs past. The deep structure which Ross suggests is:



If tense is changed to agree with another tense, then it must necessarily be associated with John come, if only because to be does not exist in the structure till after Bach and Fillmore's "copula-spelling" rule. So what conditions give sequence of tenses? It operates freely on all verbs dominated by the same sentence; but this is not enough, because of the grammaticality of:

(12) That John came yesterday will (is, did) surprise us all.
 -two different surface tenses, dominated by the same sentence. There must be a constraint to prevent the past tense of John come from operating on the verb of the second sentence: to be. Such a constraint could be that the tense of a particular sentence only has an effect on the tense of another sentence if it is superordinate to that sentence, and in no other case. In other words, tense has to command the verb on which it is to appear.

This specifies the right tense in:

(13) John came yesterday.

and

(14) That John came yesterday will surprise everyone.

for in the latter, future commands the verbs of S2, preventing them from getting past markers: S1 and S2 are sisters, daughters of S0, neither one commands the other. If one sentence does command the other, sequence of tense operates, e.g.

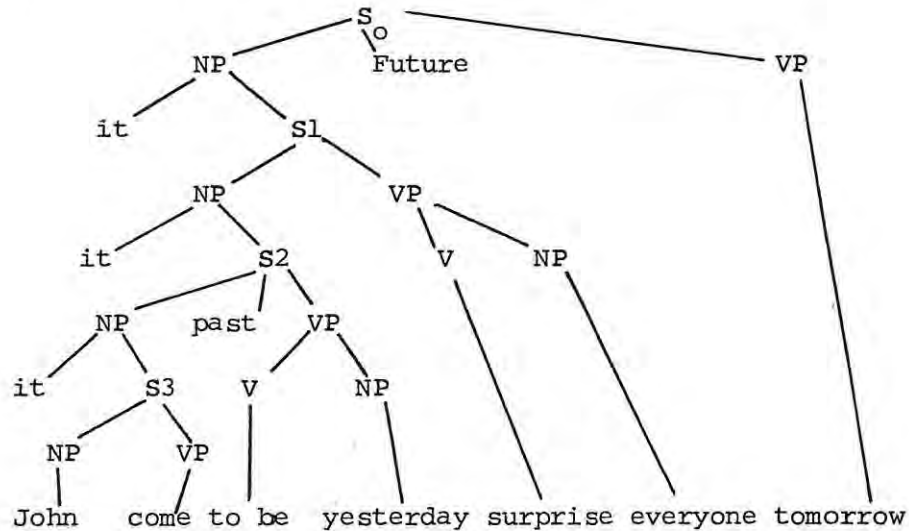
(15) I didn't know you were here.

- present becomes past because it is dominated by past.

In other words, a tense which commands a particular verb is shown in that verb, unless it is dominated by another, different tense, in which case it is changed to that tense. Hence:

(16) It will be tomorrow that everyone will be surprised that it was yesterday that John came.

What is hypothesised is that the sentence into which the tense is lowered commands the tense to be lowered, and the tense has to command that sentence:



so tense in S2 can surface in both come and be, because it commands both.

5.4.2 Pronominalization

Another point which increases the likelihood of tense being in a superordinate or command position in the sentence, arises from Langacker's (1969) pronominalization constraint, according to which a pronoun must be preceded and commanded by its antecedent, e.g. (In sentences (17) to (25) underlining signifies that the referents are the same, i.e. that Joe and he refer to the same individual.)

(17) After Joe left the flat he went riding. (antecedent precedes)

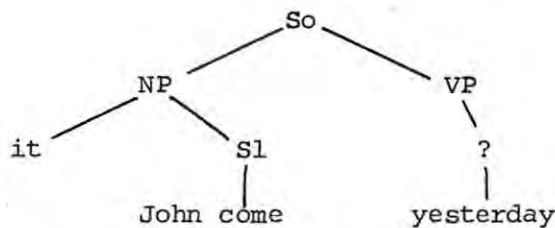
- (18) After he left the flat Joe went riding. (antecedent commands)
 (19) Joe went riding after he left the flat. (precedes and commands)
 (20) *He went riding after Joe left the flat. (neither)

Langacker suggests that the most grammatical sentences are those which hold both primary relations between operators, seen in the following:

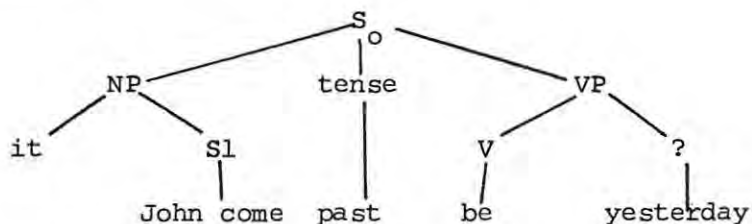
- (21) Jim hates Sue and her mother hates him. (precedes and commands)
 (22) Jim hates the girl who rejected him. (precedes and commands)
 (23) The girl who rejected Jim is hated by him. (precedes)
 (24) The girl who rejected him is hated by Jim. (commands)
 (25) *He hates the girl who rejected Jim. (neither)

We can apply this principle to tense:

- (26) It was yesterday that John came.
 (27) *It is yesterday that John came.
 (28) **It was yesterday that John comes.



If Bach (1968) is correct, and the verb to be can be predicted here because it precedes a predicate, then a derived structure after be insertion is:



which shows why (27) is more grammatical than (28): Past commands come but is not commanded by it; Past commands be and is commanded by it as well, so tense has a power over come, which come does not have over tense, and tense has a power over be which be has back:

they command each other. So the violation in (27) is not as bad as that in (28), and tense and be have one of the primary relations to each other.

This argument backs up the idea that sequence of tense rules cannot be descriptively adequate until tense is seen as outside the sentence in which it appears in surface structure. McCawley's (1971) suggestion that tense may be based on pronominalization, derived from adverbials, is based on exactly the same idea of command and precede. The same deletion conditions obtain for tenses as for temporal adverbs, but here the precede relationship does not seem as relevant as the command one:

(29) After seeing all Europe in a month, Gary will realize
he planned to do too much.

(30) After seeing all Europe in a month, Gary realized he
planned to do too much.

The present participle in both is transformationally derived, and the tense in the deep clauses agrees with that in the main clause, i.e.

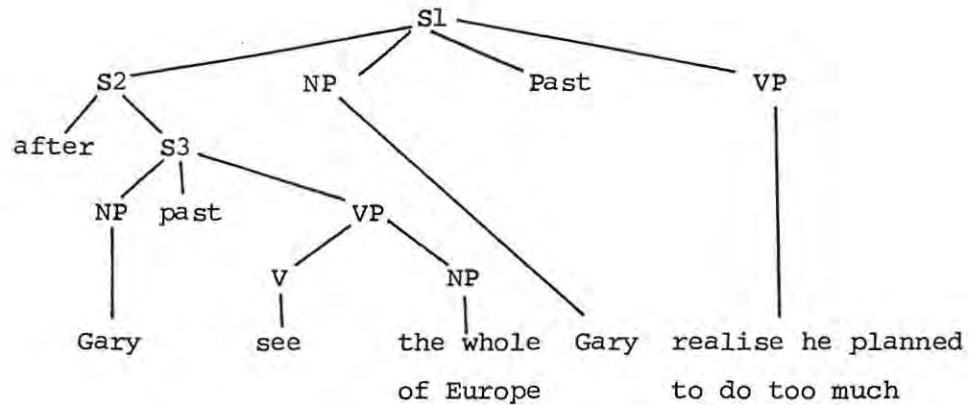
(29) is the same as:

(31) After Gary will (future) see Europe in a month, he will
(future) realize he planned to do too much.

and (30) is the same as:

(32) After Gary saw (past) Europe in a month, he realized
(past) he planned to do too much.

So (29) and (30) can be derived from the following:



the dependent clause is ultimately dominated by the sentence in the independent clause in the sentence. Tense can be deleted from the deep clause in both, tense deletion being stated in terms of the command relationship: tense is deleted by an antecedent tense which commands it. It cannot ever be deleted from the independent clause, even when the dependent clause precedes it, because (33) is ungrammatical, and all sentences like it - the wrong tense is deleted:

- (33) *After Gary saw the whole of Europe in a month, he realizing he planned to do too much.

5.4.3 Quantification

If one looks at the interaction between tense and quantifiers, one finds even more evidence that tense is in a permanent position of command in deep structure. This is a matter of the importance of ordering elements.

Seuren (1974) (cf. 4.4.1), has shown convincingly that every sentence consists of at least one operator, and a nucleus. In his view it is the operators which affect the sentence meaning, and when there is more than one, their order is vital to that meaning. According to him, quantifiers, negatives, tenses and adverbials are all operators; in other words, higher predicates, in a command position over the rest of the sentence, i.e. everything to the right of them, including other operators, the nucleus and embedded sentences.

If one examines the interaction of these so-called operators, it becomes clear that their ordering is indeed highly relevant to the sentence meaning, and that they must, as a result, be in a command position as higher predicates:

(34) Aristotle was allowed to drink one pint of beer.

means: "I assert that in the past it was permitted for Aristotle that at that time there was one pint of beer such that Aristotle drink it."

We are inclined to put the existential quantifier after the second occurrence of tense when there is a double occurrence of tenses with modals. But in:

(35) Aristotle was allowed to drink one sort of beer.

it could be either:

(36) Ass Past \exists (one sort of beer) Perm. Pres.: A drink the sort of beer. "I assert, that in the past there is one sort of beer such that it is permitted for Aristotle to drink it."

or

(37) Ass \exists (one sort of beer) Past Perm. Pres.: A drink the sort of beer. "I assert that there is one sort of beer such that in the past it was permitted that Aristotle drink it."

(38) Bill may have written one letter.

which could be any one of the following:

(39) Ass U Poss Past \exists (letter): Bill write this letter.

"I assert that it is possible that at a previous time there was a letter and Bill wrote this letter."

(40) Ass U Poss \exists (letter) Past: Bill write the letter. "I assert that it is possible that there is a letter and at

a previous time Bill wrote this letter."

(41) Ass U \exists (letter) Poss Past: Bill write the letter.

"I assert that there is a letter and that it is possible that at a previous time Bill wrote this letter."

The more quantifiers there are, and the more tenses, the more interpretations are possible, but this is because both are inherently in a command position, both are operators; with the addition of adverbs, problems increase, because adverbs have the same qualities as quantifiers, hence the ambiguity of:

(42) Nobody paints the Vatican every day.

which could mean that it is never painted, or that it is painted daily, but by a different person each time - this is a matter of quantification, tenses, and adverbials.

Using the rule of command and precede, Seuren demonstrates the interaction of these elements, to show that time is always in a command position. It is a convention of some logicians that

A = all

I = some

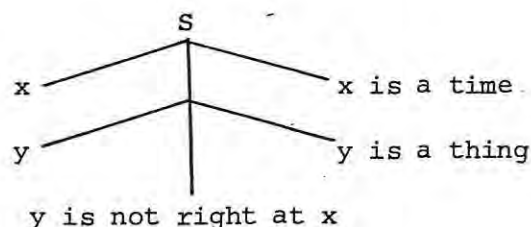
E = none

O = not some

Dr. M.V. Aldridge has pointed out some interesting implications in the operation of these rules:

(43) Nothing is ever right.

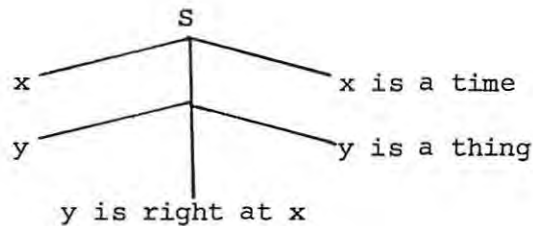
is a pure E, implying that it is false that anything is sometimes right:



this, in turn, implies that:

(50) Sometimes something is right.

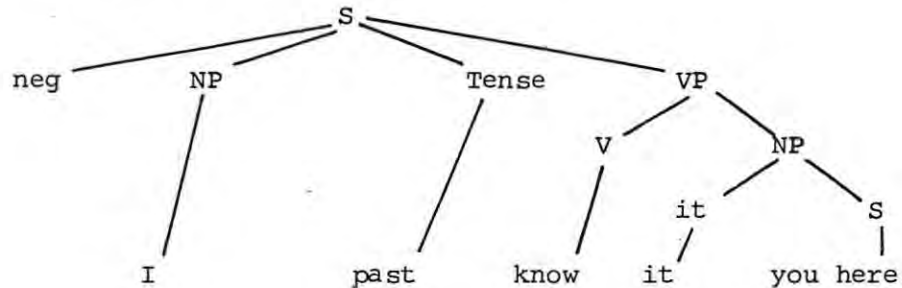
which is an I:



So time is always in a command position, even if it does not precede.

Another proof that the command relation is vital to the sequence of tense rules is the following sentence, which makes a verb logically disagree with the semantic time:

(51) I didn't know that you were here.



Following Bach's (1969) suggestion, be is inserted in the sentence, tense commands it, but is not commanded by it, hence:

(52) * I didn't know that you are here.

5.5. Summary

In my opinion, all the data in Chapter 5 strongly suggest that tense is, indeed, a higher predicate.

I have used arguments based on Kiparsky's (1968) article (5.1.0), Conjunction Reduction (5.1.2), VP Constituency (5.2.1), Focussing (5.3.2), Sequence of Tenses (5.4.1), Pronominalization (5.4.2) and Quantification (5.4.3) to show that this is probably the case.

The next step is to show that adverbs are also higher predicates, which is what I hope to do in Chapter 6.

CHAPTER VI

TENSE AS A HIGHER PREDICATE

6.0 General

This chapter is based on the suggestions of Kiparsky (1968), Huddleston (1969), McCawley (1971) and Hausmann (1972) that there is a very close relationship between tense and temporal adverbs. Ultimately I argue that the latter should be seen in deep structure as constituents of a sentence which dominates the sentence in which the temporal adverb appears in the surface.

This has already been strongly suggested with regard to tenses in Chapter 5, where tense was seen to command the sentence into which it was lowered, and be commanded by it.

In other words, if tense is analysed as daughter of the higher sentence, and adverbs are too, then tense and temporal adverbs may be related, and more general conditions on lowering transformations may then be devised. Before trying to do this, a closer look at adverbs themselves is necessary.

6.1 A Semantic View of Adverbs6.1.0 General

To many, adverbs have always been that class of words which are exceptions to the rule, that irritating set of words which would not fit neatly into any category. As a result, they have been the most neglected part of English grammar, avoided because they are only superficially understood.

As Palmer put it:

the construction of adverbials is one of those subjects found in the undetermined ground lying between the

dictionary proper and the grammar proper.

(1928, p.234).

In a strictly formal analysis of English (e.g. Francis 1958, p. 305-311), adverbs are analysed purely according to their surface structure: Prep + NP / adverb.

The sub-class of adverbs or prepositional phrases in Transformational grammars is based mainly on the position in the surface or on Deep Structure considerations (e.g. Chomsky 1965, p.101-105). Traditional and Structural grammars each try to describe the prepositional phrase according to its prepositions - the traditional on the basis of meaning and function, the structural on prepositions according to form.

Folet says of adverbs and their prepositions:

... usually there is only the faintest logic ... in these compulsory matings.

(1966, p.257).

I wish to suggest that there are logical connections between adverbs and prepositions, which come to light if one incorporates semantics into linguistics. Daswari shows this in his thesis (1969).

6.1.1 Daswari (1969)

Daswari points out that there is indeed, method behind the apparent madness of the adverbial system. He provides a set of rules (all notably dependent on semantic rather than syntactic considerations), whereby, in his view, prepositions convert nouns into adverbial units; the noun is a lexical unit, with a number of potential selectional features, and inflectional features. The former determine the preposition, and once a particular feature is selected, e.g. (+ time), the choice of preposition is immediately limited. For example, (+ time) eliminates the word across from the potential

preposition choice; this limitation narrows increasingly with the number of selections made.

Daswari suggests the following possible selections:

(i) Noun \longrightarrow (\pm time)

(ii) (+ time) \longrightarrow (\pm measure)

(+ measure) nouns refer to adjacent temporal units, e.g.

(1) He'll come in 2 months.

(- measure) nouns do not refer to adjacent temporal units, so cannot be accompanied by numerals, e.g.

(2) * He'll come in 2 springs.

(iii) (- measure) \longrightarrow (\pm period)

(+ period) nouns are nouns like morning, spring.

(- period) nouns are nouns like Sunday, 3 o'clock.

(iv) (- period) \longrightarrow (\pm punctual).

Besides these selectional features which affect the noun's preposition, Daswari says there are inflectional features, which do the same. A time may refer to:

a) an identified recurrent time unit, e.g. a month, a week.

b) a particular named unit, e.g. May.

c) a unique, non-recurrent unit, e.g. May 1967.

So:

(v) (+ time) \longrightarrow (\pm definite)

e.g.

(3) He arrived on a sunny morning. (- definite)

(4) He came on the morning of May 21st 1977. (+ definite)

(vi) (+ time) \longrightarrow (\pm plural)

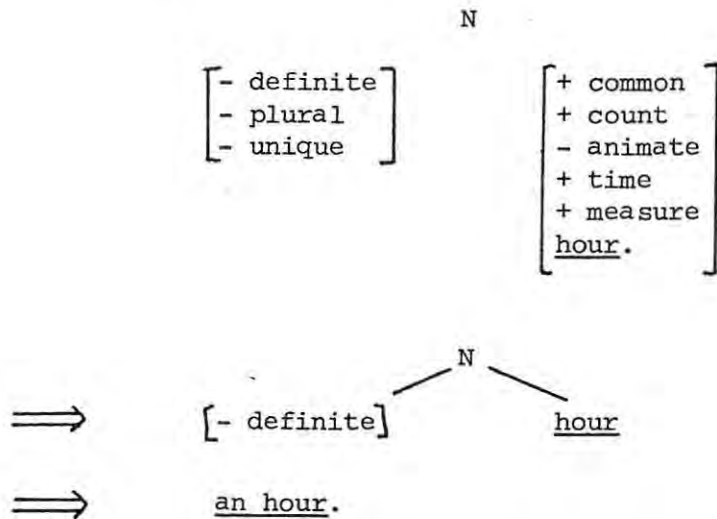
e.g.

(5) He returned in an hour. (- plural; - definite; + measure).

(6) He returned in three hours. (+ plural; - definite; + measure).

Thus the inflectional features of time nouns are closely tied to their selectional features, both reflecting the semantic notion time. Once all the features have been specified, Daswari suggests a set of transformations to delete all the selectional and most inflectional features. For example:

(7) He finished in an hour.



The (- definite) above is perhaps somewhat dubious, despite the article.

Time adverbials modify verbs and sentences, and the semantic units in a (+ time) noun and a predicate determine the choice of a particular preposition. The set of prepositions which can occur with a time noun to form a temporal adverb represents the system of semantic units reflecting the speaker's conception or experience of time; this is because the prepositions a time noun can take are determined by inflectional and selectional units of the noun, and of the verb, and by the semantic features of the adverb.

Daswari also distinguishes another important feature: (+ focal). Nouns which are (+ time) and (+ focal) occur with on and at, usually, and refer to particular marked time units, e.g.

(8) He came on Sunday.

(9) He came at 10 o'clock.

(10) * He came on winter.

Nouns which are (+ time) and (- focal) usually occur with in, to refer to unmarked temporal units in a general way, e.g.

(11) He came in the summer / 1978.

There is also a set of marked adverbs, which have strict limitations as regards their co-occurrence with nouns. For example, within takes an obligatory (+ measure) noun because of its marked focus on temporal limits:

(12) I'll be finished within a week.

During requires (- measure) nouns, which must be (+ period), because it is the duration that is vital:

(13) I fell asleep during the linguistics lecture.

Other examples of marked adverbs are for, which is marked for duration, so requires (- measure) nouns, e.g.

(14) He was here for the day.

(15) * He was here for 10 a.m.

and since, which requires (- measure) nouns, and a perfective verb, and focusses on the inception of the event or action, e.g.

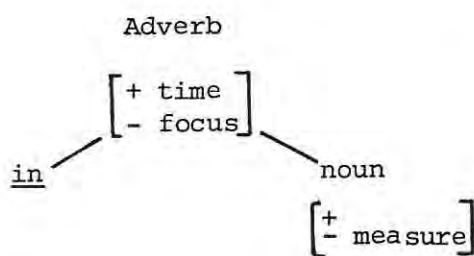
(16) He has been playing since 9 o'clock.

(17) * He worked here since 1966.

6.1.2 Summary of Daswari's ideas

Temporal adverbs have a semantic structure with a feature identifying their prepositions, and extra features for co-occurrence restrictions, e.g.

(a)



6.1.4 Huang (1975)

Naturally the choice of adverb and time noun is tightly coordinated with the verb's semantic feature as well. For instance, die, a momentary non-habitual verb, will not take a durative adverb, and love will not take a punctual one.

Huang points out that restrictions between verbs and adverbs depend on the semantic features of each of them. Of the following classes:

- a) action verbs e.g. kick, hit.
- b) state verbs e.g. love, hate.
- c) accomplishment verbs e.g. run a mile.
- d) achievement verbs e.g. cure, die.

adverbs indicating stretches of time occur with (a) and (b), and those indicating points of time, with (a), (c) and (d). Matters increase in complexity when the adverb modifies "result" of action, where we find three possible types of duration:

(i) duration of action, e.g.

(22) John knocked at the door for 5 minutes.

(ii) duration between the time of the main verb's action and the moment of speech, e.g.

(23) He will come shortly.

(iii) duration of the resultant state, e.g.

(24) He flew to America for 6 weeks.

(25) He closed the door temporarily.

(26) * He kicked the door temporarily.

Therefore temporal adverbs can describe events, and results thereof. In the surface, the actual time referred to can be indicated by the so-called "tenses", which, as we have seen, give only a poor approximation of time, or by temporal indicators or specifiers (e.g.

at 3 p.m.).

Obviously precision of temporal reference comes from the latter. In my opinion, at the semantic level, when a speaker selects words to express the meaning he wishes to convey, it is the adverbial choice which precedes and governs the subsequent choice of tense on the verb. This is, of course, hypothetical.

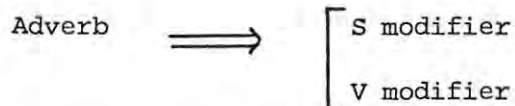
6.2 A Syntactic View of Adverbs

6.2.0 General

Having established that there is a cohesion, semantically, between verbs, nouns and adverbs (and prepositions), a closer look at the syntactic behaviour of adverbs, specifically their relationship to tenses, may be illuminating.

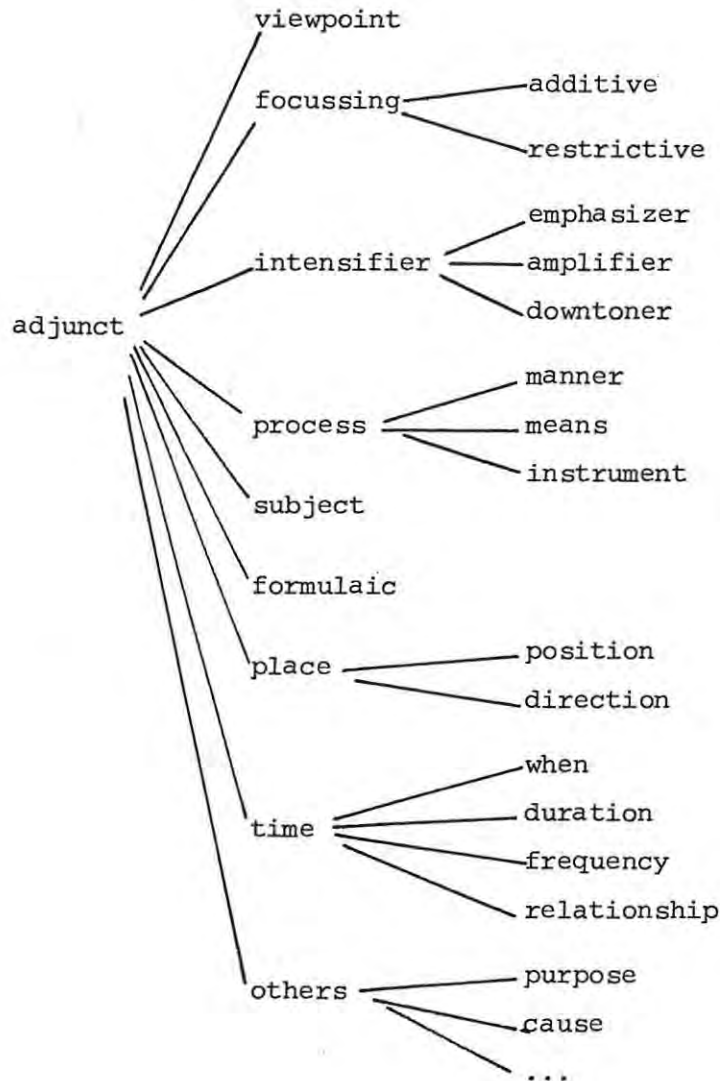
6.2.1 The Basic View

As Nilsen (1972) points out, the adverb is undoubtedly the most heterogeneous and least understood part of speech - something that "modifies" a verb in some way. Most can agree only on what is or is not an adverbial, and on the fact that there are two types: those dominated by an adverbial node, and those dominated by the main verb, i.e.



Beyond this point, theories about adverbials tend to multiply and become rather vague - the treatment by Quirk and Greenbaum (1972) being a case in point: the analysis is based on meaning, usage and surface position of the adverb, and the boundaries of the resultant classification are somewhat vague, though they do provide syntactic tests, e.g. question. They provide the following diagram:

(1972, p.429).



6.2.2 Temporal Adverbs

Naturally, the only type of adverb relevant to this thesis is the temporal one. I shall not be concerned with non-sentential modifiers.

It is clear that temporal adverbs express almost as many temporal situations as verbal expansions do, and they also express aspect, hence the tight concord between adverbs and verbs. In my opinion, it is the adverb which disambiguates temporal reference, and which unobtrusively characterizes every sentence quoted to exemplify tense.

According to Nilsen (1972) adverbs have three aspects (durative, instantaneous and unspecified), and three times (past, present and

future), each of which may be distant, immediate or unspecified with reference to the time point, (present or elsewhere). Unfortunately there are very few overt signals in the adverbial system (besides degrees of comparison) and almost none to indicate tense and aspect, in contrast to those in the verbal system.

It was natural that the adverbial system, superficially so lacking in order, should be neglected in favour of the more systematic, verbal classification. It will emerge, I hope, that this was a misleading emphasis (on verbs), at least as far as temporal reference is concerned - the verbal expansion, which occurs with the adverb, gives only a secondary reflection of the temporal reference, and the precision lies with the adverb itself.

The preceding two chapters dealt with the theories of Crystal (1966), Kiparsky (1968), Huddleston (1969), Ross (1969), Gallagher (1970) and McCawley (1971), all of whom, to a greater or lesser degree, suggest the possible viability of seeing tense as coming ultimately from adverbials.

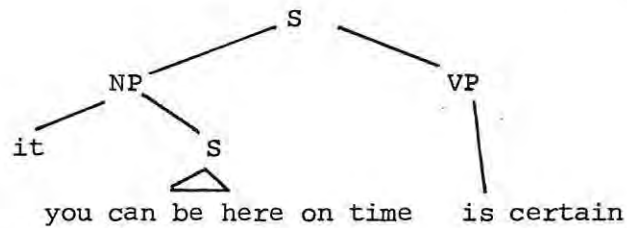
It has been suggested that, in deep structure, tense is a higher predicate, and I aim to prove that the same is the case with sentential temporal adverbs.

6.2.3 The Deep Structure of Sentential Adverbs

The question I must attempt to answer at this point is whether the deep structure of sentential temporal adverbs is different from the deep structure of other sentential adverbials. Schreiber (1968, 1971) deals with the placement of sentential adverbs, Lakoff (1965) with manner adverbs, and Ross (1967) with both. Their basic conclusion is that sentences with adverbs are derived from structures underlying sentences with adjectives, e.g.

- (1) Certainly you can be here on time.

for which Schreiber (1968) suggests the following deep structure:



with extraposition giving:

(2) It is certain that you can be here on time.

and it-deletion giving:

(3) That you can be here on time is certain.

Zandvoort (1957) had much the same idea when he says that sentence adverbs are:

... often equivalent to a sentence (or a clause):

wisely = which was wise ... which is why they have been called sentence adverbs.

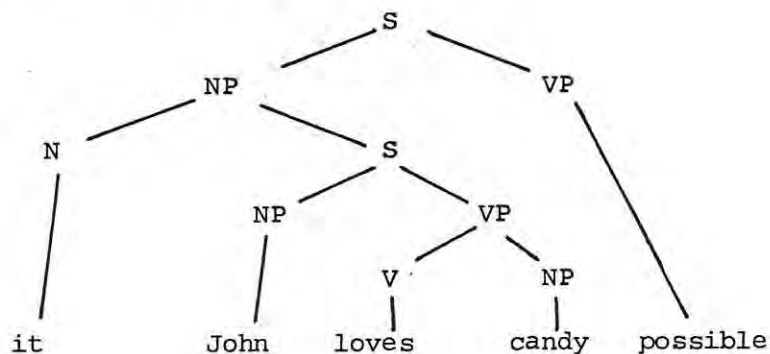
(1957, p.250).

Already this points to the fact that adverbs are likely to be in a superordinate position.

Schreiber refines this analysis by sub-dividing sentence adverbials into modals and evaluatives, both with the same surface structure, but different deep structures.

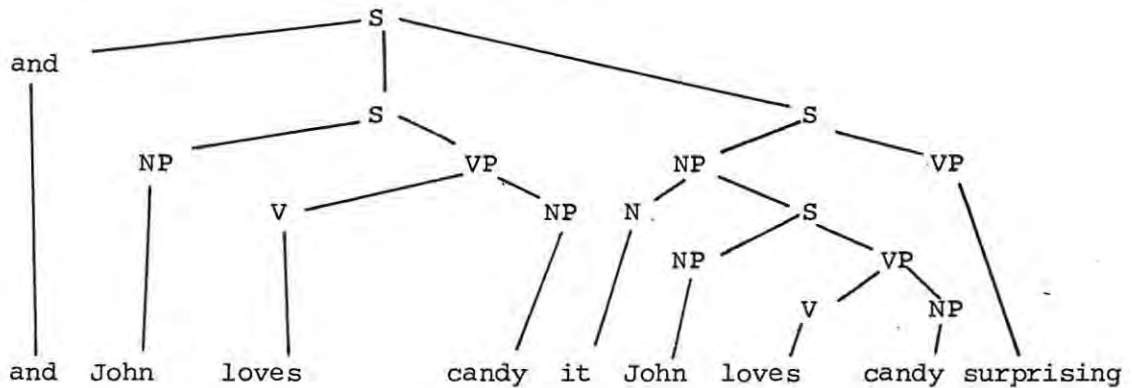
a) Modals:

(4) Possibly John loves candy.



b) Evaluatives:

(5) Surprisingly John loves candy.



I question the need for the (b) analysis, for, in my view, a derivation from "it (John loves candy) is surprising" is just as viable, and would make the grammar simpler.

Even if the deep structures are different, in both cases the adverb is higher than the sentence in which it ultimately appears. In other words, both types are higher predicates, in a command relation to that sentence.

6.3 Tense Time Adverbs

6.3.0 General

If modals and evaluatives are sentential, how can we prove the same to be the case with tense time adverbs? One must examine the behaviour of all three types under various transformations, looking for parallels.

6.3.1 Clefting

- (6) It is possible that John loves candy. (modal)
 (7) It is surprising that John loves candy. (evaluative)
 (8) It was yesterday that John loved candy. (tense)

A vital difference here is that the first two types allow a "disagreement" of tenses, e.g.

- (9) It was possible that John will love candy.

(10) It is surprising that John loved candy.

This is not permitted with tense time adverbs; tenses must agree:

(11) John came yesterday: it was yesterday that John came.

(12) John will come tomorrow: it will be tomorrow that John will come. *It was tomorrow that John will come.

Why is this semantic identity and phonic similarity between tense and tense adverbials, in active and clefted sentences, essential, and why must the selectional restrictions for adverb and tense of the verb be the same for both sentences? Why can we not have:

(13) * John will come yesterday.

(14) * It will be yesterday that I went.

A possible answer is that tense and temporal adverbs have a common source of derivation, or that one is derived from the other.

6.3.2 Conjunction

(15) Bill can be called up, and it is fortunate that he can.

(Evaluative)

(16) *Bill can be called up, and it is possible that he can.

(Modal)

(17) ?Bill can be called up, and it is tomorrow that he can.

(Tense)

(18) Bill came, and it was unfortunate that he did. (Evaluative)

(19) *Bill came, and it was possible that he did. (Modal)

(20) Bill came, and it was yesterday that he did. (Tense)

Obviously there are minor differences between modal and evaluative adverbs: modals give probable truth value, evaluative give value judgements. In this respect, tense time adverbs seem to have a closer relation to evaluatives, because the predicate of the main sentence is not quantified, just complemented by additional information. This difference is not really relevant - as long as tense adverbials

are parallel to one of the two (Modals or Evaluatives), the theory that the former are sentential is confirmed, as both the latter are sentential.

6.3.3 Complementation

(21) That Bill will eat biltong is unfortunate. (Evaluative)

(22) That Bill will eat biltong is probable. (Modal)

(23) *That Bill will eat biltong is tomorrow. (Tense)

If in (23) That is changed to When - and this should be allowed, under the circumstances - it becomes acceptable; it is simply a matter of the complementizer, so there is no real difference among these three in this respect.

6.3.4 Relativization

(24) John came, which was unfortunate. (Evaluative)

(25) *John came, which was probable. (Modal)

(26) *John came, which was yesterday. (Tense)

It has been shown that tense adverbials are often equivalent to a sentence (Zandvoort 1957), and in fact, the ease with which English sentential adverbs alternate with their adjectival forms in many sentences is remarkable proof of Zandvoort's theory that adverbs are sentential, e.g.

(27) Bill paid Sue a visit daily.

is equivalent to

(28) Bill paid Sue a daily visit.

(29) He wisely stopped.

is equivalent to

(30) He stopped, which was wise.

(Zandvoort, 1957, p.250).

This is the incorporation of a higher predicate into a lower (the main) predicate. Surface incorporation is not restricted to

sentential adverbs, as Huang (1975) points out - it also works with adverbs like formerly, etc., e.g.

(31) Basically I agree.

is equivalent to

(32) I am in basic agreement.

Zandvoort says:

Sentence adverbs may ... stand at the beginning or,
less often, at the end of a sentence.

(1957, p.250).

This observation that sentential adverbs, and not others, are free to move around has been made by several others, and is a possible explanation for why sentential adverbs seem so independent - they are higher predicates. Although

(33) *John came, which was yesterday.

is ungrammatical, relativization is still possible, if differently worded:

(34) The time was yesterday when John came.

6.3.5 Questions

(35) *Is he unfortunately a soldier? (Evaluative)

(36) Is he possibly a soldier? (Modal)

(37) Is he a soldier today? (Tense)

Once again, as in the preceding section, the affinity is with the modal. However, there are a few problems in relation to questions.

Katz and Postal (1964, p.98) say that it is the NP only, not the whole adverbial, that is questioned, so one can say:

(38) When did he come? In May, on Sunday, at 10 a.m.

(39) At what time did he come? *in the morning; *on Sunday; 10 p.m.

Leech (1969) has made similar findings. The ungrammatical answers in (39) are such because they are irrelevant to a question

about a (+ punctual) time. Questions like On what day? In what year? require specific information. The fact that one can delete the preposition, e.g.

(40) What day did he come?

does not mean that it is irrelevant, for we have seen that the time noun contains all the necessary semantic information to recover the adverbial - a necessary condition of deletion. In:

(41) When did he come?

it is the whole adverbial that is questioned; one cannot have:

(42) *On when did he come?

so a question can either ask about the whole adverbial, or just the time-noun therein, depending on the interrogator's outside information. This actually reinforces Daswari's theory (cf. 6.1.1) of time-nouns and adverbials: unmarked adverbs take in/on/at according to whether the noun is (⁺ measure), (⁻ focal). A marked adverb, however, takes a preposition according to other semantic units involved. Only the unmarked prepositions are optionally deletable. Also, time adverbs can be questioned, if in the right surface position:

(43) Was he a gentleman two weeks ago?

(44) Two weeks ago was he a gentleman?

(45) *Was he two weeks ago a gentleman?

This is simply because of the existing constraint on temporal adverbial placement, and is not evidence of their differing from modals, because similar constraints operate on modals, where the modal cannot be initial, e.g.

(46) *Possibly is he a soldier?

6.3.6 Frequentative Adverbials

George Lakoff (1970) has written an article on the questioning of frequentative adverbials like often. In my view his tests

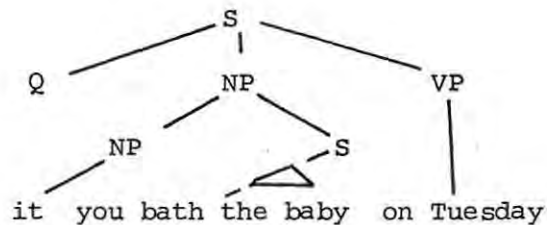
also apply to tense adverbials, which behave in the same way, and so I have replaced often with on Tuesdays:

(47) Did you bath the baby on Tuesday?

is equivalent to

(48) Was it on Tuesday that you bathed the baby?

The bathing is assumed, the time is questioned, so the proposed deep structure is:



As was noted in 5.4.3, the order of operators affects the meaning of the sentence. It was seen that tense must be an operator, because of the effect its position in the sentence had on the meaning. For the same reason, adverbials can be shown to be operators too (cf. Seuren 1974). In sentences with more than one adverbial, the order thereof influences the meaning:

(49) Do you bath the baby on Sundays because it spills its porridge?

(50) On Sundays do you bath the baby because it spills its porridge?

(51) Do you bath the baby because it spills its porridge on Sundays?

(50) questions the reason, presumes the time; vice versa in (49); and in (51) the reason, including the time, is questioned. According to Lakoff we can deduce from this that reason and time adverbials are VP's of a higher sentence. The main clause of the surface structure is embedded, in deep structure only, in the VP, which becomes the surface adverbial.

(55) *He won't come unfortunately, he'll come disastrously.

(Evaluative)

(56) He won't possibly come, he'll definitely come. (Modal)

(57) He won't come today, he'll come tomorrow. (Tense)

As Seuren (1974) tried to show, the effect of negation is all a matter of the ordering of operators (with adverbs among them).

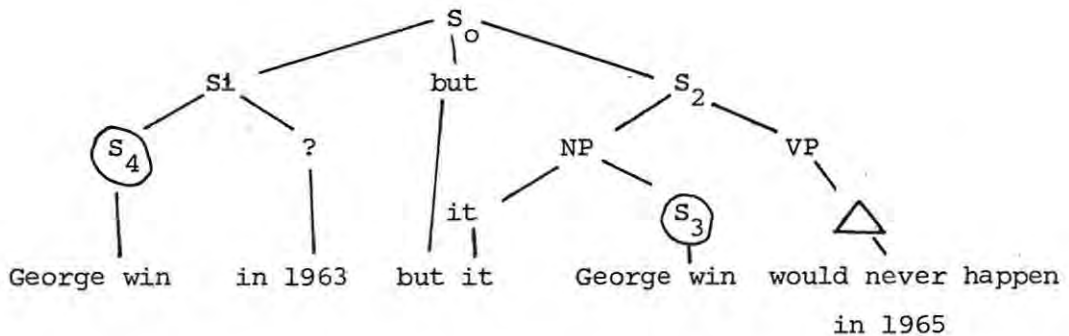
Thus:

(58) He didn't return the books at 9 a.m.

is usually taken as a negation of the adverb, not the sentence. If the position of the negative in relation to that of the adverb affects the meaning, adverbs must be operators, i.e. higher predicates, with a scope.

Lakoff's (1970) arguments about negation hold for temporal adverbs and place adverbs: the adverb must be outside the pronominalized sentence, in order for the deletion rules to hold:

(59) George won in 1963, but it wouldn't ever happen in 1965.



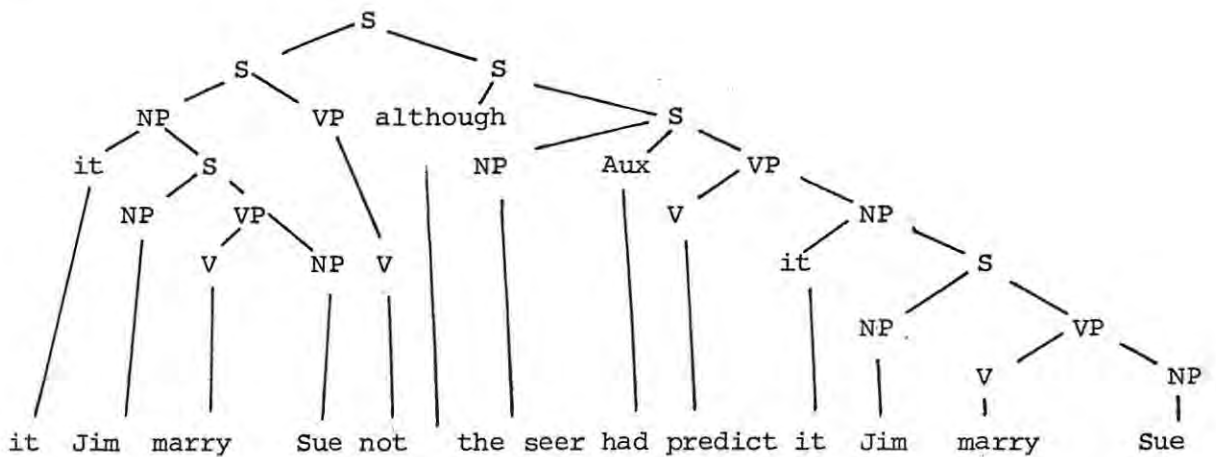
This argument to prove that temporal adverbs are outside the surface sentence is an extension of Lakoff's (1970) argument on sentence pro-forms. He argues that certain adverbs are not in the NP which dominates the sentence which is deleted for anaphora, e.g.

(60) Jim didn't marry Sue, though the seer had predicted it.

(that Jim would marry Sue).

For the deleted sentence to be exactly the same as the other, Neg in

the first clause must be outside the sentence, so the deep structure is:



Given this deep structure, there is nothing to prevent neg from being attached to the second sentence, i.e.

(61) Jim married Sue, though the seer had predicted he wouldn't.
 Hausmann (1972) points this out, but offers no solution. Perhaps the not should go to the left of the left-most sentence.

6.3.8 Command and Precede

Kiparsky (1968, p.34) shows that adverbs of time somehow cover the domain of the next sentence, evident in the following sequence, where the past tense of the first, specifically yesterday, influences interpretations of the second:

(62) Yesterday Joe killed a snake with a hoe.

(63) He found the snake in his bed.

It could be argued that there is a conjoined deep structure, which deletes repeated time adverbials obligatorily - the first one stays. This is not arbitrary, for McCawley (1971, pp.110ff) points out the following:

(64) Though Jim was tired last night he couldn't sleep.

(in Langacker's (1969) terms, last night precedes and does not command).

(65) Though Jim was tired, he couldn't sleep last night. (commands).

(66) Jim couldn't sleep last night, though he was tired.
(precedes the pronominalized adverb).

(67) *Jim couldn't sleep, though he was tired last night.
(neither precedes nor commands).

The ungrammaticality of the latter is predictable from Langacker's (1969a) precede and command constraints on pronominalization. Most English pronominalization deals with "higher" constituents, as is evident in:

(68) Jim went to town, after he left the flat. (commands and precedes he).

(69) After he left the flat, Jim went to town. (commands).

(70) After Jim left the flat, he went to town. (precedes).

(71) *He went to town after Jim left the flat. (neither).

An analysis of time adverbials as higher predicates would be more consistent with what we expect from pronominalization transformations than an analysis of time adverbs as dominated by VP (where in reduction, only part of the constituent is deleted). (cf. Ch. 5).

Again, negation provides important evidence, with temporal adverbs or temporal adjectives, because the sentence acquires an inference that the main verb action did occur, but at a different time, or under different conditions, e.g.

(72) The girl didn't marry young. - she did marry later.

(73) The girl didn't marry at 10 o'clock. - she did marry at
some other time.

(74) The girl didn't marry two men. - she did marry one.

This is parallel with the behaviour of quantifiers, e.g.

(75) Jim doesn't think many girls left.

(76) Many arrows didn't hit the target.

(77) Not many arrows hit the target.

(cf. Lakoff 1970a).

6.3.9 Command and Precede with Temporal Adverbs

It is to be expected, if temporally restricted adjectives and adverbs are higher predicates, that there should be cases where difference in meaning arise when the command and precede constraint is violated, i.e. if command relations are symmetrical, precedences take over. This is, indeed, the case:

(78) He returned hot and tired.



(79) Hot and tired he returned.

(80) He didn't return hot and tired.



(81) Hot and tired he didn't return.

(82) Jim often left the office exhausted.

In (82) exhaust is in the scope of often, so it means he was often exhausted and is not the same as:

(83) Exhausted Jim often left the office.

where often is in the scope of exhaust, so it means he was exhausted only once. This is because the command relationship is symmetrical in each half of the sentence, so the precede relation takes over.

Tense adverbials behave in the same way:

(84) John often left the office in the morning.



(85) In the morning John often left the office.

(86) I don't often beat my dog.



(87) Often I don't beat my dog.

In (86) the beating is assumed, frequency negated. It cannot be clefted because one cannot assert the frequency of an event that does not occur.

(88) *It is often that I don't beat my dog.

It is the order of these operators which affects the meaning, as Seuren (1974) makes quite clear.

6.4 Counter-evidence

6.4.0 General

What has emerged is that tense adverbs are neither exactly like evaluative nor modal adverbs, but that they share features with each, and are very probably sentential, i.e. higher predicates. However there are a few problems.

6.4.1 Imperative and Extraposition

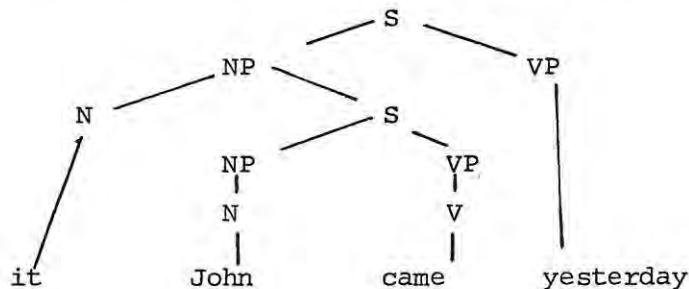
One of the problems is the behaviour of time adverbs in imperative and in extraposition. Schreiber (1971) tries to account for the possibility of extraposition of:

(1) John came yesterday.

to

(2) It was yesterday that John came.

by saying the adverb is a higher predicate, i.e.



However, he wanted to use this to explain why sentence adverbials do not appear in imperatives, the explanation being that "it-S" was the only subject NP, so no you was available for the imperative, (a precondition for imperative). So the following are ungrammatical:

(3) *Certainly kiss your mother!

(4) *Possibly come here!

But we are then faced with explaining the grammaticality of:

(5) Read it now!

(6) Go home tomorrow!

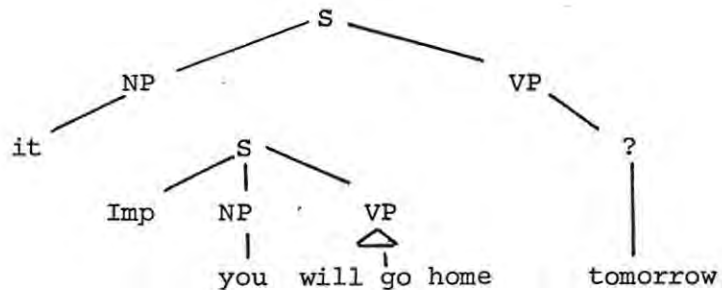
Why can they be imperative? We have seen that they can and do undergo extraposition, which is a specific criterion of NP-complementation (Rosenbaum 1965). With extraposition, the surface subject is it, except in cases of it-deletion, which gives a different subject. How can we explain the behaviour of tense adverbs under the imperative transformation? According to Schreiber this warrants seeing adverbials of this type as non-sentential (the opposite of what I aim to prove), but there are two possible alternatives.

Huang (1975) says tentatively that adverbs can be semantically defined as a function of a function, i.e. Adv.(S), but that temporal adverbs predicate events of their arguments, other adverbs predicate states of affairs of their arguments, hence:

(7) *Possibly go to the party!

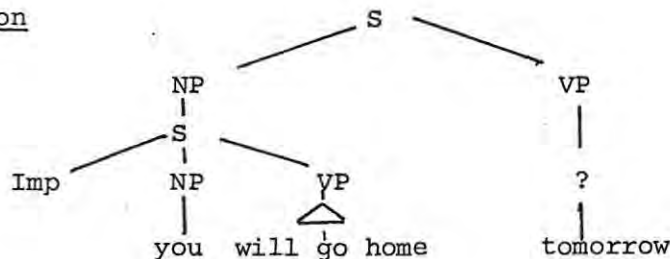
(8) Go to the party tonight!

Hausmann (1972) suggests that perhaps in the case of sentence adverbials the imperative transformation follows adverbial placement, i.e.

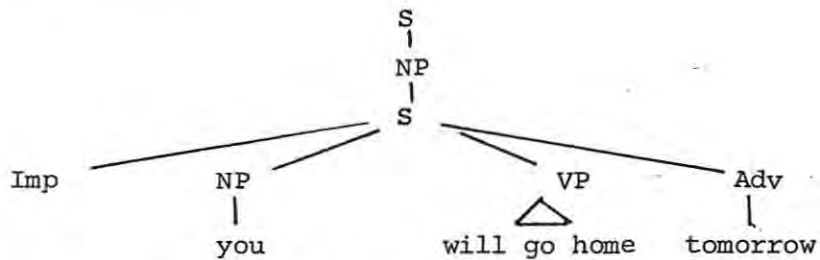


becomes:

It-deletion



becomes, by adverb placement, which puts tomorrow as a sister of the embedded sentence:



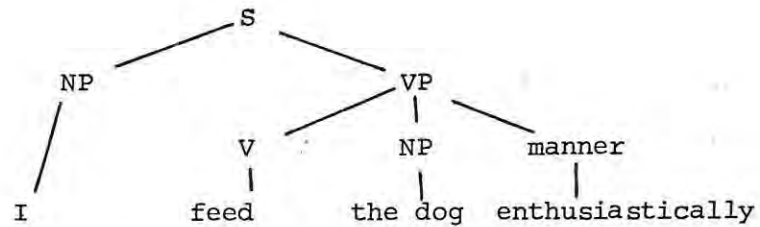
The higher S and NP are then deleted (Ross 1969) (Tree Pruning) and T-Imp deletes you and will. However, this is not fully satisfactory, because the conditions for non-sentential adverbs are different (placement of time adverbs precedes T-Imp, follows it for S-adverbs) - it would be best if conditions of placement were uniform for all adverbials, and this would be the case if we could prove that all adverbs are outside the sentence in which they appear in the surface, i.e. that they command that sentence. It seems likely that now, tomorrow, etc. are possible with Imp. because of the inherent time implication in Imp., i.e. this moment or in the future or that moment in the future, obviously not in the past.

6.4.2 Manner Adverbials

Another problem involved in this generalization that all adverbs are sister-adjoined to the immediate constituents of the sentence which they command (i.e. that all adverbs are in a sentence higher than the one in which they are ultimately placed) is the distinction some grammars make between manner and all other adverbs. For example, Thomas and Kintgen (1974) have (1) $S \rightarrow (SM) NP Pred P$ (time, place); (2) $VP \rightarrow V... (manner)$. Chomsky (1965) gives the deep structure of a sentence like:

(9) I feed the dog enthusiastically.

as



One reason for differentiating between manner and other sentence adverbials is the lack of moveability of the former. Sentence adverbs have a wide range of possible surface positions, so to discover an adverb's scope, and what kind it is, one usually looks at its surface position and tests its moveability and its behaviour under questions, imperatives, negations, etc. (As pointed out, a sentential adverb or operator does influence these transformations.)

Huang (1975) says the adverb may have different scope according to whether it is a sentence- or VP-adverb, and according to its position in deep and surface structure. (The latter reflects the former.)

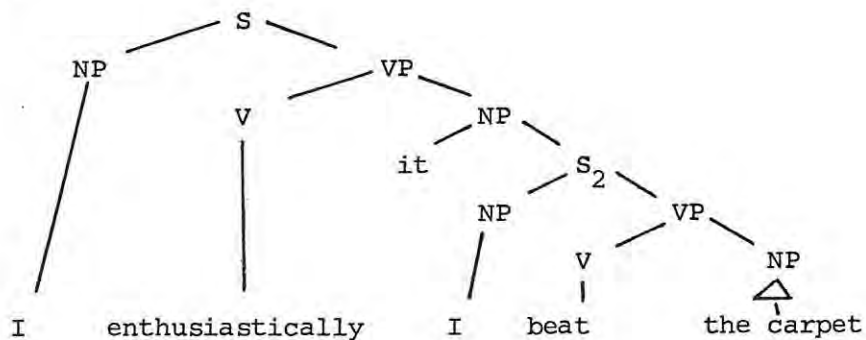
The restrictions for manner adverbs are as follows:

- (10) Unfortunately Jim spilled his soup. (Sentence adverb)
- (11) Jim unfortunately spilled his soup. (Sentence adverb)
- (12) *Quickly Jim spilled his soup. (Manner)
- (13) Jim quickly spilled his soup. (Manner)

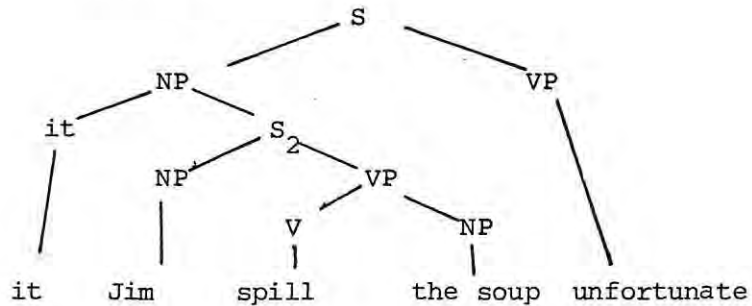
Lakoff (1965, p.13ff) says the deep structure of a sentence like:

- (14) I beat the carpet enthusiastically.

is:



In other words, he does see the adverb as commanding S_2 , and not as a constituent of the VP of S_2 . This is different from the Deep Structure of sentence adverbs, where the embedded sentence is the subject NP (Schreiber 1971):



Manner adverbs cannot be moved to the front of the subject NP, i.e. before the NP which they command and which commands them.

(Hausmann 1972, p.43)

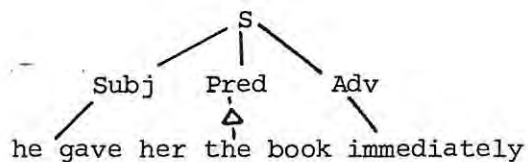
S.J. Keyser (1968, p.357ff) sees English as having two options in adverbial transformational rules:

S \longrightarrow Subj. + Pred. + Adv.

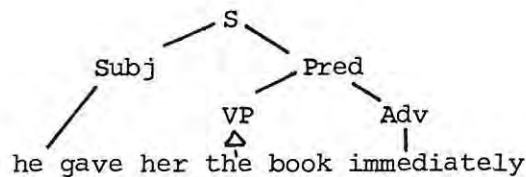
or

Pred \longrightarrow VP + Adv.

i.e.



or



hence the ambiguity of this sentence - a matter of sentence or verb modifier. In surface, this is not relevant to position, except that no sentence modifier goes inside the sentence after the verb.

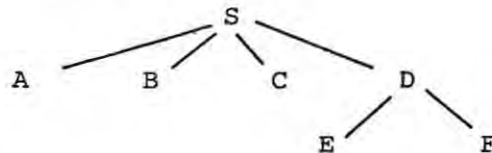
Adverbs have a very close relation to adjectives, as we have seen, e.g. immediately is derived from it + be + immediate on a superordinate abstract modifier with later incorporation rules.

Jakobson's (1964) suggested rules for adverbial placement are:

- (a) adverb moved to the left of VP.
- (b) adverb can be moved to the right of subject NP.
- (c) adverb may be initial.

Keyser (1968) disagrees, in his review of Jakobson, because these rules do not explain why adverbs cannot occur in certain positions.

It is easier, Keyser says, to say that adverbials may be placed between "sister" nodes; e.g. in

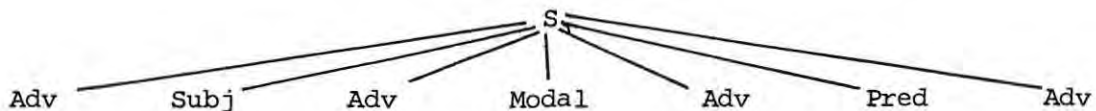


the adverb may be between A, B, C or D, but not between C and F, or B and E etc.

Keyser suggests a "transportation" convention to permit a particular constituent to occupy a position in a derived tree so long as the sister relations with all other nodes in the tree are maintained.

(1968, p.268).

His proposal for simultaneous placement of adverbs (with only one in the surface) is, in my opinion, a little strong:



because one could get:

(15) *Immediately John will send it.

Keyser is right, however, to try to explain the movement of sentence adverbs, and to account for the fact that adverbs are sister-

adjoined to the immediate constituents of the sentences they command. Placement of adverbials should definitely be a general rule, I feel.

In order to prove that manner and evaluative adverbs are outside the sentence in which they appear in surface structure, the idea of "command" is necessary, for the adverb must command the sentence in which it is placed. With evaluatives, the adverb can be before, between, or after any of the daughter constituents of the sentence which it commands, and which commands it, but manner adverbs cannot come first, because in deep structure they never command the sentence in which the surface NP subject is generated, and therefore cannot precede it.

Ross (1967, p.168) provides an adverb preposing rule which is last-cycled and upward-bounded:

$$\begin{array}{ccc}
 X & (+ \text{ adverb}) & Y \\
 1 & 2 & 3 \\
 \implies & 2 + 1 & 3
 \end{array}$$

There ought to be no difference between the placement of either type. Ross's constraint is not general enough: I believe manner and evaluative adverbs are placed by the same transformation (and therefore tense adverbs as well), and one must simply state that the adverb must not be allowed to be placed above the sentence which it commands in deep structure.

Hausmann (1972, p.43) suggests the following condition for adverb placement:

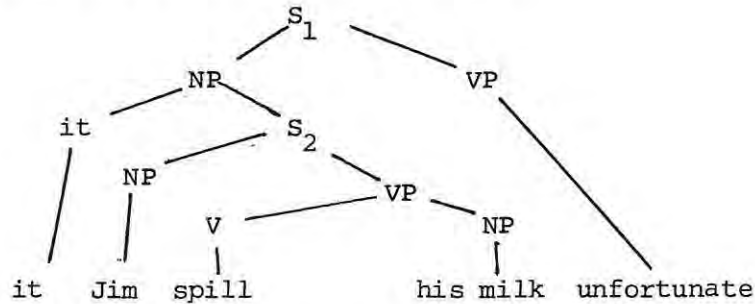
*** The node created by adverb placement must be commanded by the adjunct to be placed, but may not command the adjunct to be placed.

(1972, p.43).

It is assumed that the proper placement of the adverb is in daughter

adjunction to the sentence which the adjunct commands.

Hausmann discusses two other possible alternatives for placement, instead of Ross's (1972, pp.45-47). If



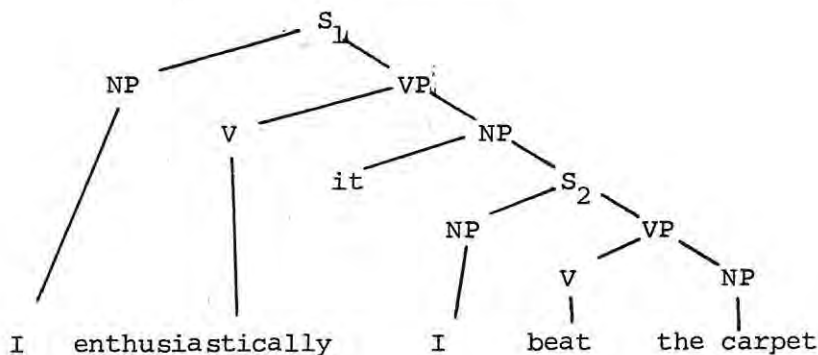
is the deep structure of evaluative adverbs, an adverbial placement transformation can properly generate:

(16) Unfortunately Jim spilled his milk.

if the above condition*** is maintained. This condition also prevents the ungrammatical manner adverbial in:

(17) *Quickly Jim spilled his milk.

But there is a problem with the manner adverbs. If condition*** is adequate for sentence and manner adverbs, the adverb-placement must be ordered with respect to other transformations. Condition*** says that the adverb enthusiastically in



can be sister-adjoined to any of the immediate constituents of S_2 . But the ordering of adverb-placement and Equi-deletion is a problem when the adverb is sister-adjoined just before or just after the subject NP of S_2 , e.g.

(18) I enthusiastically beat the carpet.

If the ordering is (a) adverb lowering

(b) Equi-NP deletion

with the adverb before the subject NP, we get:

(19) I enthusiastically I beat the carpet.



(20) I enthusiastically \wedge beat the carpet.

and when the adverb is after the subject NP, we get:

(21) I I enthusiastically beat the carpet.



(22) I \wedge enthusiastically beat the carpet.

As Bach (1968, p.92) points out, this is odd.

But if the ordering is (a) Equi-NP deletion

(b) adverb-lowering

the NP is deleted and then there is only one place to put the adverb:
to the left of the VP.

So Hausmann says:

... an adverb can only be lowered to a sister position
of the daughter constituent of a sentence which it
commands.

(1972, p.48).

This holds for manner and sentence adverbs, and is further proof
that Lakoff's (1965) analysis of manner adverbs is probably better
than Chomsky's (1965, p.104).

6.4.3 Adverb Lowering

Hausmann's placement condition explains the ungrammaticality
of:

(23) *Jim spilled his, unfortunately, milk.

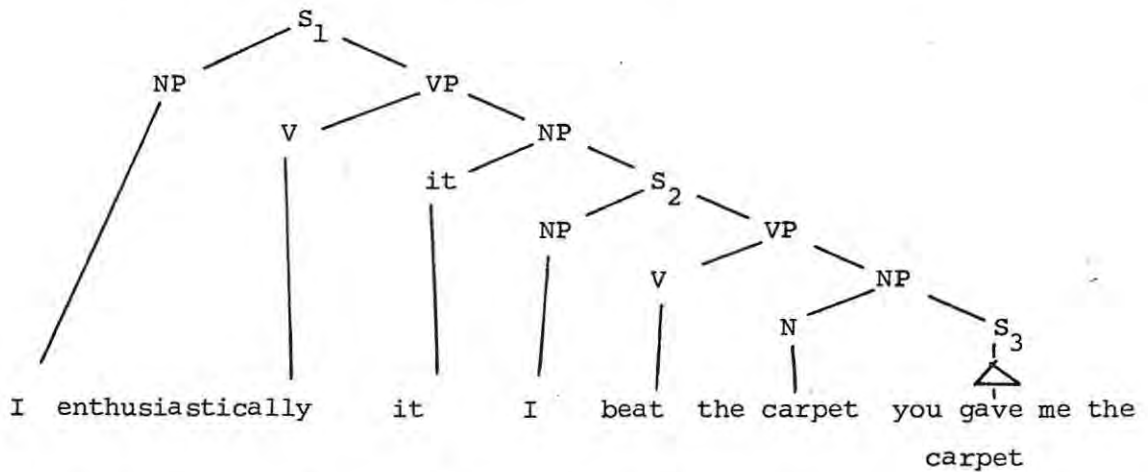
(24) *I beat the, enthusiastically, carpet.

We must also limit the lowering of the adverb to the sentence which is most immediately commanded by the adverb, to avoid sentences like:

(25) *I beat the carpet enthusiastically, which you gave me.

(26) *I beat the carpet which, enthusiastically, you gave me.

These sentences have a relative clause as the object NP of the embedded sentence, and the possible deep structure is:



So Hausmann's proposed conditions on adverb-lowering, to which, in my view, very few objections can be made, are:

- a) adverb must command the sentence in which it is placed, and be adjoined as a daughter-constituent of that sentence.
- b) S_2 must command the adverb.

These are parallel with the proposed conditions on tense-lowering, as will become evident.

So, as Huang (1975) points out, the adverb has different scope according to its deep structure position. Because manner adverbs can occur in any embedded sentence in a sentence, we have ambiguities, which can nevertheless be explained, e.g.

(27) Jim told me to come quickly.

(28) Jim abruptly told me to leave quickly.

(29) Jim told me to leave quickly, abruptly.

(30) Jim told me to leave quickly, quickly.

As a result, the adverb meaning varies widely according to its position. This is evident with generally in:

(31) Jim generally made himself useful.

(32) Generally Jim made himself useful.

(33) Jim made himself generally useful.

(34) Jim made himself useful generally.

In the first two, generally is a sentential temporal adverb from a higher predicate, meaning at most times, and in the other two it is a VP adverb of manner, from a deep adverbial node, and means in a general way.

Sentential adverbs are usually first or second in the sentence, and temporal adverbs, having the full sentence as argument (cf. Huang 1975) are usually sentential. The difference between the two types is also evident in:

(35) Jim kissed me again.

(36) Again Jim kissed me.

These are identical, because the adverb is sentential, but

(37) Jim closed the door again.

(38) Again Jim closed the door.

are different: in the first we have a VP adverb, giving the meaning returned to a closed state; in the second the VP adverb modifies the verb, not the state - it is the closing that is repeated.

The basic fact, which is undeniable, is that adverb-preposing is upward-bounded: the adverb may optionally be incorporated into the lower (main) predicate, but may not be removed outside the clauses with which it is in construction.

6.5 The Primacy of Tense Adverbs over Tense

6.5.0 General

I hope that by now I have shown that tense adverbials have a much closer affinity to modal and evaluative adverbs than manner adverbs, as regards their deep structure, and that they are very probably higher predicates. As has been pointed out, the difference between tense and manner adverbs does not affect the placement rules in any serious way, for they can be general enough to cope with both types.

There are still other points in favour of seeing tense adverbs as higher predicates. Having examined the theories of Ross (1967), Kiparsky (1968), Gallagher (1970) and McCawley (1971), all suggesting that tense is a higher predicate, with a great dependence on temporal adverbs, and having noted Crystal's (1966) argument (4.2.1) on the primacy of adverbs in regard to temporal references, one cannot help being strongly persuaded that tense adverbs are actually more important to time reference than tenses are.

Ross (1967) gives a convincing example of the importance of adverbs:

- (1) I promised Jim would do it tomorrow slowly.
- (2) *Tomorrow I promised Jim would do it slowly.

It is the adverb which dominates in a sentence like (1); the verb's tense is usually changed to agree with it. Precision in showing the difference between frequency, repetition, and single occurrences is given by separate adverbs, and so are slight temporal distinctions - the verb's tense is in agreement with the temporal adverb, rather than vice versa.

6.5.1 Dowty (1972)

If all the theories mentioned so far are correct, then either tense must be a two-place predicate, taking as its arguments

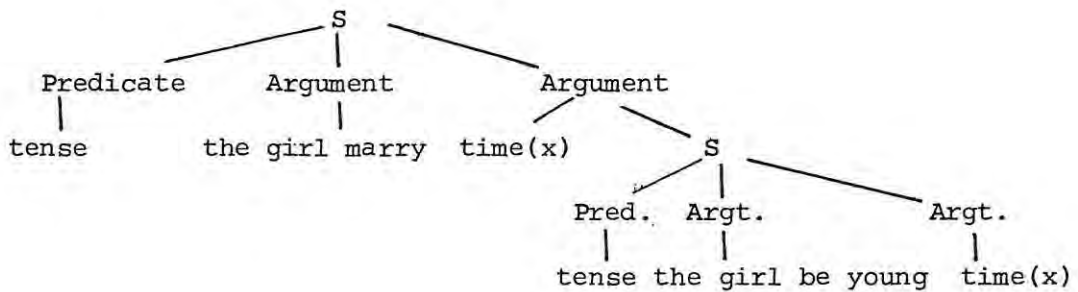
a preposition and a temporal expression, which must be something like that of an NP, because it can be relativised (cf. Ross), e.g.

(3) Jim was here on Monday, which was the worst possible day.
i.e. either tense must be a constituent in its own right, or, alternatively, it is the adverb which is the two-place predicate.

I have discussed several hypotheses on these lines already.

According to Dowty (1972) the former is the natural origin for relative clauses with when, having the head noun as temporal expression, not appearing in the surface (cf. Geis 1970), with a rule to delete the time at which, e.g.

(4) The girl married young.



This explains the cooccurrence of time(x) adverbs, and the need for tense agreement, and for the head noun to occur identically in the embedded sentence. The main clause can be moved into the temporally restricted adjectival clause with no change in meaning, as long as the two time references are compatible, e.g.

(5) On Monday night I found Jim studying in the room.

(6) I found Jim studying in the room on Monday night.

(7) *On Monday night I found Jim studying in the room on
Tuesday morning.

6.5.2 Gallagher (1970)

As we have seen, Gallagher (1970) suggests that a certain class of verbs are semantically anomalous with temporal adverbs (namely statives), and so says tense is not an obligatory category of

deep structure. For example,

(8) *He knew more languages at noon than anyone else.

(9) *Whoever took it had strong arms on Monday.

It has been shown that this is purely a matter of adverb selection and semantic compatibility.

(10) He knew more languages at 21 years than anyone else.
is perfectly acceptable, as is

(11) He knew more languages by noon than anyone else.
when knew then is equivalent to had learnt. The same applies to adjectives, which are tensable when predicated of certain nouns, but not others, e.g.

(12) *Jim's head was round on Sunday night.

(13) Jim's ball was round on Sunday night.

It is a matter of context and extra-linguistic knowledge.

(14) Did you see the nude dancing girls?

(15) **Did** you see the dancing girls nude?

(16) Did you see the blonde secretary?

(17) Did you see the secretary blonde?

(18) Did you see the nude statue?

(19) *Did you see the statue nude?

The analysis of temporally restricted adjectives by Dowty as higher predicates suggests the existence of parallels between their properties and those of quantifiers (also higher predicates) - we have seen this to be so in the case of adverbs and temporally restricted adjectives with respect to negation.

6.5.3 Yesterday and Recently

What becomes increasingly clear is that anything to do with time, or temporal specification, is in a superordinate position in the sentence.

There is, however, a slight problem with the yesterday and recently class of adverbs: recently adverbs can occur in the same positions as evaluative adverbs:

(20) In the last two weeks]
Recently] John has taken work.

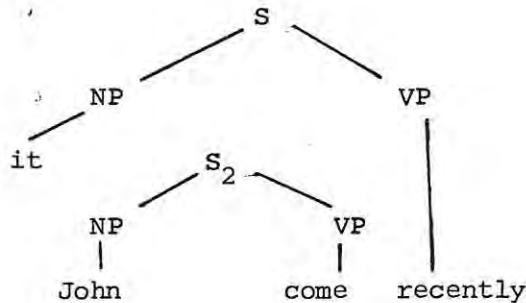
(21) John recently has taken work.

(22) John has recently taken work.

(23) John has taken work recently.

(24) *John has taken recently work.

Since they are the same as evaluatives, the same placement rules apply:



The temporal adverb must command S_2 . However, the data on yesterday adverbs is not as amenable, because the adverb cannot occur within the sentence:

(25) 2 weeks ago]
Yesterday] John took work.

(26) (?)John yesterday took work.

(27) *John took yesterday work.

(28) John took work yesterday.

This class of adverbs does not take present perfect, the recently class does.

Does this destroy the analysis of adverbs? In my opinion, the conditions still hold: recently adverbs behave well throughout, and yesterday adverbs have the one placement exception. So the rules for adverb placement could then be:

- a) An adverb must command the sentence into which it is lowered.
- b) An adverb must be adjoined as a daughter constituent of the sentence in which it is lowered.
- c) The S_2 must command the adverb.
- d) An extra restriction to prevent yesterday adverbs from being placed between the NP and VP of the sentence into which they are lowered.

So sentence, manner, and temporal adverbs must all be outside the sentence in which they appear in the surface. The deep structure formulations and possible movement transformations explain why these adverbs can move as they do, i.e. why sentence adverbs but not manner adverbs can be sentence-initial. So Zandvoort's (1957) intuitions are explained.

6.5.4 Summary

It is not surprising that English speakers feel that sentence adverbs are somehow separate from the sentence - they command all the constituents of the sentence, and are not commanded by all of them, so they have "primacy" over the sentence, which, in Langacker's view, is a term

... to be taken seriously. It is suggested that A is in some sense dominant over, or superordinate to B, when A bears one or both primacy relations to B (i.e. command, or precede, or both) ... A tends to act as a nucleus, ... B as a satellite.

(1969a, p.169).

This tentative formulation of the conditions of adverb placement supports Lakoff's (1965) analysis of manner adverbs, Dowty's (1972) analysis of temporally restricted adjectives, Huddleston's (1969), Ross's (1969), and McCawley's (1971) idea of tense and adverb relationships, Gallagher's (1970) hypothesis, Schreiber's (1971)

analysis of sentence adverbs, pronominalisation theories, and Seuren's (1974) theory of operators and nuclei. It also gives another important example of the operation of Langacker's (1969a) precede and command constraint, and moves toward a formulation of the Adverb Lowering Transformation.

6.6 The Derivation of Tense and Temporal Adverbs

6.6.0 General

It has been shown that tense and temporal adverbs are more abstract constituents than is often thought to be the case. To derive either tense from temporal adverbs or vice versa would surely make the grammar of English simpler, in view of the fact that they seem to share a common deep structure origin. Since temporal adverbs frequently seem to be the dominant member of the pair (tense and adverb), it is natural to hypothesise that tenses are derived from temporal adverbs, rather than the other way around.

This is exactly what Hausmann does (1972), and he arrives at the conclusion that the proposition is a viable one. What he tries to prove, initially, is that tense and temporal adverbs are derived from the same constituent.

6.6.1 Constituent Structure

Chomsky (1957) is most explicit about what determines constituent structure (C.S):

A significant number of the basic criteria for determining C.S. are actually transformational. The general principle is this: if we have a transformation that simplifies the grammar and leads from sentences to sentences in a large number of cases, ... then we attempt to assign a C.S. to sentences in such a way that

this transformation always leads to grammatical sentences,
thus simplifying the grammar even further.

(1957, p.83).

e.g. in Passive:

- (1) John kissed the girl \implies The girl was kissed by John.
 NP₁ V NP₂ NP₂ Aux be en V by NP₁
- (2) Peter went home \implies *Home was gone by Peter.

The latter is ungrammatical, so it must have a different C.S., and home cannot be an NP dominated by VP. So a word or a phrase is a constituent of a particular analysis if it undergoes a given transformation which requires an analysis of that type, and is not, if this is not the case.

Ross (1969a) shows this in analysing adjectives as NPs, giving ten examples. For example, in pronominalization of NP's:

- (3) John got the answer but Pete didn't get it. (NP)
 (4) Harry is smart, but doesn't look it. (Adj.)

and in non-restrictive relative clauses:

- (5) His argument, which he gave angrily, annoyed us.

coming from:

- (6) His argument, and the argument was given angrily, annoyed us.

Non-restrictive relative clauses only embed conjoined sentences onto NP's, which suggests that at some point in its derivation, the adjective in:

- (7) That Andy is clever, which he is, surprised us.

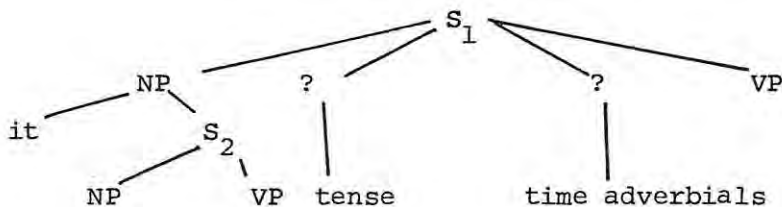
must be analysed as an NP.

It has been shown that a constituent A cannot be dominated by B if B is deleted under one of the constituent-deleting transformations which does not affect A - e.g. conjunction reduction. The difference between the kind of argument that proves a constituent is not of a

certain type, and that which says it is of a certain type, is that the former does not say what it really is, though it is very revealing as regards C.S.

It has also been shown that temporal adverbs are not dominated by the sentence in which they appear in the surface, and that, regardless of the node that immediately dominates them, they must be dominated by a sentence which also immediately dominates the sentence in which they appear in surface structure, and that they must be constituents higher than the sentence, so tense commands that sentence.

So both tense and temporal adverbs must be dominated by a sentence which dominates the sentence in which they appear in the surface, which must command both tense and time adverbs, i.e.



As Hausmann points out, the ? represents the fact that any number of constituents may dominate them, as long as they are not dominated by a sentence other than S_1 , i.e. by VP, subject NP, aux of the verb, etc. The deep structure of temporal adverbs is vague, but it seems likely that they are dominated by an NP at some stage, because:

a) they are not adjectival, and cannot be pronominalised, e.g.

*the tomorrow but; *the yesterday time; *the at 5 p.m. train.

b) they can be possessives, like NP's, e.g.

yesterday's train; tomorrow's bus; 5 minute's time.

c) they are inflected for number, e.g.

(8) John comes on Tuesdays.

We might say that the NP is in the VP of the highest sentence - meeting all the command requirements, and the restrictions on extra-

position. Lakoff (1965) proposes this for other reasons. Also, as with NP's, time adverbials have selectional restrictions with verbs, but some are prepositional, others clausal, and other constituents also have restrictions:

(9) At 6 p.m. Mary hit John on the nose.

(10) Sue didn't want to go after she heard the maniac had escaped.

One would like to say these temporal adverbs are dominated by an NP, dominated by the highest VP, to avoid the rewrite rule:

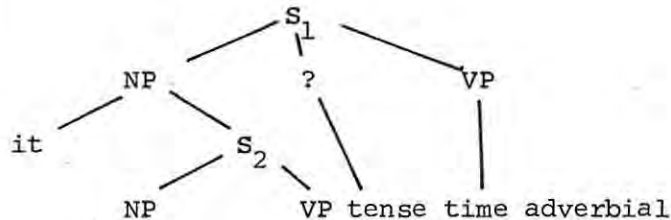
$$S \implies NP + NP$$

because, for generality's sake, it is best for

$$S \implies NP + VP$$

i.e. some other constituent besides S must dominate this second VP.

We can hypothesise:



Hausmann suggests that all temporal adverbs are derived from the same node as tense, by showing that they share the same characteristics. Where, in S_1 , the node is attached, is irrelevant.

6.6.2 The Parallels between Tense and Time Adverbials

We have already seen from Crystal (1966) and Kiparsky (1968) etc., that temporal adverbs and time are semantically associated with the verb, hence the recurrent idea of traditional grammarians that adverbs modify verbs or adjectives.

In English, tense is also uniquely associated with the verb, appearing only on verbs or in the VP in the surface, and seeming to "modify" the verb in the same way, because it limits the possibility of the action of the verb, restricting its occurrence to a particular

moment of time. The cooccurrence restrictions between adverbs and tense are also highly suggestive.

There is evidence that tense and temporal adverbs are uniquely associated in language, i.e. the function of the adverb seems to be to place the action of the verb in a set temporal relation, limiting the action either to the present, past or future. Often this is a simple assertion, e.g.:

(11) Bob is phoning right now.

(12) Harry walked in 2 hours ago,

(13) George will go tomorrow.

When there are two clauses, temporal adverbs make relational statements, the time adverbs in the subordinate clause qualifying that of the main clause

(14) Yesterday he answered the phone 2 hours after he came in.

Tense is the same and can assert when the action of the verb occurred (though less specifically than an adverb), e.g.:

(15) John watered the lawn.

(16) Mary is phoning now.

(17) Bob will come.

Tense also establishes the temporal relationships between two clauses, e.g.:

(18) John had answered the phone when Mary screamed.

(19) Bob will have done more than he ought when he recalls
your words.

Naturally, temporal adverbs limit the action more specifically than tense, and can be absolutely precise, e.g.:

(20) The Japanese bombed Pearl Harbour at 7.05 a.m. December
7th, 1941.

As Hausmann suggests, surely it would be best to derive one from the other, or both from a higher node.

6.7 Tense from Time Adverbials

6.7.0 General

The argument that adverbs are more specific than tense might suggest that tense is the more basic, i.e. that temporal adverbs are just adverbs which modify tense further. But since the semantic content of tense is always inherent in a specific tense temporal adverb (e.g. past in yesterday), it might simplify the grammar if tense were derived from temporal adverbs.

6.7.1 Ungrammatical Sentences

The stated hypothesis is supported by the following sentences:

- (1) *Peter is sleeping late yesterday.
- (2) *Joe comes home yesterday.

Both are ungrammatical, but are more likely to be seen as having the wrong tense than the wrong adverb. This is, of course, a tendency rather than a strong condition. In other words, (2) is better as

- (3) Joe came home yesterday.

rather than

- (4) Joe comes home (today).

So it seems that temporal adverbs are more reliable in specifying time than tense is. This opinion is, I admit, very subjective.

If temporal adverbs are the basis from which tense is derived, then one would expect more mistakes in the rules that manifest the tense than in those for adverbials, because the latter are more fundamental; or perhaps tense errors are morphologically more probable.

6.7.2 Present for Future Time

More evidence for the hypothesis that tense is derived

from adverbials comes from the fact that English can have a present tense marker on a verb of future action, e.g.

(5) John comes home tomorrow.

If tense is derived, we can say that its placement is superficial. Time adverbs can be realized as either present or future tense. If the adverb tomorrow is omitted, the present tense is no longer acceptable if future reference is required.

If adverbs come from tense, we would have to say that the fact that present tense can mean future or present time is an accident of the grammar. The alternative of future time being realized optionally as present or future tense is better, because it directly relates future and present tense, and the element which determines the sentence's tense, the temporal adverb, is then basic.

6.7.3 Transformations

Given ordered transformations, tense placement could precede any of these transformations, I admit, though this would complicate the grammar, which is a point against the hypothesis. No English clause allows more than one specification of the time by a tense time adverbial, yet we get:

(6) Last year we went to Paris in May, but this year we will go in June.

where both sentences have two specifiers. Huddleston (1969, p.779) analyses sentences like these as having one temporal adverb in deep structure, the month merely narrowing down the time reference. But

(7) Yesterday John was coming tomorrow.

is analysed by him as:

(8) Yesterday John said he was coming tomorrow.

or

(9) Yesterday John planned to come tomorrow.

from which he says John said/planned has been deleted because tense comes from temporal adverbs - this would otherwise be pure coincidence.

It has been shown that the sequence of tenses can be easily handled if tense is in a daughter position of the higher sentence, therefore manifesting a command relation with the verbs which had non-logical tenses, i.e. a tense which agreed with the main verb tense, but not expected semantically, e.g.

(10) I didn't know you *are / were here.

The argument has little force, for Ross (1967) shows that sequence of tenses can be handled without a command relationship. But there are areas where both temporal adverbs and tense must command the others in the sentence, another example of their similarity, pointing to their derivation from each other.

6.7.4 The Command Relationship

McCawley (1971, p.110ff) says that tense is a pronominalization of a temporal adverb, because he sees the privileges of occurrence of temporal adverbs in a matrix of embedded sentences. So

(11) Though Jim was tired, he couldn't sleep last night.

(12) Though Jim was tired last night, he couldn't sleep.

(13) Jim couldn't sleep last night, though he was tired.

(14) *Jim couldn't sleep, though he was tired last night.

He notes that in pronominalisation (Langacker 1969a) a pronoun must be preceded or commanded by its antecedent, hence (14)'s ungrammaticality: last night neither precedes nor commands the tense past on couldn't sleep.

Perhaps there is a different explanation. McCawley would probably agree that each sentence has only one temporal adverb associated with it (1971, 102ff); if this is so, then the matrix and embedded sentence in (11) to (14) each have one temporal adverb, and a deep structure like:

- (15) *Though John was tired last night, he couldn't sleep
last night.

which is ungrammatical for the same reason that the following sentence is ungrammatical:

- (16) *Jim wanted to marry a girl whose mother hated Jim.

- pronominalisation is obligatory here, so perhaps it is the case that repeated adverbs must be deleted in the same sentence too, not arbitrarily, but according to the principle underlying pronominalisation, i.e. a temporal adverb cannot be deleted unless the pronominalising adverb either precedes or commands it. We have seen that much the same deletion conditions obtain for tenses, but that here the precede relationship does not seem relevant, only the command one. I repeat the relevant section (cf. Ch. 5, p. 190):

- (17) After seeing all Europe in one month, Gary will realize
he planned too much.

- (18) After seeing all Europe in one month, Gary realized he
planned too much.

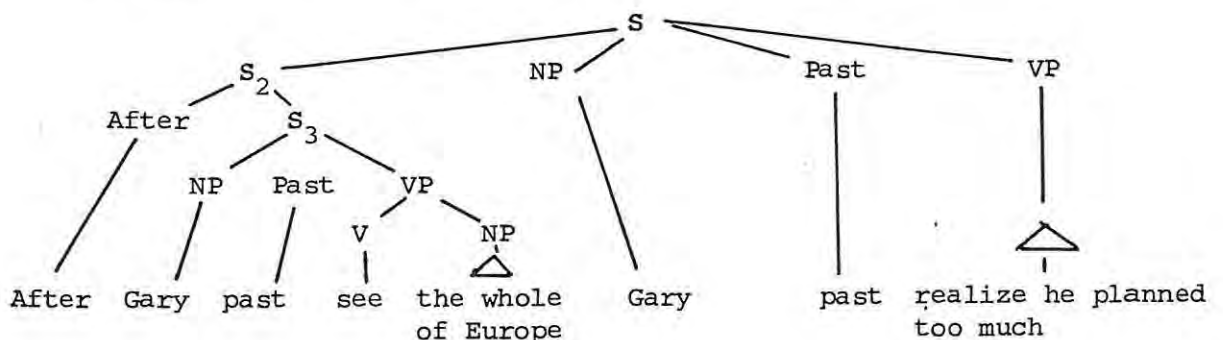
The present participle in each is transformationally derived, and the tense in the deep clauses agrees with that in the main clause, i.e. (17) =

- (19) After Gary will (future) see ... he will (future) realize...

and (18) =

- (20) After Gary saw (past) ... he realized (past)...

So the latter could be derived from:



The dependent clause is ultimately dominated by the sentence in the independent clause in the sentence. Tense can be deleted from the deep clause in (20), tense deletion being stated in terms of the command relationship: tense is deleted from the independent clause, even when the dependent clause precedes it, because the following is ungrammatical, and all sentences like it - the wrong tense is deleted:

- (21) *After Gary saw Europe in two months, he realizing he planned too much.

Command relations of tenses in deep clauses accounts for the proper deletions, but the fact that they also exist between temporal adverbs does not prove that tense comes from the adverb, because the similarity of the command relations can exist either before or after tense placement. But there is another parallel between tense and temporal-adverbs: they can both zero their like-constituents. As Hausmann puts it:

This similarity of behaviour, even after separation is only to be expected in a grammar that relates phenomena.

(1972, p.152).

6.7.5 Concord

Another point which is noteworthy in this respect is the fact that tense and temporal adverbs must agree, in grammatical sentences: there can be no contradictions between the inherent semantic content of temporal adverbs and that of tenses, and this is what Crystal (1966) points out, when he lists adverbs which typically cooccur with specific tenses. The same basic idea is also evident in Jespersen (1933), Zandvoort (1957), Firth (1962), Ota (1963), Ward (1964) and others.

Crystal highlights the nature of English tense and temporal adverbs, especially the way in which they function together. He says of:

(22) I live in London as from next week.

Here the present tense is being used as future.

(1966, p.5).

this is... theoretically doubtful and pedagogically confusing. But even a more carefully phrased statement, like "here the present tense is being used to refer to future time" can and should be argued against. The crucial point is that it is not the present tense on its own which is causing the change in temporal emphasis, which is then given a new label, but the present tense in collaboration with ... or being specified by an adverbial word, phrase or clause of time, both of which work together to produce a definable temporal relation which may then be referred to with a new label. It is not a question of tense form alone giving the relevant distinguishing indication of time, as has been traditionally assumed, but of tense form with or without adverbial specification which gives unambiguous indication.

(1966, p.5).

This idea of collaboration of tense specification and the temporal adverb is given more emphasis by him:

... one interprets a given tense form in a particular way either because the key to the interpretation is given in the form of an adverbial specifier, or because the absence of such a key is itself equally clear as a pointer to which time is being referred to ... labels such as future, or habitual, then, should not be given to the verb form alone, but to the combination of the two forms: verb and adverb, the adverb reinforcing the verb's potential

for referring in the general direction of a particular temporal aspect, and specifying this aspect further.

(1966, p.4-5).

If it is true that tense alone is inadequate to specify temporal relations and if it can be shown that time is often obligatorily specified by temporal adverbs (in Crystal's analysis he says (p.7) that this is so 65% of the time) in combination with tense, then there are two logical and possible explanations:

- 1) Semantic interpretation rules sometimes do and sometimes do not refer to both tense and time adverbials for a semantic reading of time.
- 2) Semantic interpretation rules always refer to both tense and time adverbs for a reading of time.

Obviously (2) would be simpler in grammar, because one type of interpretation rule is preferable. The best way to reflect the status of temporal adverb and tense in English, and the need for the two to function together, is surely to derive tense from temporal adverbs, and have the semantic interpretation rules apply to only one node of the grammar - the adverbial node.

6.7.6 Habitual Adverbs

If it is true that tense and time adverbs are the same in deep structure, then it would be expected that the other adverbs (habitual, durative) have the same identity:

- (23) John came to work on Mondays.
- (24) John comes to work on Mondays.
- (25) John will come to work on Mondays.

Proof that such adverbs are not the adverbs of time which relate the action to the moment of speech comes from the fact that each of these sentences can also take a tense time adverbial which is not habitual, e.g.

argument for deriving sentence adverbs from adjectives, because selectional restrictions between them and other lexical items in the sentence are the same, e.g.:

- (33) *I command you to probably go.
- (34) *I command you (for it) to be probable to go.
- (35) Clearly, N is President of Ghana.
- (36) It is clear that N is President of Ghana.
- (37) *Warmly, Joe was wrong.
- (38) *That Joe was wrong was warm.

So selectional restrictions need only be stated for the adjective once, says Schreiber, and not the sentence adverb, in the deep structure. So if tense and time adverbs are the same constituent at the point of deep structure, there may be some syntactic fact of language which has been traditionally analysed as having cooccurrence restrictions with both time adverbs and tense, which could collapse into one if they are the same deep constituent. Such identical cooccurrence restrictions would be strong evidence that tense and time adverbs are indeed the same in deep structure, while any differences between them as regards their possible structural occurrences would be evidence against the hypothesis.

6.7.8 Aspectual Verbs

Aspectual verbs seem to have the same cooccurrence restrictions with time adverbs as with tense (Newmeyer 1969), which till recently have been seen as dual criteria for distinguishing them from other verbs. Newmeyer says aspectual verbs:

are lexical items whose semantic role is to function as the predicate of a proposition rather than to modify or refer specifically to one item in that proposition.

(1969, p.3).

e.g.

(39) John happened to kiss Mary on the nose.

which is the predicate of a whole proposition, and

(40) John tried to kiss Mary on the nose.

which is two propositions.

Newmeyer convincingly argues that there are verbs, adverbs, and modal auxiliaries in the class of aspectual verbs, which have the following properties, which he enumerates on page 5:

a) in deep structure they are all intransitive, or subject-embedding.

b) they all show the full deep cooccurrence restrictions:

i) they never cooccur with any adverb.

ii) they may never select tense independently of their complement verb.

iii) they may never select aspect independently of their complement verb.

This seems to be correct for manner adverbs:

(41) *Rob happened quickly to see Mary undressing slowly.

(42) *Rob is likely happily to see his brother sadly.

As Newmeyer claims, there are also restrictions between time adverbs and aspect: they must agree in their modification of the matrix and embedded verbs, e.g.

(43) *Joe happened that morning to drink 4 pints of milk in the night.

(44) *Peter happened yesterday to get into the team today.

and also tense, e.g.

(45) *It happened that Mark will be working tomorrow.

If tense comes from time adverbs, then the last sentence is ungrammatical because the previous ones were - a matter of disparity of temporal adverbs. Selectional restrictions of tense and time adverbs

are the same, and neither can occur independent of their complement verb.

6.8 Adverb Placement

6.8.0 General

Hausmann's (1972) suggestion for adverb placement, with adverbs initially outside the sentence, was:

		+V							
		+Adjective	X	NP		-	VP	Y	
		1	2	3			4	5	
Condition	⇒ (a)	∅	2	1	3			4	5
I commands S	(b)	∅	2	3	1			4	5
S commands I	(c)	∅	2	3		-	4	1	5

The output is no longer an adverb outside the sentence - it has been lowered. But because temporal adverbs are never adjectives, there should surely be two rules: an adverb-formation rule for sentence and manner adverbs, and an adverb-lowering rule, for all adverbs, only the latter being relevant here, because of our focus on tense and time adverbials.

It has been seen that tense is also outside its sentence, with the same conditions to constrain the lowering thereof as for adverbs, resulting in the following rules, suggested by Hausmann:

- (1) Adverb-formation.
- (2) Adverb-lowering.
- (3) Adverb-placement.
- (4) Tense lowering (not crucially ordered).
- (5) Tense incorporation.

The first three steps are accomplished by the above rule. The fact that there is no need to order the lowering of adverbs and tense is suggestive - why not collapse them? This would be simple if tense

were derived from adverbs because the same conditions would apply to both lowering transformations, so both would be correctly placed.

We must simply prove that adverb-lowering precedes tense-formation.

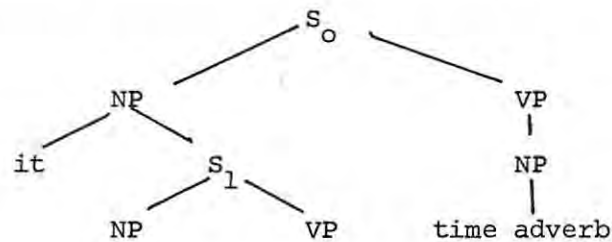
There is apparently no contradictory evidence.

The order therefore appears to be:

- (1) Adverb-formation.
- (2) Adverb-lowering.
- (3) Adverb-placement.
- (4) Tense-formation.
- (5) Tense-placement.
- (6) Tense-incorporation.

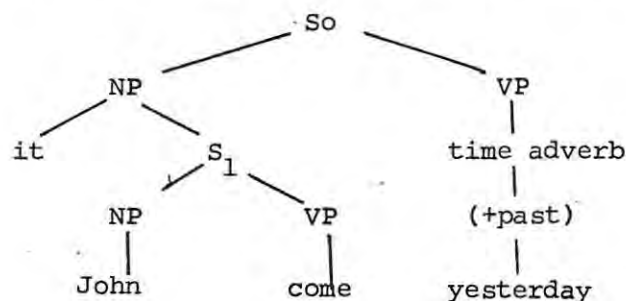
Such a grammar captures the generalization that both function the same only if tense comes from temporal adverbs.

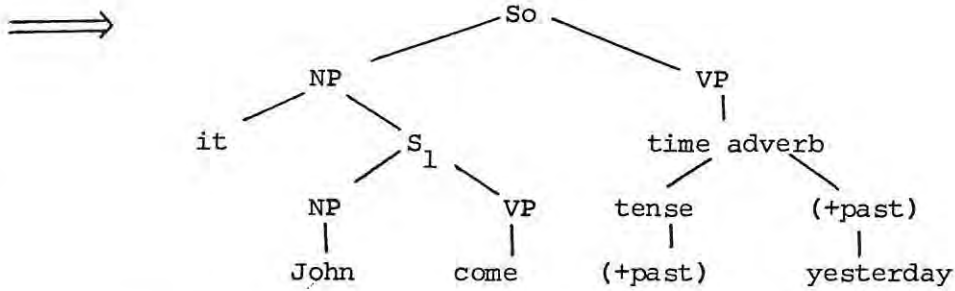
So every English sentence would have a time-adverbial node in deep structure, whether there were a surface adverb or not:



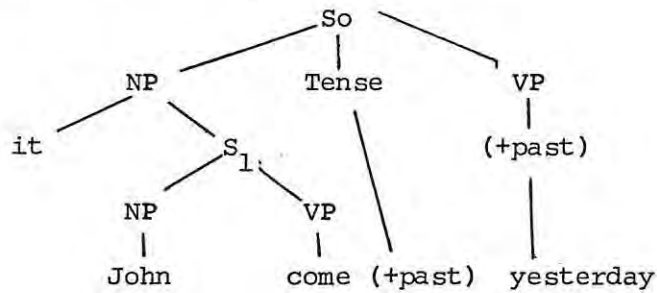
The adverbial node would be generated with an inherent time feature of either (+past), (+present), or (+future), which would block the lexical insertion of temporal adverbs with different features.

So an adverb with (+past) allows the insertion of yesterday, and the tense-formation copies that feature as a daughter of the adverb node.

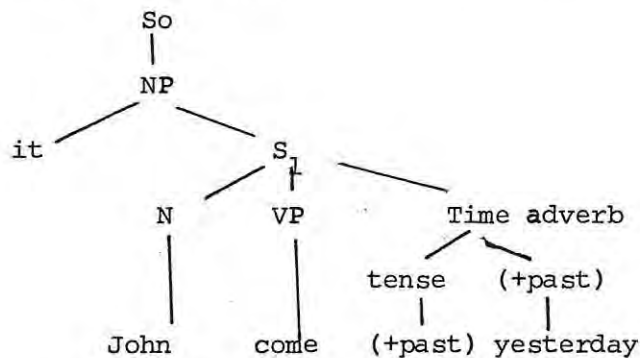




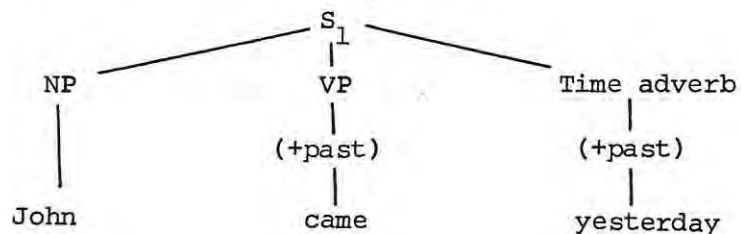
Tense placement then daughter-adjoints tense as a daughter of the sentence which most immediately dominates it:



Tense incorporation would then place tense either on the auxilliary (if there is one), or main verb, i.e. on all verbs which it commands, and which command it. But tense is lowered at the same time as the adverb, so adverb-lowering gives:



Then tense-incorporation puts tense on the auxilliary or main verb, the So, it, and NP are deleted under Ross's (1969) principle of unbranching node deletion, giving:



The specification of English tense would, I feel, be relatively simple if tense were seen as coming from an inherent semantic feature on time adverbs through a tense-formation, -placement, and -incorporation transformation.

6.9 Summary

I have argued that the most adequate grammar of English would derive tense from underlying temporal adverbs, thereby automatically specifying the cooccurrence restrictions between tense and certain classes of temporal adverbs, like yesterday, tomorrow, recently, 2 weeks ago, etc. This hypothesis is based on evidence that temporal adverbs and tense must be higher predicate constituents, which therefore command the sentence in which they occur in surface structure. It was argued that temporal adverbs must be constituents of a sentence which dominates the sentence in which they occur because they must be in a position in a higher sentence to allow extraposition to apply, and not to be deleted in sentence pronominalisation.

The analysis of temporal adverbs as higher predicates was independently justified by the fact that the conditions of temporal adverb-lowering are necessary to lower sentence and manner adverbs too, at least in Lakoff's analysis of manner adverbs (1965) and Schreiber's of manner adverbs (1968, 1971). It appears that Hausmann's more general lowering transformation is therefore viable.

From evidence about the syntactic behaviour of tense in relation to various structure-destroying transformations, it was shown that tense cannot be a deep structure feature of the VP, or a constituent of the surface sentence in which it occurs - the relevant transformations were conjunction-reduction, do-so, and sentence-pronominalisation. More evidence came from Sequence of Tense Rules, and the historical analogies between English and Indo-European.

It was also shown that tense must be lowered by a transformation which has exactly the same conditions as the adverb-lowering transformation, i.e.

(i) tense must command the sentence in which it occurs,
and

(ii) tense must be commanded by that sentence.

From arguments about the parallel syntactic behaviour of tense and temporal adverbs with respect to (i) zeroing, (ii) the structure-destroying transformations, (iii) their relation to Indo-European, and (iv) their same lowering transformations, it was suggested that an important generalisation can be captured by the grammar if this is not a deep structure category, but is derived from temporal adverbs.

I feel that I must, at this point, make it quite clear that the hypothesis that tenses are derived from adverbs is essentially tentative, and that I certainly do not believe in a God-given grammar. What I have tried to do in Chapter 6 is to coordinate several separate but similar theories on the topic (viz. those of Kiparsky (1968), Huddleston (1969), McCawley (1971) and Hausmann (1972)) in order to try to clarify the issue at stake, and, perhaps, to provoke thought as regards the real origin and function of tense.

My main hypothesis in this chapter was, I hope it is clear, that tense and adverbs are both daughters of higher sentences, and share a number of suggestive similarities and parallels. We have no right to reach any definite conclusions on the basis of the evidence provided, but we can assume that there is a strong probability of a deep affinity, and a possibility of a common source between adverbs and tense.

OVERALL SUMMARY

It has not been my aim to provide conclusive evidence for or against any one hypothesis regarding Time and Tense. I have simply attempted to collect together and collate much of what has been written on the topic of tense in English, in order to show what the current trends of thought are.

In Chapter One I presented a brief survey of some of the more basic notions associated with time and tense, in order to provide a background for the more linguistic approach to follow. I therefore examined such issues as the difference between time and tense, the problem of the passage and directionality of time, of the present moment, time and space, tense as a universal, and various features of tense systems. I sketched Bull's system of scalars, vectors and axes as representative of our English tense system.

Chapter Two dealt with time and logic, but as I am a mere layman in matters logical, I refrained from discussing any individual logical system in depth, and rather discussed various problems which appear to confront the logician in formulating a tensed or tenseless logic. This chapter aimed at providing a better understanding of the linguistic issues to follow, for time and logic are intimately connected with language.

Chapter Three was more linguistically oriented, and in it I attempted to provide a broad outline of the development of thoughts about tense before the Transformationalist period (pre 1960). Because of the vast scope involved, I had, perforce, to be brief at times. I gave attention to tense in classical grammatical studies, and summarized how it was seen from about 1500 to 1800. I gave more detailed treatment to the twentieth century, focussing specifically

on grammarians like Jespersen (1933), Twaddell (1960), Ota (1963), Palmer (1965) and others - all, writers typical of the Structuralist era.

At the end of Chapter Three I provided an overall summary of ideas on the main tenses by the end of the structuralist period - ideas which were to change radically within the next few years.

In Chapter Four I discussed the ideas of tense of some of the main transformationalist/generativists - Diver (1964), Crystal (1966), Huddleston (1968), Gallagher (1970), McCawley (1971) and Seuren (1974), in an attempt to show how theories on tense were becoming increasingly abstract, and how most data indicated that it is highly probable that tense is an abstract higher predicate of the sentence in which it appears in surface structure, closely related to temporal adverbs.

Chapter Five continued in the same vein. I tried to show, using syntactic tests, that tense is a higher predicate, and used arguments involving Conjunction Reduction (based on Kiparsky (1968)), VP Constituency, Sequence of Tense, Pronominalization, and Quantification.

In Chapter Six I focussed more closely on tense-time adverbials, in order to show that they have the same syntactic properties as tense, are also probably deep superordinate predicates, and are closely related to tense. My suggestion was that either tense is derived from temporal adverbs or vice versa, as this would simplify the grammar. The derivation procedures at the end of the chapter (6.8) were largely based on Hausmann (1971).

I made no detailed reference to extralinguistic matters which affect tenses, in this study - such factors as are discussed by G. Lakoff (1971) (presuppositions and relative well-formedness) and by R. Lakoff (1975). Tense is not a matter of pure Structuralism, just as language is not - extralinguistic factors ought to be

accounted for before any study can claim to be conclusive.

For this reason I do not in any way claim to have made an exhaustive study of time and tense - I have simply attempted to summarize and coordinate thoughts on the subject, and to suggest tentatively that the most adequate grammar of English would probably derive tense from underlying temporal adverbs.

SELECT BIBLIOGRAPHY

The following texts do not represent an exhaustive bibliography, but are those which, in my opinion, are more relevant to the topic of time and tense.

Aldridge, M.V.

1976. Quantifiers in English. Doctoral dissertation, Rhodes University, Grahamstown.

Allen, R.L.

1966. The Verb System of Present-day American English. Hague Mouton and Co., The Hague.

Anderson, J.

1973. The Ghost of Time Past, Foundations of Language. Vol.9, pp.481-492.

1974. On Existence and the Perfect, Foundations of Language. Vol.10, pp.333-419.

Andrews, A.

1971. Understood Tense and Underlying Forms, Linguistic Inquiry. Vol.2, pp.542-544.

Aristotle

1949. Categories and de Interpretatione, Transl. E.M. Edghill, ed. L. Minio-Paluello, Clarendon Press, Oxford.

1960. The Physics, Transl. by P.H. Wickstead and F.M. Cornford, Heineman, London.

Augustine

1948. Confessions, Transl. by E.P. Pusey, Henry Regnery Co., Chicago.

Bach, E.

1964. An Introduction to Transformational Grammars. Holt, Rinehart and Winston, New York.

1968. Nouns and Noun Phrases. cf. Bach and Harms (eds.), 1968. pp.91-124.

Bach, E. and Harms, R.T. (eds.).

1968. Universals in Linguistic Theory. Holt, Rinehart and Winston, New York.

Bauer, G.

1970. The English Perfect Reconsidered, Journal of Linguistics. Vol.6, pp.189-199.

Begg, J.C.

1952. Time Order for Minds. Mind. Vol.61, pp.75-77.

Bierswisch, M.

1970. Semantics, in Lyons 1970, pp.166-184.

- Binnick, R.I.
1972. Will and be going to. Papers from the Eighth Regional Meeting of the Chicago Linguistic Society, pp.3-8.
- Bleiler, E.
1963. Essential Japanese Grammar. Dover Publications, New York.
- Bloch, B.
1947. English Verb Inflection, Language. Vol.23, pp.399-418.
- Bloomfield, L.
1935. Language (revised ed.). Allen and Unwin, London.
- Bodelson, C.A.
1937. The Expanded Tenses in Modern English, Englische Studien. Vol.71, pp.221-232.
- Bolinger, D.
1947. More on the Present Tense in English, Language. Vol.23, pp.434-436.
1971. The Nominal in the Progressive, Linguistic Inquiry. Vol.2, pp.246-250.
- Boyde, J. and Thorne, J.P.
1969. The Semantics of Modal Verbs, Journal of Linguistics. Vol.5, pp.57-74.
- Brown, R.
1963. Words and Things. Free Press of Glencoe, New York.
- Brusendorff, A.
cf. Charleston 1955, pp.265-278.
- Bryan, W.F.
1936. The Preterite and the Perfect Tense in Present-day English, Journal of English and Germanic Philology. Vol.35, pp.363-382.
- Bull, W.E.
1968. Time, Tense and the Verb. University of California Press, Berkeley.
- Calver, E.
1946. The Uses of Present Tense Forms in English, Language. Vol.22, pp.317-325.
- Chafe, W.L.
1970. Meaning and the Structure of Language. Chicago University Press, Chicago.
- Charlestone, B.M.
1941. Studies in the Syntax of the English Verb. Francke, Berne.
1955. A Reconsideration of the Problems of Time, Tense and Aspect in Modern English, English Studies. Vol.36, pp.263-278.

- Chomsky, N.
 1957. Syntactic Structures. Mouton, Gravenhage.
 1965. Aspects of the Theory of Syntax. Cambridge University Press, Cambridge, Massachusetts.
 1972. Selected Readings. eds. J. Allen and P. van Buren. Oxford University Press, Oxford.
- Churchward, C.
 1953. Tongan Grammar. Oxford University Press, London.
- Close, R.A.
 1958. Concerning the Present Tense, English Language Teaching. Vol.13, pp.57-66.
- Costa, R.
 1972. Sequence of Tense in that-clauses, Papers from the Eighth Regional Meeting of the Chicago Linguistic Society. pp.41-51.
- Crystal, D.
 1966. Specification and English Tense, Journal of Linguistics. Vol.2, pp.1-34.
- Curme, G.O.
 1931. Syntax: A Grammar of the English Language. III. D.C. Heath & Co., Boston.
 1932. Some Characteristic Features of Aspect in English, Journal of English and Germanic Philology. Vol.31, pp.251-255.
- Daswari, C.J.
 1969. Adverbs of Time and Location in English. (A Study in Generative Semantics.) Doctoral dissertation, Cornell University.
- Davidson, D. and Harman, G. (eds.).
 1972. Semantics of Natural Languages. Reidel, Dordrecht, Holland.
- Dennis, L.
 1940. The Progressive Tense: Frequency of its Use in English, Publications of the Modern Language Association. LV, pp.855-865.
- Deutschbein, M.
 cf. Charleston 1955, pp.265-278.
- de Villiers, M.
 1968. Die Grammatika van Tyd en Modaliteit. Balkema, Cape Town.
- Diver, W.
 1963. The Chronological System of the English Verb, Word. Vol.19, pp.141-181.
 1964. The Modal System of the English Verb, Word. Vol.20, pp.322-352.
- Dowty, D.
 1972. Temporally Restricted Adjectives (cf. Kimball, 1972), pp.51-54.

- Eddington, Sir A.S.
1920. Space, Time and Gravitation. Cambridge University Press, Cambridge.
- Edmonds, J.
1970. Constraints on Transformations. Doctoral dissertation, MIT.
- Epicureus
1972. Epicureus: An Introduction, ed. J.M. Rist. Cambridge University Press, Cambridge.
- Fillmore, C.J. and Langendoen, D.T. (eds.).
1971. Semantics and Transformational Grammar. Holt, Rinehart and Winston, New York.
1971. Studies in Linguistic Semantics. Holt, Rinehart and Winston, New York.
- Fillmore, C.J.
1968. Lexical Entries for Verbs, Foundations of Language. Vol.4, pp.373-393.
- Firth, J.R.
1962. A Synopsis of Linguistic Theory 1930-1955. Studies in Linguistic Analysis. The Philological Society, Oxford.
- Findlay, J.N.
1963. Language, Mind and Value. Philosophical Essays. Allen and Unwin, London.
- Fowler, R.
1971. An Introduction to Transformational Syntax. Routledge and Kegan Paul, London.
- Francis, W.N.
1958. The Structure of American English. Ronald Press, New York.
- Fries, C.C.
1952. The Structure of English: An Introduction to the Construction of English Sentences. Harcourt and Brace, New York.
- Garcia, E.
1964. History of the English Tense System. Doctoral dissertation, Columbia University, New York.
- Gale, R.
1968. The Language of Time. Routledge and Kegan Paul, London.
1968a. The Philosophy of Time. Macmillan, London.
- Gallagher, M.
1970. Adverbs of Time and Tense. Papers from the Sixth Regional Meeting of the Chicago Linguistic Society. pp.220-225.
- Geis, J.E.
1970. Lexical Insertion of Location and Temporal Prepositions. Papers from the Sixth Regional Meeting of the Chicago Linguistic Society. pp.226-232.

- Givon, T.
1971. Notes on the Sematic Structure of English Adjectives. Language. Vol.46, part 4, pp.816-837.
- Goedsche, C.R.
1932. The Terminate Aspect of the Expanded Form, its Development and its Relation to the Gerund. Journal of English and Germanic Philology. Vol.31, pp.469-477.
- Grady, M.
1970. Syntax and Semantics of the English Verb Phrase. Mouton, The Hague.
- Harris, J.
1825 (revised ed. of 1751). Hermes, or a Philosophical Inquiry Concerning Universal Grammar. Collingwood, London.
- Harris, Z.S.
1955. Methods in Structural Linguistics. Chicago University Press, Chicago.
- Hatcher, A.G.
1951. The Use of the Progressive Form in English - A New Approach, Language. Vol.27, pp.254-281.
- Hausmann, R.B.
1972. A Transformational Analysis of English Tense and Temporal Adverbs. Doctoral dissertation, University of Wisconsin.
- Hill, A.A.
1958. Introduction to Linguistic Structure from Sound to Sentence in English. Harcourt, Brace and Co., New York.
- Huang, S.F.
1975. A Study of Adverbs. Mouton, The Hague.
- Huddleston, R.D.
1969. Some Observations on Tense and Deixis in English, Language. Vol.45, pp.777-806.
- Hudson, R.A.
1973. Tense and Time Reference in Reduced Relative Clauses, Linguistic Inquiry. Vol.4, part 2, pp.251-256.
- Jacobs, R.A. and Rosenbaum, P.S. (eds.).
1970. Readings in English Transformational Grammar. Ginn, Waltham, Massachusetts.
- Jacobson, S.
1964. Adverbial Positions in English. Ab Studentbok Uppsala.
- Jacobson, R. and Halle, M. (eds.).
1956. Foundations of Language. Mouton, The Hague.
- Jenkins, L.
1972. Will-deletion, Papers from the Eighth Regional Meeting of the Chicago Linguistic Society, pp.173-183.

- Jespersen, O.
 1922. Language, its Nature, Development and Origin. Part 6. Allen and Unwin, London.
 1924. Philosophy of Grammar. Allen and Unwin, London, pp.254-289.
 1931. A Modern English Grammar of Historic Principles. Part 4. Munksgaard, Copenhagen.
 1933. Essentials of English Grammar. Allen and Unwin, London, pp.205-246.
- Johnson, O.E.
 1936. Tense Significance as the Time of Action, Language Dissertations. Vol.2, pp.48-88.
- Jocs, M.
 1964. The English Verb. University of Wisconsin Press, Madison, Milwaukee.
- Katz, J.J. and Fodor, J.A. (eds.).
 1964. Structure of Language. Engelwood Cliffs, West Jersey.
- Kenney, A.
 1963. Action, Emotion and Will. Longmans, London.
- Keyser, S.J.
 1968. Review of Jacobson, S. Language. Vol.44, pp.357-374.
- Kimball, A.
 1972. Semantic Structures. Seminar Press, New York.
- King, R.D.
 1969. Historical Linguistics and Generative Grammar. Prentice-Hall, Engelwood Cliffs, New Jersey.
- Kiparsky, P.
 1968. Tense and Mood in Indo-European Syntax. Foundations of Language. Vol.4, pp.30-57.
- Klima, E.S.
 1964. Negation in English. cf. Katz and Fodor (eds.).
- Kruisinga, E.
 1931. A Handbook of Present-day English. Part 2, 5th ed. Groningen, Noordhoff, pp.22-25, pp.388-392.
- Lakoff, G.
 1965. On the Nature of Syntactic Irregularity. Dissertation, Indiana University.
 1970. Irregularity in Syntax. Holt, Rinehart and Winston, New York (Appendix A, p.115).
 1970a. Pronominalization, Negation and the Analysis of Adverbs. cf. Jacobs and Rosenbaum (eds.), 1970.
 1971. Presupposition and Relative well-formedness. cf. Steinberg and Jacobovitz (eds.), 1971, pp.329-341.
- Lakoff, R.
 1970. Tense and its Relation to Participants. Language. Vol.46, pp.838-849.

- Lancelot, C. and Arnauld, A.
1968. A General and Rational Grammar. The Scolar Press Ltd., Menston, England. (8th ed.)
- Langacker, R.W.
1968. Language and its Structure. Harcourt, Brace and World, New York.
1969a. Pronominalization and Chain of Command. cf. Reibel and Schane (eds.), 1969, pp.160-186.
1969. Mirror-Image Rules I: Syntax, Language. Vol.45, pp. 575-598.
1972. Fundamentals of Linguistic Analysis. Harcourt, Brace Jovanovich, New York.
- Langendoen, D.T.
1969. The Study of Syntax; the generative-transformational Approach to the Structure of American English. Holt, Rinehart and Winston, New York.
1970. Essentials of English Grammar. Holt, Rinehart and Winston, New York.
- Lawler, J.M.
1962. Generic to Fault, Papers from the Eighth Regional Meeting of the Chicago Linguistic Society, pp.247-250.
- Leech, G.N.
1969. Towards a Semantic Description of English. Longmans, London.
1971. Meaning and the English Verb. Longmans, London.
- Lees, R.B.
1969. A Grammatical Analysis of the English Comparative Construction, cf. Reibel and Schane (eds.), 1969, pp.303-315.
- Lowth, R.
1773. (bp of London 1762). A Short Introduction to English Grammar. Ed. by M.V. Aldridge, I.S.E.A., Grahamstown.
- Lucas, J.R.
1973. A Treatise on Time and Space. Longmans, London.
- Lucretius
1952. On the Nature of the Universe. Transl. by R. Latham, Penguin, London.
- Lyons, J.
1963. Structural Semantics. Blackwell, Oxford.
1970. New Horizons in Linguistics. Penguin, Middlesex.
- Maclay, H.
1971. Overview, cf. Steinberg and Jacobovitz (eds.), 1971, pp.157-160.
- McCawley, J.D.
1968a. Concerning the Base Component of a Transformational Grammar, Foundations of Language. Vol.4, pp.243-269.
1968. The Role of Semantics in a Grammar, cf. Bach and Harms (eds.), pp.124-169.

1970. English as a VSO Language, Language. Vol.46, pp.286-299.
- 1971a. Tense and Time Reference in English, cf. Fillmore and Langendoen (eds.), 1971, pp.97-115.
1971. Where do Noun Phrases come from? cf. Steinberg and Jacobovitz (eds.), pp.217-232.
1976. The Category Status of English Modals, Foundations of Language. Vol.12, pp.597-603.
- MacTaggart, J.M.E.
1968. cf. Gale 1968, pp.86-98.
- Michael, I.
1970. English Grammatical Categories and the Tradition to 1800. Cambridge University Press, Cambridge.
- Nehls, D.
1975. The System of Tense and Aspect in English, IRAL. Vol.13, part 4, pp.275-292.
- Newmeyer, F.J.
1969. English Aspectual Verbs. Studies in Linguistics and Language, Vol. 6, University of Washington, Seattle.
- Nida, E.A.
1943. A Synopsis of English Syntax. University of Oklahoma, Oklahoma (1960 ed.).
- Nilsen, D.L.F.
1972. English Adverbials. Hague, Pans, Paris.
- Onions, C.T.
1932. An Advanced English Syntax. Routledge and Kegan Paul, 6th ed., London.
- Ota, A.
1963. Tense and Aspect of Present-day American English. Kenkyusha, Tokyo.
- Palmer, H.E. and Blandford, F.G.
1928. (3rd ed. 1969). A Grammar of Spoken English. Heffer, Cambridge.
- Palmer, F.R.
1965. A Linguistic Study of the English Verb. Longmans, London.
1967. The Semantics of the English Verb, Lingua. Vol.18, pp.179-195.
- Pears, D.F.
1950. Time, Truth and Inference, Proceedings of the Aristotelian Society. Ll, pp.1-9.
- Plato
1888. Timaeus. ed. R.D. Archer-Hind, Macmillan, London.
1975. Sophist. ed. R.S. Bluck, The University Press, Manchester.
- Plotinus
1962. The Six Enneads. 3rd ed. revised by B.S. Page. Transl. by S. Mackenna. Faber and Faber, London.

- Poutsma, H.
 1921. The Character of the English Verb and the Expanded Form. Noordhoff, Groningen.
 1922. Mood and Tense of the English Verb. Noordhoff, Groningen.
 1926. A Grammar of Late Modern English Part II Section II. pp.203-224. Noordhoff, Groningen.
- Prior, A.
 1965. Elementary Logic. Harper and Row, New York.
 1968. Papers on Time and Tense. Clarendon, Oxford.
- Priscian
 1855. Institutiones Grammaticae. ed. Martin Hertz. The University Press, Leipzig.
- Quine, W.
 1965. Elementary Logic. Harper and Row, New York.
 1966. Selected Logic Papers. Random House, New York.
 1970. The Philosophy of Logic. Prentice-Hall, Engelwood Cliffs, New Jersey.
- Quintillian
 1955. Quintillian, ed. G. Kennedy. Twayne, New York.
- Quirk, R., Greenbaum, S., Leech, G. and Svartvik, J. (eds.).
 1972. A Grammar of Contemporary English. Seminar Press, New York.
- Rau, C.
 1953. Theories of Time in Ancient Philosophy, Philosophical Review. Vol.62, pp.514-525.
- Reibel, D.A. and Schane, J.A. (eds.).
 1969. Modern Studies in English. Prentice-Hall, Engelwood Cliffs, New Jersey.
- Reichenbach, H.
 1947. Elements of Symbolic Logic. Macmillan, New York.
- Rescher, N.
 1966. On the Logic of Chronological Propositions, Mind. Vol.75, pp.75-86.
- Rosenbaum, P.
 1965. The Grammar of English Predicate-Complement Constructions. MIT Press, Cambridge, Massachusetts.
- Robins, R.H.
 1967. A Short History of Linguistics. Longmans, London.
- Ross, J.R.
 1967. Constraints on Variables in Syntax. Doctoral dissertation, cf. McCawley 1971a, pp.98-99.
 1969a. Adjectives as Noun Phrases, cf. Reibel and Schane 1969, pp.352-360.
 1969. A Proposed Rule of Tree-Pruning, cf. Reibel and Schane 1969, pp.288-300.

- Schreiber, P.A.
 1968. English Sentence Adverbs: A Transformational Analysis. University of New York, New York.
 1971. Some Constraints on the Formation of English Sentence Adverbs, Linguistic Inquiry. Vol.2, pp.83-102.
- Seuren, P.H.
 1969. Operators and Nucleus. Cambridge University Press, Cambridge.
 1972. Autonomous versus Semantic Syntax, Foundations of Language. Vol.8, pp.237-265.
 1974. Semantic Syntax. Oxford University Press, London.
- Smart, J.J.C.
 1968. cf. Gale 1968, pp.163-169.
- Steinberg, D.D. and Jacobovitz, L.A. (eds.).
 1971. Semantics: An Interdisciplinary Reader in Philosophy, Linguistics and Psychology. Cambridge University Press, Cambridge.
- Strang, B.
 1962. Modern English Structure. Arnold, London.
- Sweet, H.
 1900. A New English Grammar, Logical and Historical, Part III Syntax. Clarendon Press, Oxford.
- Taylor, R.
 1968, see Gale 1968, pp.221-232.
- Thrax, Dionysius
 1883. Grammar, ed. G. Uhlig. University Press, Leipzig.
- Thomas, O. and Kintigen, E.R.
 1974. Transformational Grammar and the Teacher of English. 2nd ed. Holt, Rinehart and Winston, New York.
- Thomasen, R.H. and Stalnaker, R.C.
 1973. A Semantic Theory of Adverbs, Linguistic Inquiry. Vol.4, pp.195-220.
- Twaddell, W.F.
 1960. The English Verb Auxilliaries. Brown University Press, Providence.
- Vanneck, G.
 1958. The Colloquial Preterite in Modern American English, Word. Vol.14, pp.237-246.
- Varro, M. Terentius
 1951. De Lingua Latina. Transl. by R.G. Kent. Heinemann, London.
- Waismann, F.
 1950. Analytic-Synthetic II. Analysis IX. pp.26-28.
 1956. How I See Philosophy. Contemporary British Philosophy, 3rd series. Allen and Unwin, London (pp.450-453).

- Ward, J.M.
1964. The Uses of Tense in English. Longmans, London.
- Weyl, H.
1949. Philosophy of Mathematics and Natural Science. Princeton,
New Jersey.
- Williams, D.C.
1968. See Gale 1968, pp.98-117.
- Wittgenstein, L.
1958. The Blue and Brown Books. Blackwell, Oxford.
- Whorf, B.L.
1956. Language, Thought and Reality. ed. J.B. Carroll.
Massachusetts Institute of Technology Press, Cambridge,
Massachusetts.
- Zandvoort, R.W.
1932. On the Perfect of Experience, English Studies. Vol.14,
pp.11-20.
1957. A Handbook of English Grammar. Longmans, London.

APPENDIX I

ENGLISH AND TONGAN

No claim has been made in this study that tense should be derived from temporal adverbs universally, though such an assertion may indeed be defensible, especially if Kiparsky's conclusions about Indo-European can be extended to include modern English, as I have argued. There is some important evidence in Churchward (1953) to support further a claim that tense should be derived from temporal adverbs. He says Tongan, a Polynesian language, has a set of four temporal adverbs, one of which obligatorily appears in every sentence, but has no tense as such. Since Tongan and English are natural languages, and if there are such things as universals, perhaps the differences are only superficial; if temporal adverbs are seen as fully separate from tense (with no relation besides co-occurrence restrictions) then there is no explicit way to relate the English and Tongan grammars. English has obligatory tense on verbs, and also temporal adverbs, while Tongan has no tense on verbs, but, curiously enough, obligatory temporal adverbs (where they are optional in English).

There is a way to make the differences between the two languages rule-governed without changing the facts of the languages; this analysis meets the expectation that languages may have deep structure parallels and surface differences. If English is seen as having obligatory adverbs in deep structure from which tense-formation results in tenses on verbs, then Tongan and English would not differ as regards temporal adverbs in deep structure: both would have deep temporal adverbs with every sentence. Tongan just does not have transformation rules like those of English and other modern European languages.

Analysing English as having an optional deletion of temporal adverbs after tense-formation accords with Chomsky's restrictions on the permissibility of the deletion of constituents: the essential semantic content of the deleted temporal adverb is recoverable from the tense. Tongan does not allow deletion of the temporal adverb for the very reason that it has no tense on verbs, from which the adverb would be recoverable.

English has two more rules: obligatory tense-formation, and optional temporal-adverb deletion. There would be no clear way to give the relation between the two languages if tense were not derived from temporal adverbs.

APPENDIX II

GRAMMARS WRITTEN BETWEEN 1500 AND 1800

(More detailed information obtainable in Michael (1970))

- Aiken, J. 1693. *The English Grammar*. London.
- Beattie, J. 1788. *The Theory of Language*. London.
- Brightland, J. 1711. *A Grammar of the English Tongue*. London.
- Corbet, J. 1784. *A Concise System of English Grammar*. Shrewsbury.
- Cooper, C. 1685. *Grammatica Linguae Anglicanae*. London.
- Dalton, J. 1801. *Elements of English Grammar*. Manchester.
- Farro, D. 1754. *The Royal Universal British Grammar and Vocabulary*. London.
- Greenwood, J. 1711. *An Essay Towards a Practical English Grammar*. London.
- Harris, J. 1751. *Hermes*. London. (See Bibliography.)
- Haywood, J. 1800. *A Short Introduction to the English Tongue*. Sheffield.
- Hornsey, J. 1793. *A Short English Grammar*. York.
- Johnson, C. 1779. *The Complete Art of Writing Letters*. London.
- Jones, R. 1768. *Hieroglyphic*. London.
- Lancelot, L. and Arnauld, A. 1762. *A General and Rational Grammar*. Lily. 1486, 1793. *Lily's Accidence Improved*. London.
- Mattaire, M. 1712. *The English Grammar and the Tradition to 1800*. London.
- Perry, W. 1776. *The Only Sure Guide to the English Tongue*. Edinburgh.
- Pope, D. 1790. *Key to English Grammar*. London.
- Priestley, J. 1762. *A course of Lectures on the theory of Language and Universal Grammar*. Warrington.
- Saxon, S. 1737. *An English Grammar*. London.
- Story, J. 1778. *An Introduction to English Grammar*. Newcastle.
- Turner, D. 1739. *An Abstract of English Grammar and Rhetoric*. London.
- Wallis, D. 1687. *Institutio Logicae*. Oxford.
- Ward, J. 1758. *Four Essays upon the English Language*. London.
- Wilkins, J. 1668. *An Essay Towards a Real Characterization and a Philosophical Language*. London.

